

MILITARY SPECIFICATION

MICROCIRCUITS, LINEAR, INTERNALLY TRIMMED ANALOG MULTIPLIER, HYBRID AND MONOLITHIC SILICON

This specification is approved for use by all Departments and Agencies of the Department of Defense.

Reactivated for new design as of 7 December 2004. May be used for either new or existing design acquisition.

The requirements for acquiring the product herein shall consist of this specification sheet and MIL-PRF-38535

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic and hybrid silicon, internally trimmed analog multipliers. Two product assurance classes and a choice of case outlines and lead finishes are provided and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3)

1.2 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-38535, and as specified herein.

1.2.1 Device types. The device types are as follows:

<u>Device type</u>	<u>Circuit</u>	<u>Maximum multiplying error</u>
01	4 quadrant analog multiplier	1%
02	4 quadrant analog multiplier	2%
03	4 quadrant analog multiplier	4%
04	4 quadrant analog multiplier	4%

1.2.2 Device class. The device class is the product assurance level as defined in MIL-PRF-38535.

1.2.3 Case outline. The case outlines are as designated in MIL-STD-1835 and as follows:

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
I	MACY1-X10	10	Can
C	GDIP1-T14 or CDIP2-T14	14	Dual-in-line

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, 3990 East Broad St., Columbus, OH 43218-3990, or emailed to linear@dsccl.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

1.3 Absolute maximum ratings.

Supply voltage	± 22 V
Internal power dissipation	500 mW
Input voltage ^{1/}	
X, Y, V _{OS} , and Z	$\pm V_s$
Storage temperature	-65°C to +150°C
Output short circuit to ground	Indefinite
Lead temperature (soldering, 60 seconds)	300°C
Junction temperature (T _J).....	+175°C

1.4 Recommended operating conditions.

Supply voltage range	13.5 V dc to ± 18 V dc
X input voltage DIFF/CM	± 10 V dc maximum
Y input voltage DIFF/CM	± 10 V dc maximum
Z pin:	
Device types 01, 02, and 04	± 10 V dc
Device type 03, (Z pin connected to output pin)	± 10 V dc
Ambient operating temperature range (T _A)	-55°C to +125°C

1.5 Power and thermal characteristics.

<u>Case outline</u>	<u>Maximum allowable power dissipation</u>	<u>Maximum θ_{JC}</u>	<u>Maximum θ_{JA}</u>
I	333 mW @ T _A = +125°C	25°C/W	+150°C/W
C	400 mW @ T _A = +125°C	22°C/W	+85°C/W

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

^{1/} Maximum input voltage is zero when supplies are turned off.

2.2 Government documents.

2.2.1 Specifications and Standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-38535 - Integrated Circuits (Microcircuits) Manufacturing, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.

MIL-STD-1835 - Interface Standard Electronic Component Case Outlines.

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.4).

3.2 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.

3.3.1 Case outlines. The case outlines shall be as specified in 1.2.3.

3.3.2 Functional block diagrams and terminal connections. The functional block diagrams and terminal connections shall be as specified on figure 1.

3.3.3 Schematic circuits. The schematic circuits shall be maintained by the manufacturer and made available to the qualifying activity and the preparing activity (DSCC-VA) upon request.

3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).

3.5 Electrical performance characteristics. The electrical performance characteristics are as specified in table I, and apply over the full recommended ambient operating temperature range, unless otherwise specified.

3.6 Electrical test requirements. Electrical test requirements for each device class shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.

3.8 Marking. Marking shall be in accordance with MIL-PRF-38535.

3.9 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 49 (see MIL-PRF-38535, appendix A).

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Multiplier accuracy (-x)(-y)	MAx-y-	$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	01	-0.5	0.5	%FS
		$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-1.0	1.0	
		$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	02	-1.0	1.0	
		$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	
Multiplier accuracy (-x)(+y)	MAx-y+	$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	01	-0.5	0.5	%FS
		$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-1.0	1.0	
		$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	02	-1.0	1.0	
		$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	
Multiplier accuracy (+x)(-y)	MAx+y-	$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	01	-0.5	0.5	%FS
		$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-1.0	1.0	
		$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	02	-1.0	1.0	
		$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	
Multiplier accuracy (+x)(+y)	MAx+y+	$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	01	-0.5	0.5	%FS
		$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-1.0	1.0	
		$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	02	-1.0	1.0	
		$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Multiplier accuracy drift	$MA_{xy}/\Delta T$	$V_x = \pm 10\text{ V}$, $V_y = \pm 10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	-0.01	0.01	%FS/ $^\circ\text{C}$
			02	-0.02	0.02	
Output offset voltage	V_{OIO}	$V_x = V_y = V_z = 0$, $T_A = 25^\circ\text{C}$	01	-15.0	15.0	mV
			02	-30.0	30.0	
		$V_x = V_y = V_z = 0$, $T_A = -55^\circ\text{C}$	01	-39.0	39.0	
			02	-70.0	70.0	
		$V_x = V_y = V_z = 0$, $T_A = 125^\circ\text{C}$	01	-45.0	45.0	
			02	-80.0	80.0	
Output offset voltage drift	$V_{OIO}/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	01	-300.0	300.0	$\mu\text{V}/^\circ\text{C}$
			02	-500.0	500.0	
Offset voltage (x)	$V_{IO}(x)$	$T_A = 25^\circ\text{C}$	01	-10.0	10.0	mV
			02	-20.0	20.0	
		$T_A = -55^\circ\text{C}$	01	-22.0	22.0	
			02	-36.0	36.0	
		$T_A = 125^\circ\text{C}$	01	-25.0	25.0	
			02	-40.0	40.0	
Output offset voltage drift (x)	$V_{OIO}(x)/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	01	-150.0	150.0	$\mu\text{V}/^\circ\text{C}$
			02	-200.0	200.0	
Offset voltage (y)	$V_{IO}(y)$	$T_A = 25^\circ\text{C}$	01	-10.0	10.0	mV
			02	-20.0	20.0	
		$T_A = -55^\circ\text{C}$	01	-22.0	22.0	
			02	-36.0	36.0	
		$T_A = 125^\circ\text{C}$	01	-25.0	25.0	
			02	-40.0	40.0	
Offset voltage drift (y)	$V_{IO}(y)/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	01	-150.0	150.0	$\mu\text{V}/^\circ\text{C}$
			02	-200.0	200.0	
Offset voltage (z)	$V_{IO}(z)$	$T_A = 25^\circ\text{C}$	01	-15.0	15.0	mV
			02	-30.0	30.0	
		$T_A = -55^\circ\text{C}$	01	-39.0	39.0	
			02	-70.0	70.0	
		$T_A = 125^\circ\text{C}$	01	-45.0	45.0	
			02	-80.0	80.0	
Offset voltage drift (z)	$V_{IO}(z)/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	01	-300.0	300.0	$\mu\text{V}/^\circ\text{C}$
			02	-500.0	500.0	

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Input bias current (+)	$+I_{IB}$	$T_A = -55^\circ\text{C}$	01, 02	-2.5	2.5	μA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	
Input bias current (-)	$-I_{IB}$	$T_A = -55^\circ\text{C}$	01, 02	-2.5	2.5	μA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	
Input offset current	I_{IO}	$T_A = -55^\circ\text{C}$	01, 02	-300.0	300.0	nA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-250.0	250.0	
Output short circuit current (+)	$I_{OS(+)}$	$R_L = 0$, $t \leq 25\text{ ns}$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	01, 02	-40.0		mA
		$T_A = 125^\circ\text{C}$		-30.0		
Output short circuit current (-)	$I_{OS(-)}$	$R_L = 0$, $t \leq 25\text{ ns}$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	01, 02		50.0	mA
		$T_A = 125^\circ\text{C}$			38.0	
Supply current (+)	I_{CC}	$R_L = \infty$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02		6.5	mA
Supply current (-)	I_{EE}	$R_L = \infty$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02	-6.5		mA
Common mode rejection ratio (x)	CMRR(x)	$-10\text{ V} \leq V_x \leq +10\text{ V}$, $V_y = +10\text{ V}$, $T_A = -55^\circ\text{C}$	01	65.0		dB
			02	54.0		
		$-10\text{ V} \leq V_x \leq +10\text{ V}$, $V_y = +10\text{ V}$, $25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	70.0		
			02	60.0		
Common mode rejection ratio (y)	CMRR(y)	$-10\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $T_A = -55^\circ\text{C}$	01	65.0		dB
			02	54.0		
		$-10\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	70.0		
			02	60.0		
Common mode rejection ratio (z)	CMRR(z)	$-10\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $T_A = -55^\circ\text{C}$	01	65.0		dB
			02	54.0		
		$-10\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	70.0		
			02	60.0		

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Output voltage swing	V_{OP}	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02	+11.0	-11.0	V
Power supply rejection ratio (-)	PSRR1	$\pm 13.5\text{ V} \leq V_S \leq \pm 15\text{ V}$, $V_y = +10\text{ V}$, $V_x = +5\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02	-10.0	10.0	mV/V
Power supply rejection ratio (+)	PSRR2	$\pm 15\text{ V} \leq V_S \leq \pm 18\text{ V}$, $V_x = +5\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02	-4.0	4.0	mV/V
Settling time (+)	$t_s(+)$	See figure 3, $T_A = 25^\circ\text{C}$	01, 02		3.0	μs
Settling time (-)	$t_s(-)$	See figure 3, $T_A = 25^\circ\text{C}$	01, 02		3.0	μs
Slew rate (+)	SR(+)	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02	18.0		V/ μs
Slew rate (-)	SR(-)	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01, 02	18.0		V/ μs
Feedthrough (x)	FTx	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	-35.0	35.0	mV
			02	-60.0	60.0	
Feedthrough (y)	FTy	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	-12.0	12.0	mV
			02	-24.0	24.0	
Small signal amplitude error (x)	AEx	$V_x = 2\text{ V(p-p)}$, $C_c = 1000\text{ pF}$, $V_y = +10\text{ V}$ 1% error, $T_A = 25^\circ\text{C}$	01, 02	75.0		kHz
Small signal amplitude error (y)	AEy	$V_y = 2\text{ V(p-p)}$, $C_c = 1000\text{ pF}$, $V_x = +10\text{ V}$ 1% error, $T_A = 25^\circ\text{C}$	01, 02	75.0		kHz
Nonlinearity (x)	NLx	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	-0.3	0.3	%FS
			02	-0.5	0.5	
Nonlinearity (y)	NLy	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	01	-0.15	0.15	%FS
			02	-0.2	0.2	
Wideband noise	NI(BB)	$T_A = 25^\circ\text{C}$	01, 02		1.5	mV rms
Multiplier accuracy (-x)(-y)	MAx-y-	$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	03	-1.0	1.0	%FS
		$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy (-x)(+y)	MAx-y+	$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	03	-1.0	1.0	%FS
		$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Multiplier accuracy (+x)(-y)	MAx+y-	$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	03	-1.0	1.0	%FS
		$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy (+x)(+y)	MAx+y+	$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	03	-1.0	1.0	%FS
		$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy drift	MAxy/ ΔT	$V_x = \pm 10\text{ V}$, $V_y = \pm 10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-0.04	0.04	%FS/ $^\circ\text{C}$
Output offset voltage	V _{OIO}	$V_x = V_y = V_z = 0$, $T_A = 25^\circ\text{C}$	03	-30.0	30.0	mV
		$V_x = V_y = V_z = 0$, $T_A = -55^\circ\text{C}$		-190.0	190.0	
		$V_x = V_y = V_z = 0$, $T_A = 125^\circ\text{C}$		-230.0	230.0	
Output offset voltage drift	V _{OIO} / ΔT	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	03	-2.0	2.0	mV/ $^\circ\text{C}$
Offset voltage (x)	V _{IO} (x)	$T_A = 25^\circ\text{C}$	03	-50.0	50.0	mV
		$T_A = -55^\circ\text{C}$		-100.0	100.0	
		$T_A = 125^\circ\text{C}$		-100.0	100.0	
Output offset voltage drift (x)	V _{OIO} (x)/ ΔT	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	03	-800.0	800.0	$\mu\text{V}/^\circ\text{C}$
Offset voltage (y)	V _{IO} (y)	$T_A = 25^\circ\text{C}$	03	-50.0	50.0	mV
		$T_A = -55^\circ\text{C}$		-100.0	100.0	
		$T_A = 125^\circ\text{C}$		-100.0	100.0	
Offset voltage drift (y)	V _{IO} (y)/ ΔT	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	03	-800.0	800.0	$\mu\text{V}/^\circ\text{C}$
Input bias current (z)	I _{IB} (z)	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-12.0	12.0	μA
Input bias current (+)	+I _{IB}	$T_A = -55^\circ\text{C}$	03	-4.0	4.0	μA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	
Input bias current (-)	-I _{IB}	$T_A = -55^\circ\text{C}$	03	-4.0	4.0	μA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.0	2.0	

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Input offset current	$-I_{IO}$	$T_A = -55^\circ\text{C}$	03	-400.0	400.0	nA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-200.0	200.0	
Output short circuit current (+)	$I_{OS}(+)$	$R_L = 0$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	03	-45.0		mA
		$R_L = 0$, $T_A = 125^\circ\text{C}$		-30.0		
Output short circuit current (-)	$I_{OS}(-)$	$R_L = 0$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	03		30.0	mA
		$R_L = 0$, $T_A = 125^\circ\text{C}$			30.0	
Supply current (+)	I_{CC}	$R_L = \infty$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03		6.5	mA
Supply current (-)	I_{EE}	$R_L = \infty$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-6.5		
Common mode rejection ratio (x)	CMRR(x)	$-10\text{ V} \leq V_x \leq +10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	50.0		dB
Common mode rejection ratio (y)	CMRR(y)	$-10\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $T_A = -55^\circ\text{C}$, $25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	50.0		dB
Common mode rejection ratio (y)	CMRR(y)	$-10\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $T_A = -55^\circ\text{C}$, $25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	50.0		dB
Output voltage swing	V_{OP}	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	10.0	-10.0	V
Power supply rejection ratio (-)	PSRR1	$\pm 13.5\text{ V} \leq V_S \leq \pm 15\text{ V}$, $V_y = +10\text{ V}$, $V_x = +5\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-50.0	50.0	mV/V
Power supply rejection ratio (+)	PSRR2	$\pm 15\text{ V} \leq V_S \leq \pm 18\text{ V}$, $V_x = +5\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-50.0	50.0	mV/V
Settling time (+)	$t_s(+)$	See figure 3, $T_A = 25^\circ\text{C}$	03		2.0	μs
Settling time (-)	$t_s(-)$	See figure 3, $T_A = 25^\circ\text{C}$	03		2.0	μs
Slew rate (+)	SR(+)	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	25.0		V/ μs
Slew rate (-)	SR(-)	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	35.0		V/ μs
Feedthrough (x)	FTx	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-100.0	100.0	mV
Feedthrough (y)	FTy	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-80.0	80.0	mV

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Small signal amplitude error (x)	AEx	$V_x = 2\text{ V(p-p)}$, $C_c = 1000\text{ pF}$, $V_y = +10\text{ V}$ 1% error, $T_A = 25^\circ\text{C}$	03	70.0		kHz
Small signal amplitude error (y)	AEy	$V_y = 2\text{ V(p-p)}$, $C_c = 1000\text{ pF}$, $V_x = +10\text{ V}$ 1% error, $T_A = 25^\circ\text{C}$	03	70.0		kHz
Nonlinearity (x)	NLx	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-0.6	0.6	%FS
Nonlinearity (y)	NLy	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	03	-0.4	0.4	%FS
Wideband noise	NI(BB)	$T_A = 25^\circ\text{C}$	03		3.0	mV rms
Multiplier accuracy (-x)(-y)	MAx-y-	$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	04	-1.0	1.0	%FS
		$V_x = -10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy (-x)(+y)	MAx-y+	$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	04	-1.0	1.0	%FS
		$V_x = -10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy (+x)(-y)	MAx+y-	$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $T_A = 25^\circ\text{C}$	04	-1.0	1.0	%FS
		$V_x = +10\text{ V}$, $V_y = -10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy (+x)(+y)	MAx+y+	$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $T_A = 25^\circ\text{C}$	04	-1.0	1.0	%FS
		$V_x = +10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-4.0	4.0	
Multiplier accuracy drift	MAxy/ ΔT	$V_x = \pm 10\text{ V}$, $V_y = \pm 10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-0.04	0.04	%FS/ $^\circ\text{C}$
Output offset voltage	V_{OIO}	$V_x = V_y = V_z = 0$, $T_A = 25^\circ\text{C}$	04	-30.0	30.0	mV
		$V_x = V_y = V_z = 0$, $T_A = -55^\circ\text{C}$		-100.0	100.0	
		$V_x = V_y = V_z = 0$, $T_A = 125^\circ\text{C}$		-100.0	100.0	
Output offset voltage drift	$V_{OIO}/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	04	-1.0	1.0	mV/ $^\circ\text{C}$

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Offset voltage (x)	$V_{IO}(x)$	$T_A = 25^\circ\text{C}$	04	-40.0	40.0	mV
		$T_A = -55^\circ\text{C}$		-90.0	90.0	
		$T_A = 125^\circ\text{C}$		-90.0	90.0	
Output offset voltage drift (x)	$V_{OIO}(x)/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	04	-800.0	800.0	$\mu\text{V}/^\circ\text{C}$
Offset voltage (y)	$V_{IO}(y)$	$T_A = 25^\circ\text{C}$	04	-50.0	50.0	mV
		$T_A = -55^\circ\text{C}$		-100.0	100.0	
		$T_A = 125^\circ\text{C}$		-100.0	100.0	
Offset voltage drift (y)	$V_{IO}(y)/\Delta T$	ΔT_A from -55°C to 25°C , ΔT_A from 25°C to 125°C	04	-800.0	800.0	$\mu\text{V}/^\circ\text{C}$
Input bias current (z)	$I_{IB}(z)$	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	----	6.0	μA
Input bias current (+)	$+I_{IB}$	$T_A = -55^\circ\text{C}$	04	-6.0	6.0	μA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.5	2.5	
Input bias current (-)	$-I_{IB}$	$T_A = -55^\circ\text{C}$	04	-6.0	6.0	μA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-2.5	2.5	
Input offset current	$-I_{IO}$	$T_A = -55^\circ\text{C}$	04	-400.0	400.0	nA
		$25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$		-200.0	200.0	
Output short circuit current (+)	$I_{OS}(+)$	$R_L = 0$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	04	-30.0		mA
		$R_L = 0$, $T_A = 125^\circ\text{C}$		-30.0		
Output short circuit current (-)	$I_{OS}(-)$	$R_L = 0$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	04		30.0	mA
		$R_L = 0$, $T_A = 125^\circ\text{C}$			30.0	
Supply current (+)	I_{CC}	$R_L = \infty$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	04		6.0	mA
		$R_L = \infty$, $T_A = 125^\circ\text{C}$			8.0	
Supply current (-)	I_{EE}	$R_L = \infty$, $-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$	04	-6.0		mA
		$R_L = \infty$, $T_A = 125^\circ\text{C}$		-8.0		
Common mode rejection ratio (x)	CMRR(x)	$-6\text{ V} \leq V_x \leq +10\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	50.0		dB
Common mode rejection ratio (y)	CMRR(y)	$-6\text{ V} \leq V_y \leq +10\text{ V}$, $V_x = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	50.0		dB

TABLE I. Electrical performance characteristics – Continued.

Test	Symbol	Conditions $V_S = \pm 15\text{ V}$, $R_L = 2\text{ k}\Omega$, Paragraph 3.5 and figure 2 unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Output voltage swing	V_{OP}	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	10.0	-10.0	V
Power supply rejection ratio (-)	PSRR1	$\pm 13.5\text{ V} \leq V_S \leq \pm 15\text{ V}$, $V_y = +10\text{ V}$, $V_x = +5\text{ V}$, $25^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-50.0	50.0	mV/V
		$\pm 13.5\text{ V} \leq V_S \leq \pm 15\text{ V}$, $V_y = +10\text{ V}$, $V_x = +5\text{ V}$, $T_A = -55^\circ\text{C}$		-100.0	100.0	
Power supply rejection ratio (+)	PSRR2	$\pm 15\text{ V} \leq V_S \leq \pm 18\text{ V}$, $V_x = +5\text{ V}$, $V_y = +10\text{ V}$, $-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-40.0	40.0	mV/V
Settling time (+)	$t_s(+)$	See figure 3, $T_A = 25^\circ\text{C}$	04		2.5	μs
Settling time (-)	$t_s(-)$	See figure 3, $T_A = 25^\circ\text{C}$	04		2.5	μs
Slew rate (+)	SR(+)	$T_A = 125^\circ\text{C}$	04	12		V/ μs
		$-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$		18		
Slew rate (-)	SR(-)	$T_A = 125^\circ\text{C}$	04	12		V/ μs
		$-55^\circ\text{C} \leq T_A \leq 25^\circ\text{C}$		18		
Feedthrough (x)	FTx	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-50.0	50.0	mV
Feedthrough (y)	FTy	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-40.0	40.0	mV
Small signal amplitude error (x)	AEx	$V_x = 2\text{ V(p-p)}$, $C_c = 1000\text{ pF}$, $V_y = +10\text{ V}$ 1% error, $T_A = 25^\circ\text{C}$	04	70.0		kHz
Small signal amplitude error (y)	AEy	$V_y = 2\text{ V(p-p)}$, $C_c = 1000\text{ pF}$, $V_x = +10\text{ V}$ 1% error, $T_A = 25^\circ\text{C}$	04	70.0		kHz
Nonlinearity (x)	NLx	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-0.8	0.8	%FS
Nonlinearity (y)	NLy	$-55^\circ\text{C} \leq T_A \leq 125^\circ\text{C}$	04	-1.0	1.0	%FS
Wideband noise	NI(BB)	$T_A = 25^\circ\text{C}$	04		3.0	mV rms

4. VERIFICATION.

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as function as described herein.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38535, and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

- a. The burn-in test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.
- b. Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.
- c. Additional screening for space level product shall be as specified in MIL-PRF-38535.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.

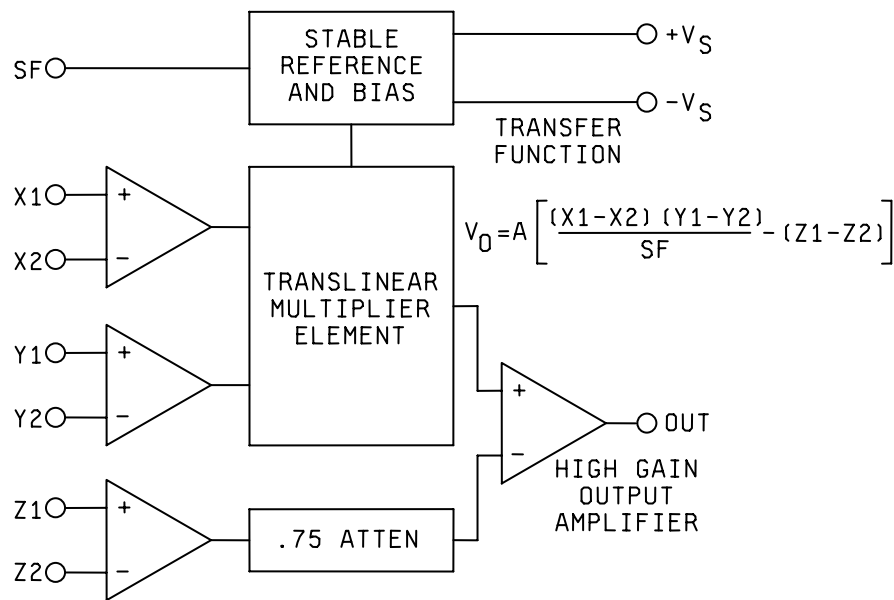
4.4 Technology Conformance inspection (TCI). Technology conformance inspection shall be in accordance with MIL-PRF-38535 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

TABLE II. Electrical test requirements.

MIL-PRF-38535 test requirements	Subgroups (see table III)	
	Class S devices	Class B devices
Interim electrical parameters	1	1
Final electrical test parameters	1*, 2, 3	1*, 2, 3
Group A test requirements	1,2,3,4,5,6, 7,9	1,2,3,4,5,6,7,9
Group B electrical test parameters when using the method 5005 QCI option	1,2,3 and table IV delta limits	N/A
Group C end-point electrical parameters	1,2,3 and table IV delta limits	1 and table IV delta limits
Additional electrical subgroups for group C periodic inspections	N/A	----
Group D end-point electrical parameters	1,2,3	1

* PDA applies to subgroup 1.

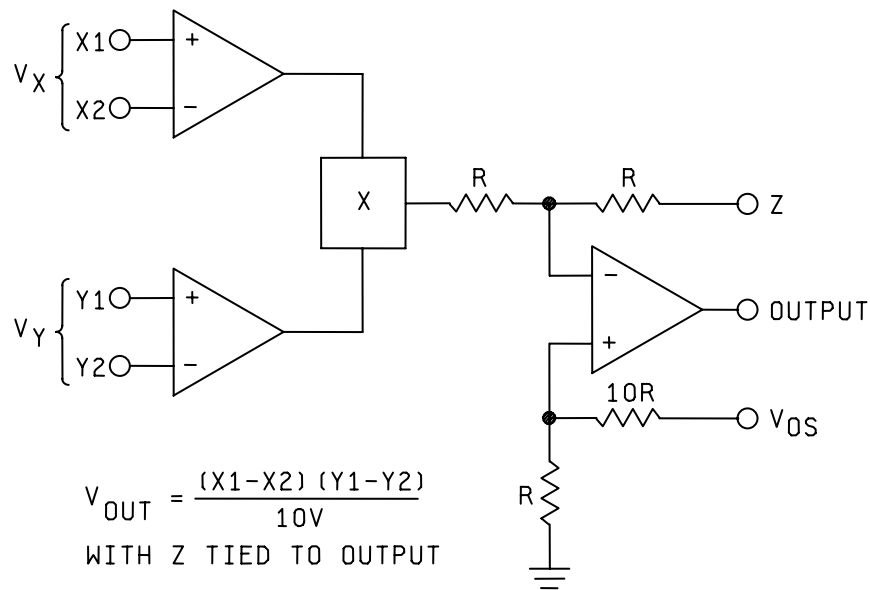
Device types 01 and 02



Device type	01 and 02	
Case outline	I	C
Terminal number	Terminal symbol	
1	X2	X1
2	SF	X2
3	Y1	NC
4	Y2	SF
5	-Vs	NC
6	Z2	Y1
7	Z1	Y2
8	OUT	-Vs
9	+V	NC
10	X1	Z2
11	----	Z1
12	----	OUT
13	----	NC
14	----	+Vs

Figure 1. Functional block diagram and terminal connections.

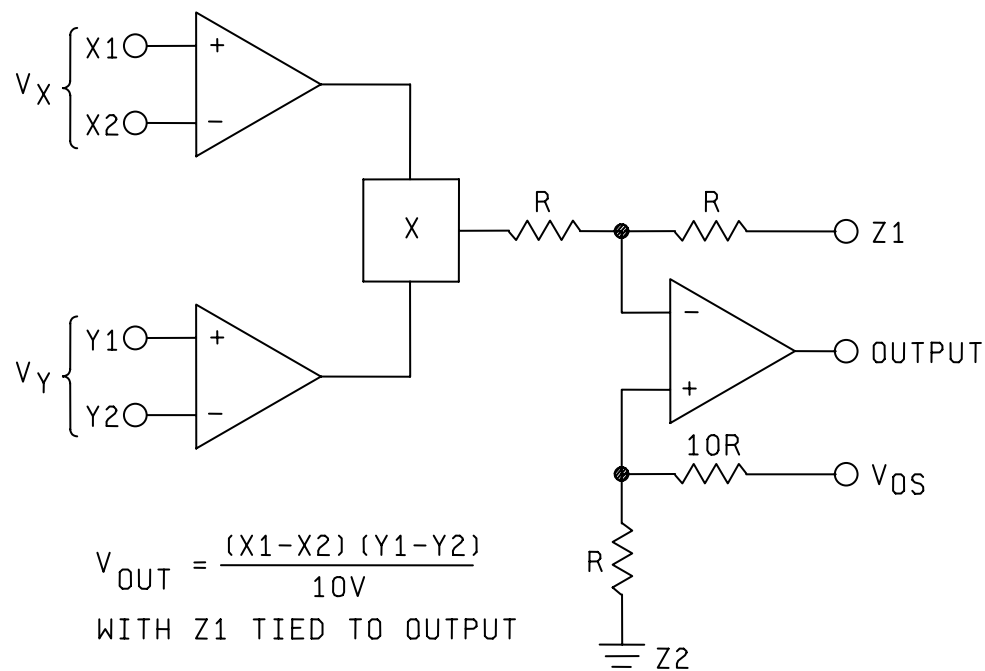
Device type 03



Device type	03	
Case outline	I	C
Terminal number	Terminal symbol	
1	Y1	Z
2	+V _s	OUT
3	Z	-V _s
4	OUT	NC
5	-V _s	NC
6	X1	NC
7	X2	X1
8	GND	NC
9	V _{0S}	X2
10	Y2	GND
11	----	V _{0S}
12	----	Y2
13	----	Y1
14	----	+V _s

Figure 1. Functional block diagram and terminal connections – Continued.

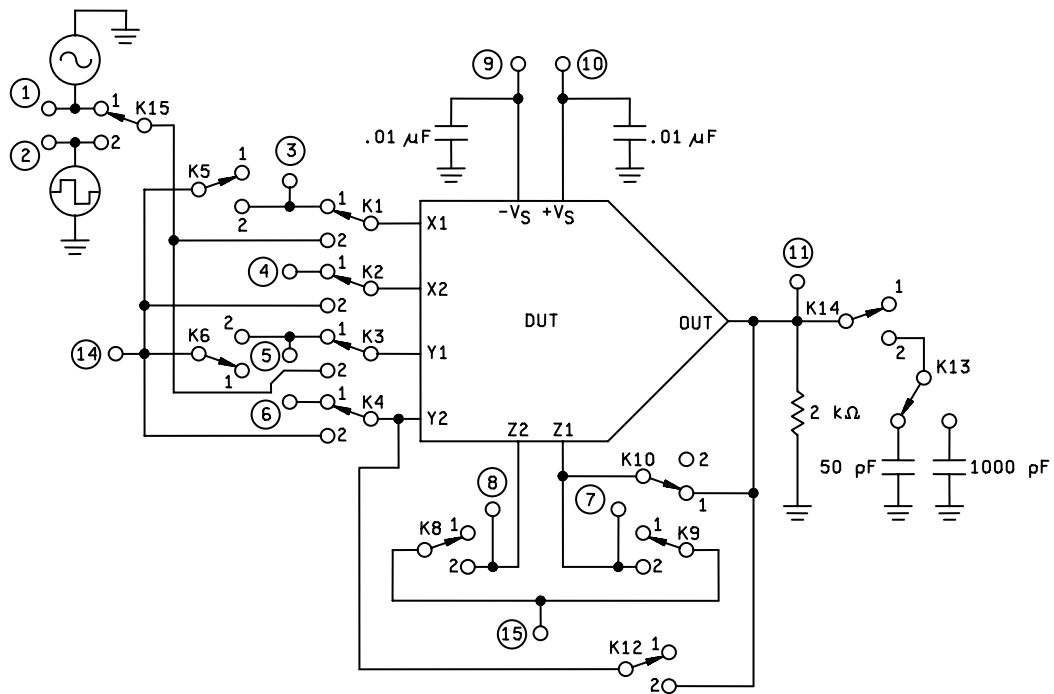
Device type 04



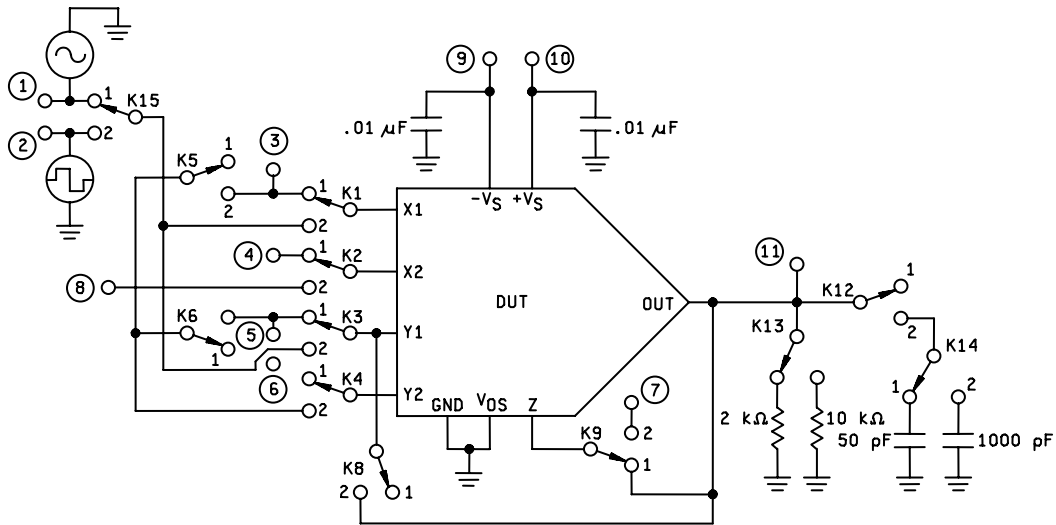
Device type	04
Case outline	I
Terminal number	Terminal symbol
1	Y1
2	+V _S
3	Z ₁
4	OUT
5	-V _S
6	X1
7	X2
8	Z ₂
9	V _{0S}
10	Y2

Figure 1. Functional block diagram and terminal connections – Continued.

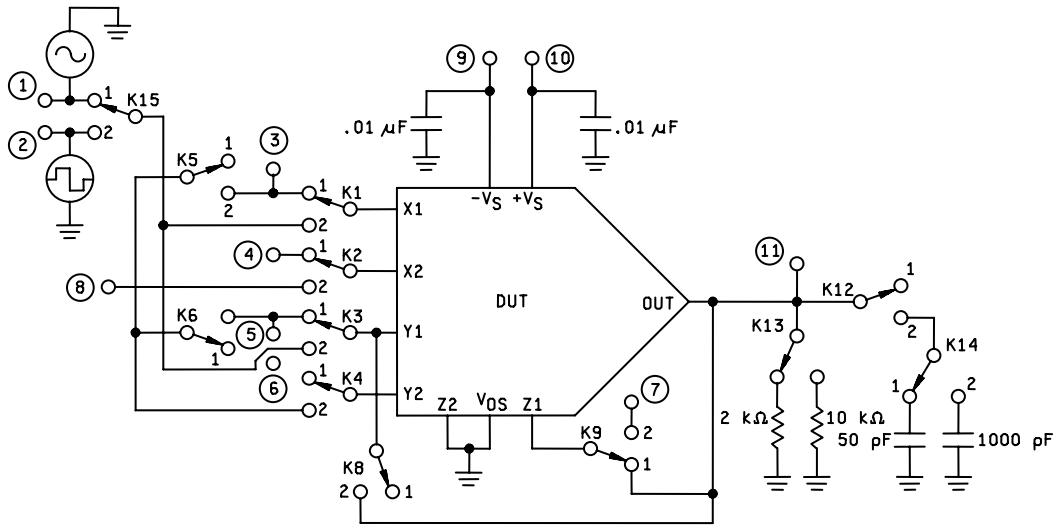
Device types 01 and 02

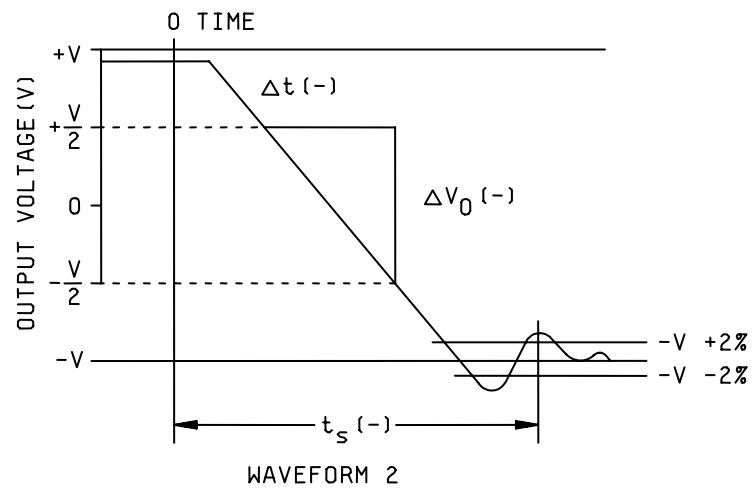
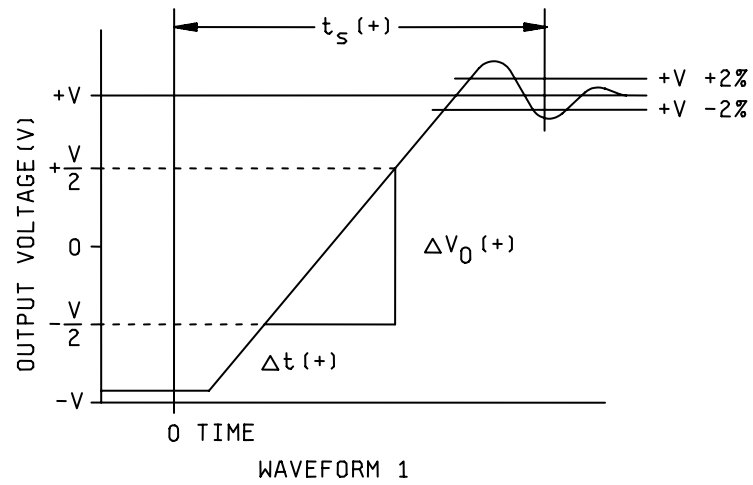
NOTE: All resistor values $\pm 1.0\%$.FIGURE 2. Static and dynamic test circuit.

Device type 03

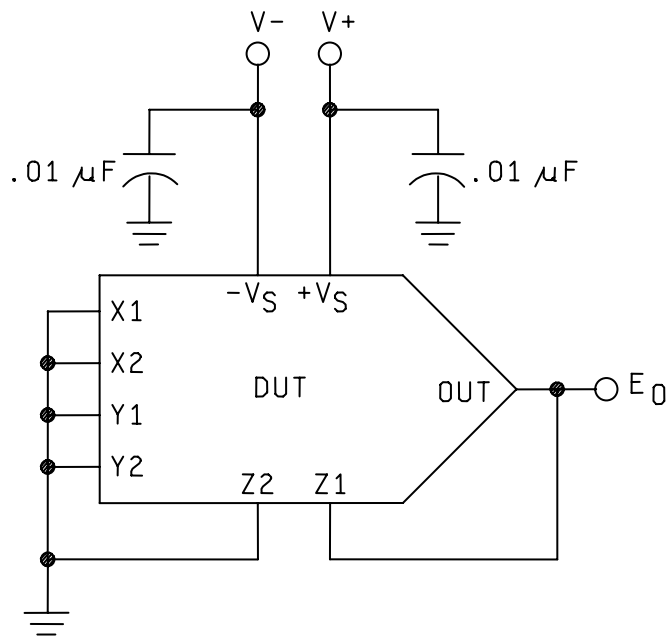
NOTE: All resistor values $\pm 1.0\%$.FIGURE 2. Static and dynamic test circuit – Continued.

Device type 04

NOTE: All resistor values $\pm 1.0\%$ FIGURE 2. Static and dynamic test circuit – Continued.

FIGURE 3. Transient response waveforms.

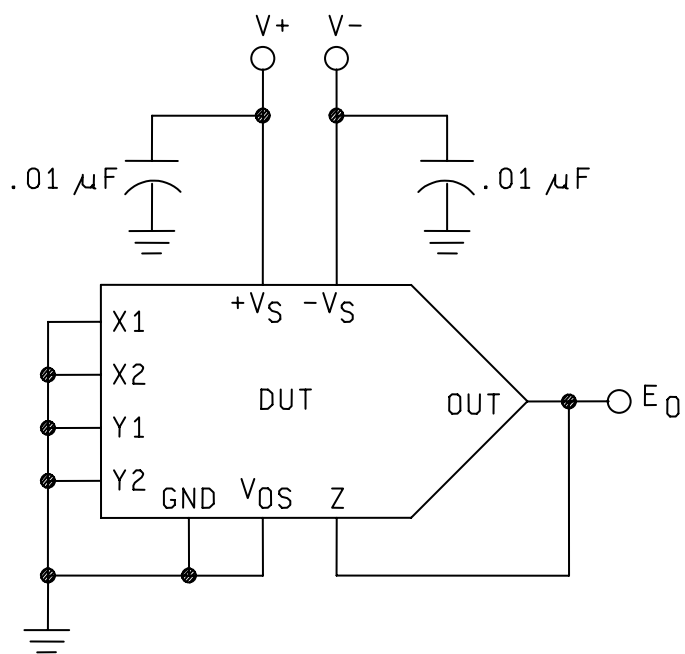
Device types 01 and 02



NOTE: E₀ is measured using a rms voltmeter with a bandwidth of 10 Hz to 100 kHz.

FIGURE 4. Noise test circuit.

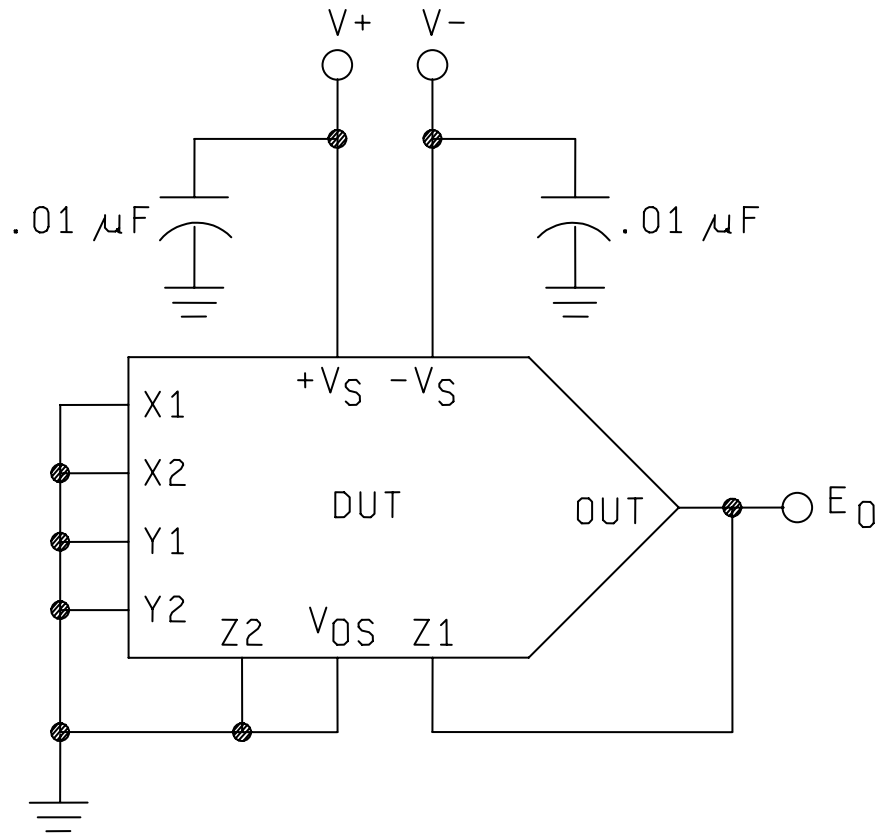
Device type 03



NOTE: E_0 is measured using a rms voltmeter with a bandwidth of 10 Hz to 100 kHz.

FIGURE 4. Noise test circuit – Continued.

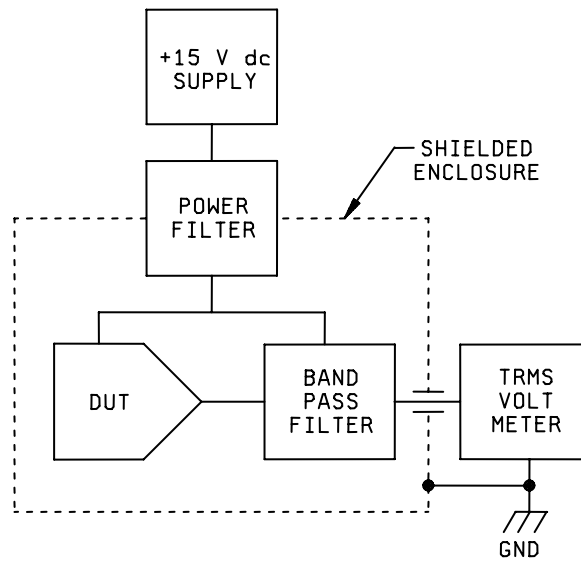
Device type 04



NOTE: E_0 is measured using a rms voltmeter with a bandwidth of 10 Hz to 100 kHz.

FIGURE 4. Noise test circuit – Continued.

Device types 01, 02, 03, and 04



NOTES:

1. Bandpass filter:
Passband gain = $40 \text{ dB} \pm 0.5 \text{ dB}$.
Fc low = $10 \text{ Hz} \pm 1 \text{ Hz}$.
Fc high = $100 \text{ kHz} \pm 10 \text{ kHz}$.
Attenuation slope = 12 dB/Oct .
2. $V_{\text{NOISE}} = \text{Reading}/100$
3. Voltmeter: HP3400A or equivalent.
4. $\pm 15 \text{ V}$ dc power supply HP6235A or equivalent.

FIGURE 4. Noise measurement block diagram – Continued.

TABLE III. Group A inspection for device types 01 and 02.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit	
																		Device 01		Device 02			
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	Min	Max		
1 T _A = 25°C V V V V V V +I +I -I -I -I I I	MAx-y-	1	----	----	-10 V	0 V	-10 V	0 V	----	0 V	-15 V	+15 V		11	E1	V	MAx-y- = (E1-10)/10 x 100	-0.5	0.5	-1.0	1.0	%FS	
	MAx-y+	2	----	----	..	..	+10 V	..	----	..	..	..		..	E2	..	MAx-y+ = (E2+10)/10 x 100	..	..	..	..	..	
	MAx+y-	3	----	----	+10 V	..	-10 V	..	----	..	..	..		..	E3	..	MAx+y- = (E3+10)/10 x 100	..	..	..	..	..	
	MAx+y+	4	----	----	..	..	+10 V	..	----	..	..	..		..	E4	..	MAx+y+ = (E4-10)/10 x 100	..	..	..	..	..	
	IO	5	----	----	0 V	..	0 V	..	----	..	..	..		..	E5	mV	V _{IO} = E5	-15.0	15.0	-30.0	30.0	mV	
	IO(X)	6	----	----	..	..	-10 V	..	----	..	..	..		..	E6	..	I _{IO(X)} = (E6-E7)/2	-10.0	10.0	-20.0	20.0	..	
	IO(X)	7	----	----	..	..	+10 V	..	----	..	..	..		..	E7	..							
	IO(Y)	8	----	----	-10 V	..	0 V	..	----	..	..	..		..	E8	..	V _{IO(Y)} = (E8-E9)/2	..	..	..	..	..	
	IO(Y)	9	----	----	+10 V	..	..	..	..	----	..	..		..	E9	..						..	
	IO(Z)	10	----	----	+1 V	..	..	----	0 V	..	..	..	K10, K12	..	E10	..	V _{IO(Z)} = (E10)/10	-15.0	15.0	-30.0	30.0	..	
	IB(X)	11	----	----	----	..	..	0 V	..	..	..	..	K5	14	I1	μA			2.0	-2.0	2.0	μA	
	IB(Y)	12	----	----	0 V	..	----	..	..	..	..	..	K6	..	I2	..		..	..	..	..	..	
	IB(Z)	13	----	----	..	..	0 V	..	----	..	..	..	K9, K10, K12	15	I3	..		..	..	..	..	..	
	IB(X)	14	----	----	..	----	..	..	0 V	..	..	..	K2	14	I4	..		..	..	..	..	..	
	IB(Y)	15	----	----	..	0 V	..	----	..	..	..	..	K4	..	I5	..		..	..	..	..	..	
	IB(Z)	16	----	----	..	..	..	0 V	..	----	..	..	K8	15	I6	..		..	..	..	..	..	
	IO(X)	17	----	----	..	..	..	..	0 V	..	----	..	..	----	----	----		I _{IO(X)} = I1-I4	-250.0	250.0	-250.0	250.0	nA
	IO(Y)	18	----	----	..	..	..	..	..	----	..	..	----	----	----		I _{IO(Y)} = I2-I5	..	..	..	..	..	

TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Device 01		Device 02		
																		Min	Max	Min	Max	
1 T _A = 25°C	I _{IO} (z)	19	----	----	0 V	0 V	0 V	0 V	0 V	0 V	-15 V	+15 V		---	---	---	I _{IO} (z) = I3-I6	-250.0	250.0	-250.0	250.0	nA
	OS(+)	20	----	----	+10 V	¹³	+10 V	¹³	---	¹³	¹³	¹³		11	I7	mA	I _{OS} (+) = I7	-40.0		-40.0		mA
	OS(-)	21	----	----	¹³	¹³	-10 V	¹³	---	¹³	¹³	¹³		¹³	I8	¹³	I _{OS} (-) = I8		50.0		50.0	¹³
	CC	22	----	----	0 V	¹³	0 V	¹³	---	¹³	¹³	¹³		10	I9	¹³	I _{CC} = I9		6.5		6.5	¹³
	EE	23	----	----	¹³	¹³	¹³	¹³	---	¹³	¹³	¹³		9	I10	¹³	I _{EE} = I10	-6.5		-6.5		¹³
	CMRR(x)	24	----	----	-10 V	-10 V	+10 V	¹³	---	¹³	¹³	¹³		11	E11	mV	CMRR(x) = 20 LOG (10/ΔE _x)	70.0		60.0		dB
	CMRR(x)	25	----	----	0 V	0 V	¹³	¹³	---	¹³	¹³	¹³		¹³	E12	¹³						
	CMRR(x)	26	----	----	+10 V	+10 V	¹³	¹³	---	¹³	¹³	¹³		¹³	E13	¹³						
	CMRR(y)	27	----	----	¹³	0 V	-10 V	-10 V	---	¹³	¹³	¹³		¹³	E14	¹³	CMRR(y) = 20 LOG (10/ΔE _y)	¹³		¹³		¹³
	CMRR(y)	28	----	----	¹³	¹³	0 V	0 V	---	¹³	¹³	¹³		¹³	E15	¹³						
V V	CMRR(y)	29	----	----	¹³	¹³	+10 V	+10 V	---	¹³	¹³	¹³		¹³	E16	¹³						
	CMRR(z)	30	----	----	¹³	¹³	0 V	---	-10 V	-10 V	¹³	¹³	K10, K12	¹³	E17	¹³	CMRR(z) = 20 LOG (10/ΔE _z)	¹³		¹³		¹³
	CMRR(z)	31	----	----	¹³	¹³	¹³	---	0 V	0 V	¹³	¹³	¹³	¹³	E18	¹³						
	CMRR(z)	32	----	----	¹³	¹³	¹³	---	+10 V	+10 V	¹³	¹³	¹³	¹³	E19	¹³						
	OP	33	----	----	+11 V	¹³	+11 V	0 V	---	0 V	¹³	¹³		¹³	E20	V	V _{OP} = E20	+11.0		+11.0		V
	OP	34	----	----	¹³	¹³	-11 V	¹³	---	¹³	¹³	¹³		¹³	E21	¹³	V _{OP} = E21		-11.0		-11.0	¹³
	PSRR1	35	----	----	+5 V	¹³	+10 V	¹³	---	¹³	-13.5 V	+13.5 V		¹³	E22	¹³	PSRR1 = (E22-E23)/3	-10.0	10.0	-10.0	10.0	mV/V
	PSRR1	36	----	----	¹³	¹³	¹³	¹³	---	¹³	-15 V	+15 V		¹³	E23	¹³						
	PSRR2	37	----	----	¹³	¹³	¹³	¹³	---	¹³	¹³	¹³		¹³	E24	¹³	PSRR2 = (E24-E25)/6	-4.0	4.0	-4.0	4.0	¹³
	PSRR2	38	----	----	¹³	¹³	¹³	¹³	---	¹³	-18 V	+18 V		¹³	E25	¹³						
FT(x)	39	----	----	-10 V	¹³	0 V	¹³	---	¹³	-15 V	+15 V		¹³	E26	mV	FT(x) = ((E26+E27)/2) – E5	-35.0	35.0	-60.0	60.0	mV	
FT(x)	40	----	----	+10 V	¹³	¹³	¹³	---	¹³	¹³	¹³			E27	¹³							

TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Device 01		Device 02		
																		Min	Max	Min	Max	
1 T _A = 25°C	FT(y)	41	----	----	0 V	0 V	-10 V	0 V	----	0 V	-15 V	+15 V		11	E28	mV	FT(y) = ((E28+E29))/2 – E5	-12.0	12.0	-24.0	24.0	mV
	FT(y)	42	----	----	"	"	+10 V	"	----	"	"	"		"	E29	"						
	+NLx	43	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLx = (((E4+E2)/2 – E29)/2)	-0.3	0.3	-0.5	0.5	%FS
	-NLx	44	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLx = (((E3+E1)/2 – E28)/2)	"	"	"	"	"
	+NLy	45	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLy = (((E4+E3)/2 – E27)/2)	-0.15	0.15	-0.2	0.2	"
	-NLy	46	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLy = (((E1+E2)/2 – E26)/2)	"	"	"	"	"
2 T _A = 125°C	MAx-y-	47	----	----	-10 V	0 V	-10 V	0 V	----	0 V	-15 V	+15 V		11	E30	V	MAx-y- = (E30-10)/10 x 100	-1.0	1.0	-2.0	2.0	"
	MAx-y+	48	----	----	"	"	+10 V	"	----	"	"	"		"	E31	"	MAx-y+ = (E31+10)/10 x 100	"	"	"	"	"
	MAx+y-	49	----	----	+10 V	"	-10 V	"	----	"	"	"		"	E32	"	MAx+y- = (E32+10)/10 x 100	"	"	"	"	"
	MAx+y+	50	----	----	"	"	+10 V	"	----	"	"	"		"	E33	"	MAx+y+ = (E33-10)/10 x 100	"	"	"	"	"
	MAxy/ΔT	51	----	----	"	"	"	"	----	"	"	"		----	----	----	MAxy/ΔT=((MAxy(125°C)- MAxy(25°C))/100	-0.01	0.01	-0.02	0.02	%FS/ΔT
	$\frac{O_{IO}}{\Delta T}$	52	----	----	0 V	"	0 V	"	----	"	"	"		11	E34	mV	V _{OIO} = E34	-45.0	45.0	-80.0	80.0	mV
	$\frac{O_{IO}}{\Delta T}$	53	----	----	"	"	"	"	----	"	"	"		----	----	----	V _{OIO} /ΔT = (E34-E5)/100	-300.0	300.0	-500.0	500.0	μV/°C
	V _{IO} (x)	54	----	----	"	"	-10 V	"	----	"	"	"		11	E35	mV	V _{IO} (x) = (E35-E36)/2	-25.0	25.0	-40.0	40.0	mV
	V _{IO} (x)	55	----	----	"	"	+10 V	"	----	"	"	"		"	E36	"						
	V _{IO} (x)/ΔT	56	----	----	"	"	"	"	----	"	"	"		----	----	----	V _{IO} (x)/ΔT=(V _{IO} (x)@125°C- V _{IO} (x)@25°C)/100	-150.0	150.0	-200.0	200.0	μV/°C
V _{IO} (y)	57	----	----	-10 V	"	0 V	"	----	"	"	"		11	E37	mV	V _{IO} (y) = (E37-E38)/2	-25.0	25.0	-40.0	40.0	mV	
V _{IO} (y)	58	----	----	+10 V	"	"	"	----	"	"	"		"	E38	"							
V _{IO} (y)/ΔT	59	----	----	"	"	"	"	----	"	"	"		----	----	----	V _{IO} (y)/ΔT=(V _{IO} (y)@125°C- V _{IO} (y)@25°C)/100	-150.0	150.0	-200.0	200.0	μV/°C	
V																						
V																						

TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Device 01		Device 02		
																		Min	Max	Min	Max	
2 T _A = 125°C	V _{IO} (Z)	60	----	----	+1 V	0 V	0 V	----	0 V	0 V	-15 V	+15 V	K10, K12	11	E39	mV	V _{IO} (Z) = (E39)/10	-45.0	45.0	-80.0	80.0	mV
	V _{IO} (Z)/ΔT	61	----	----	"	"	"	----	"	"	"	"		----	----	----	V _{IO} (Z)/ΔT=(V _{IO} (Z)@125°C- V _{IO} (Z)@25°C)/100	-300.0	300.0	-500.0	500.0	μV/°C
	I _B (X)	62	----	----	----	"	"	0 V	"	"	"	"	K5	14	I11	μA			2.0	-2.0	2.0	μA
	I _B (Y)	63	----	----	0 V	"	----	"	"	"	"	"	K6	"	I12	"		"	"	"	"	"
	I _B (Z)	64	----	----	"	"	0 V	"	----	"	"	"	K9, K10, K12	15	I13	"		"	"	"	"	"
	I _B (X)	65	----	----	"	----	"	"	0 V	"	"	"	K2	14	I14	"		"	"	"	"	"
	I _B (Y)	66	----	----	"	0 V	"	----	"	"	"	"	K4	"	I15	"		"	"	"	"	"
	I _B (Z)	67	----	----	"	"	0 V	"	----	"	"	"	K8	15	I16	"		"	"	"	"	"
	I _O (X)	68	----	----	"	"	"	"	"	0 V	"	"		----	----	----	I _O (X) = I14-I11	-250.0	250.0	-250.0	250.0	nA
	I _O (Y)	69	----	----	"	"	"	"	"	"	"	"		----	----	----	I _O (Y) = I15-I12	"	"	"	"	"
	I _O (Z)	70	----	----	0 V	"	"	"	"	"	"	"		----	----	----	I _O (Z) = I16-I13	"	"	"	"	"
	I _{OS} (+)	71	----	----	+10 V	"	+10 V	"	----	"	"	"		11	I17	mA	I _{OS} (+) = I17	-30.0		-30.0		mA
	I _{OS} (-)	72	----	----	"	"	-10 V	"	----	"	"	"		"	I18	"	I _{OS} (-) = I18		38.0		38.0	"
	I _{CC}	73	----	----	0 V	"	0 V	"	----	"	"	"		10	I19	"	I _{CC} = I19		6.5		6.5	"
	I _{EE}	74	----	----	"	"	"	"	----	"	"	"		9	I20	"	I _{EE} = I20	-6.5		-6.5		"
	CMRR(X)	75	----	----	-10 V	-10 V	+10 V	"	----	"	"	"		11	E40	mV	CMRR(X) = 20 log (10/ΔE _X)	70.0		60.0		dB
	CMRR(X)	76	----	----	0 V	0 V	"	"	----	"	"	"		"	E41	"						
	CMRR(X)	77	----	----	+10 V	+10 V	"	"	----	"	"	"		"	E42	"						
	CMRR(Y)	78	----	----	"	0 V	-10 V	-10 V	----	"	"	"		"	E43	"	CMRR(X) = 20 log (10/ΔE _Y) 2.0	"		"		"
	CMRR(Y)	79	----	----	"	"	0 V	0 V	----	"	"	"		"	E44	"						
	CMRR(Y)	80	----	----	"	"	+10 V	+10 V	----	"	"	"		"	E45	"						

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TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit	
														No.	Value	Unit		Device 01		Device 02			
			1	2	3	4	5	6	7	8	9	10						Min	Max	Min	Max		
3 T _A = -55°C	MA _{xy} /ΔT	102	----	----	+10 V	0 V	+10 V	0 V	----	0 V	-15 V	+15 V		----	----	----	MA _{xy} /ΔT=((MA _{xy} (-55°C)- MA _{xy} (25°C))/80	-0.01	0.01	-0.02	0.02	%FS/ΔT	
	_{oIo}	103	----	----	0 V	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	E63	mV	V _{oIo} = E63	-39.0	39.0	-70.0	70.0	mV	
	_{oIo} ΔT	104	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	V _{oIo} /ΔT = (E63-E5)/80	-300.0	300.0	-500.0	500.0	μV/°C	
	V	_{Io} (x)	105	----	----	¹⁷	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	E64	mV	V _{Io} (x) = (E64-E65)/2	-22.0	22.0	-36.0	36.0	mV
		_{Io} (x)	106	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E65	¹⁷						
	V	V _{Io} (x)/ΔT	107	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	V _{Io} (x)/ΔT=(V _{Io} (x)@-55°C- V _{Io} (x)@25°C)/80	-150.0	150.0	-200.0	200.0	μV/°C
	V	_{Io} (y)	108	----	----	-10 V	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	E66	mV	V _{Io} (y) = (E66-E67)/2	-22.0	22.0	-36.0	36.0	mV
		_{Io} (y)	109	----	----	+10 V	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E67	¹⁷						
	V	V _{Io} (y)/ΔT	110	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	V _{Io} (y)/ΔT=(V _{Io} (y)@-55°C- V _{Io} (y)@25°C)/80	-150.0	150.0	-200.0	200.0	μV/°C
		_{Io} (z)	111	----	----	+1 V	¹⁷	¹⁷	----	0 V	¹⁷	¹⁷	¹⁷	K10, K12	11	E68	mV	V _{Io} (z) = (E68)/10	-39.0	39.0	-70.0	70.0	mV
	V	V _{Io} (z)/ΔT	112	----	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷		----	----	----	V _{Io} (z)/ΔT=(V _{Io} (z)@-55°C- V _{Io} (z)@25°C)/80	-300.0	300.0	-500.0	500.0	μV/°C
	V	_{IB} (x)	113	----	----	----	¹⁷	¹⁷	0 V	¹⁷	¹⁷	¹⁷	¹⁷	K5	14	I21	μA			2.5	-2.5	2.5	μA
		_{IB} (y)	114	----	----	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	K6	¹⁷	I22	¹⁷		¹⁷	¹⁷	¹⁷	¹⁷	μA
	+I	_{IB} (z)	115	----	----	¹⁷	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷	K9, K10, K12	15	I23	¹⁷		¹⁷	¹⁷	¹⁷	¹⁷	μA
		_{IB} (x)	116	----	----	¹⁷	----	¹⁷	¹⁷	0 V	¹⁷	¹⁷	¹⁷	K2	14	I24	¹⁷		¹⁷	¹⁷	¹⁷	¹⁷	μA
	+I	_{IB} (y)	117	----	----	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	K4	¹⁷	I25	¹⁷		¹⁷	¹⁷	¹⁷	¹⁷	μA
		_{IB} (z)	118	----	----	¹⁷	¹⁷	0 V	¹⁷	----	¹⁷	----	¹⁷	K8	15	I26	¹⁷		¹⁷	¹⁷	¹⁷	¹⁷	μA
	-I	_{Io} (x)	119	----	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	0 V	¹⁷	¹⁷		----	----	----	I _{Io} (x) = I24-I21	-300.0	300.0	-300.0	300.0	nA
	-I	_{Io} (y)	120	----	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷		----	----	----	I _{Io} (y) = I25-I22	¹⁷	¹⁷	¹⁷	¹⁷	μA
		_{Io} (z)	121	----	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷		----	----	----	I _{Io} (z) = I26-I23	¹⁷	¹⁷	¹⁷	¹⁷	μA

TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Device 01		Device 02		
																		Min	Max	Min	Max	
3 T _A = -55°C	I _{OS} (+)	122	----	----	+10 V	0 V	+10 V	0 V	---	0 V	-15 V	+15 V		11	I27	mA	I _{OS} (+) = I27	-40.0		-40.0		mA
	I _{OS} (-)	123	----	----	"	"	-10 V	"	---	"	"	"	"	"	I28	"	I _{OS} (-) = I28		50.0		50.0	"
	CC	124	----	----	0 V		0 V	"	---	"	"	"		10	I29	"	I _{CC} = I29		6.5		6.5	"
	EE	125	----	----	"	"	"	"	---	"	"	"		9	I30	"	I _{EE} = I30	-6.5		-6.5		"
	CMRR(x)	126	----	----	-10 V	-10 V	+10 V	"	---	"	"	"		11	E69	mV	CMRR(x) = 20 LOG (10/ΔE _x)	65.0		54.0		dB
	CMRR(x)	127	----	----	0 V	0 V	"	"	---	"	"	"		"	E70	"						
	CMRR(x)	128	----	----	+10 V	+10 V	"	"	---	"	"	"		"	E71	"						
	CMRR(y)	129	----	----	"	0 V	-10 V	-10 V	---	"	"	"		"	E72	"	CMRR(y) = 20 LOG (10/ΔE _y)	"		"		"
	CMRR(y)	130	----	----	"	"	0 V	0 V	---	"	"	"		"	E73	"						
	CMRR(y)	131	----	----	"	"	+10 V	+10 V	---	"	"	"		"	E74	"						
I I	CMRR(z)	132	----	----	"	"	0 V	---	-10 V	-10 V	"	"	K10, K12	"	E75	"	CMRR(z) = 20 LOG (10/ΔE _z)	"		"		"
	CMRR(z)	133	----	----	"	"	"	---	0 V	0 V	"	"	"	"	E76	"						
	CMRR(z)	134	----	----	"	"	"	---	+10 V	+10 V	"	"	"	"	E77	"						
	OP	135	----	----	+11 V	"	+11 V	0 V	---	0 V	"	"		"	E78	V	V _{OP} = E78	+11.0		+11.0		V
	OP	136	----	----	"	"	-11 V	"	---	"	"	"		"	E79	"	V _{OP} = E79		-11.0		-11.0	"
	PSRR1	137	----	----	+5 V	"	+10 V	"	---	"	-13.5 V	+13.5 V		"	E80	"	PSRR1 = (E80-E81)/3	-10.0	10.0	-10.0	10.0	mV/V
	PSRR1	138	----	----	"	"	"	"	---	"	-15 V	+15 V		"	E81	"						
	PSRR2	139	----	----	"	"	"	"	---	"	"	"		"	E82	"	PSRR2 = (E82-E83)/6	-4.0	4.0	-4.0	4.0	"
	PSRR2	140	----	----	"	"	"	"	---	"	-18 V	+18 V		"	E83	"						
	FT(x)	141	----	----	-10 V	"	0 V	"	---	"	-15 V	+15 V		"	E84	mV	FT(x) = ((E84+E85)/2) – E63	-35.0	35.0	-60.0	60.0	mV
V V	FT(x)	142	----	----	+10 V	"	"	"	---	"	"	"		"	E85	"						
	FT(y)	143	----	----	0 V	"	-10 V	"	---	"	"	"		"	E86	"	FT(x) = ((E86+E87)/2) – E63	-12.0	12.0	-24.0	24.0	"
	FT(y)	144	----	----	"	"	+10 V	"	---	"	"	"		"	E87	"						

TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit	
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Device 01		Device 02			
																		Min	Max	Min	Max		
3 T _A = -55°C	+NLx	145	----	----	----	----	----	----	----	----	----	----	----	----	----	+NLx = (((E62+E60)/2 – E87)/2)	-0.3	0.3	-0.5	0.5	%FS		
	-NLx	146	----	----	----	----	----	----	----	----	----	----	----	----	----	-NLx = (((E61+E59)/2 – E86)/2)	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷		
	+NLy	147	----	----	----	----	----	----	----	----	----	----	----	----	----	+NLy = (((E62+E61)/2 – E85)/2)	-0.15	0.15	-0.2	0.2	¹⁷		
	-NLy	148	----	----	----	----	----	----	----	----	----	----	----	----	----	-NLy = (((E59+E60)/2 – E84)/2)	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷		
4 T _A = +25°C	SR(+)	149	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	ΔV _O (+)	V	See figure 3, waveform 1 SR(+) = ΔV _O (+)/Δt(+)	18.0		18.0		V/μs	
		150	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	Δt(+)	μs							
		151	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	ΔV _O (-)	V	See figure 3, waveform 2 SR(-) = ΔV _O (-)/Δt(-)	¹⁷		¹⁷		¹⁷	
	SR(+)	152	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	Δt(-)	μs							
	SR(-)	AE(x)	153	2 V _{p-p}	----	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	K1, K13, K14	¹⁷	f1	kHz	AE(x) = f1 @(-1%) E _O	75.0		75.0		kHz
	SR(-)	AE(y)	154	¹⁷	----	+10 V	¹⁷	----	¹⁷	----	¹⁷	¹⁷	¹⁷	K3, K13, K14	¹⁷	f2	¹⁷	AE(y) = f2 @(-1%) E _O	¹⁷		¹⁷		¹⁷
5 T _A = 125°C	SR(+)	155	----	20 V _{p-p} f = 10kHz	----	0 V	+10 V	0 V	----	0 V	-15 V	+15 V	K1, K14, K15	11	ΔV _O (+)	V	See figure 3, waveform 1 SR(+) = ΔV _O (+)/Δt(+)	18.0		18.0		V/μs	
		156	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	Δt(+)	μs							
		157	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	ΔV _O (-)	V	See figure 3, waveform 2 SR(-) = ΔV _O (-)/Δt(-)	¹⁷		¹⁷		¹⁷	
	SR(+)	158	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	Δt(-)	μs							

SR(-)

SR(-)

TABLE III. Group A inspection for device types 01 and 02 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits				Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Device 01		Device 02		
																		Min	Max	Min	Max	
6 T _A = -55°C	SR(+)	159	----	20 Vp-p f = 10kHz	----	0 V	+10 V	0 V	----	0 V	-15 V	+15 V	K1, K14, K15	11	ΔV _O (+)	V	See figure 3, waveform 1 SR(+) = ΔV _O (+)/Δt(+)	18.0		18.0		V/μs
		160	----	11	----	11	11	11	----	11	11	11	11	Δt(+)	μs				11		11	
		161	----	11	----	11	11	11	----	11	11	11	11	11	ΔV _O (-)	V	See figure 3, waveform 2 SR(-) = ΔV _O (-)/Δt(-)	11		11		11
	SR(+)	162	----	11	----	11	11	11	----	11	11	11	11	11	Δt(-)	μs						
7 T _A = +25°C	SR(-) NI(BB)	163	----	----	----	----	----	----	----	----	----	----		----	----	----	See figure 4 BW = 10 Hz to 100 kHz				1.5	mV rms
9 T _A = +25°C	SR(-) ts(+)	164	----	20 Vp-p f = 10kHz	----	0 V	+10 V	0 V	----	0 V	-15 V	+15 V	K1, K4, K15	11	ts(+)	μs	See figure 3, waveform 1	1.5	3.0		3.0	μs
	ts(-)	165	----	11	----	11	11	11	----	11	11	11	11	11	ts(-)	11	See figure 3, waveform 2		11		11	11

TABLE III. Group A inspection for device type 03.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
1 $T_A = +25^\circ\text{C}$ V V V V V I +I -I -I	MAx-y-	1	----	----	-10 V	0 V	-10 V	0 V	----	0 V	-15 V	+15 V		11	E1	V	$MAx-y- = (E1-10)/10 \times 100$ ΔT	-1.0	1.0	%FS
	MAx-y+	2	----	----	“	“	+10 V	“	----	“	“	“		“	E2	“	$MAx-y+ = (E2+10)/10 \times 100$	“	“	“
	MAx+y-	3	----	----	+10 V	“	-10 V	“	----	“	“	“		“	E3	“	$MAx+y- = (E3+10)/10 \times 100$	“	“	“
	MAx+y+	4	----	----	“	“	+10 V	“	----	“	“	“		“	E4	“	$MAx+y+ = (E4-10)/10 \times 100$	“	“	“
	OIO	5	----	----	0 V	“	“	“	----	“	“	“		“	E5	mV	$V_{OIO} = E5$	-30.0	30.0	mV
	IO(X)	6	----	----	“	“	“	“	----	“	“	“		“	E6	“	$V_{IO(X)} = (E6-E7)/2$	-50.0	50.0	“
	IO(X)	7	----	----	“	“	+10 V	“	----	“	“	“		“	E7	“	$V_{IO(Y)} = (E8-E9)/2$	“	“	“
	IO(Y)	8	----	----	-10 V	“	0 V	“	----	“	“	“		“	E8	“				
	IO(Y)	9	----	----	+10 V	“	“	“	----	“	“	“		“	E9	“				
	IB(Z)	10	----	----	+5 V	“	----	“	----	“	“	“	K8, K9	7	I1	μA	$I_{IB(Z)} = I1$	-12.0	12.0	μA
	+IB(X)	11	----	----	----	“	0 V	“	----	“	“	“	K5	8	I2	“		-2.0	2.0	“
	IB(V)	12	----	----	0 V	“	----	“	----	“	“	“	K6	“	I3	“		“	“	“
	IB(X)	13	----	----	“	----	0 V	“	----	“	“	“	K2	“	I4	“		“	“	“
	IB(Y)	14	----	----	“	“	0 V	“	----	“	“	“	K4	“	I5	“		“	“	“
	IO(X)	15	----	----	“	“	“	0 V	----	“	“	“		----	----	----	$I_{IO(X)} = I2-I4$	-200.0	200.0	nA
	IO(Y)	16	----	----	“	“	“	“	----	“	“	“		----	----	----	$I_{IO(Y)} = I3-I5$	“	“	“

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
1	$I_{OS}(+)$	17	----	----	+10 V	0 V	+10 V	0 V	---	GND	-15 V	+15 V		11	I6	mA	$I_{OS}(+) = I6$	-45.0		mA
		18	----	----	17	17	-10 V	17	---	17	17	17		17	I7	17	$I_{OS}(-) = I7$		30.0	17
	CC	19	----	----	0 V	17	0 V	17	---	17	17	17		10	I8	17	$I_{CC} = I8$		6.5	17
		20	----	----	17	17	17	17	---	17	17	17		9	I9	17	$I_{EE} = I9$	-6.5		17
	CMRR(x)	21	----	----	-10 V	-10 V	+10 V	17	---	17	17	17		11	E10	mV	$CMRR(x) = 20 \log (10/\Delta E_X)$	50.0		dB
		22	----	----	0 V	0 V	17	17	---	17	17	17		17	E11	17				
	CMRR(x)	23	----	----	+10 V	+10 V	17	17	---	17	17	17		17	E12	17				
		24	----	----	17	0 V	-10 V	-10 V	---	17	17	17		17	E13	17	$CMRR(x) = 20 \log (10/\Delta E_Y)$	17		17
	CMRR(y)	25	----	----	17	0 V	0 V	0 V	---	17	17	17		17	E14	17				
		26	----	----	17	+10 V	+10 V	17	---	17	17	17		17	E15	17				
	ERR1	27	----	----	-10 V	17	-5 V	0 V	---	17	17	17		17	E16	V		4.9	5.1	V
		28	----	----	+10 V	17	17	17	---	17	17	17		17	E17	17		-5.1	-4.9	17
	ERR3	29	----	----	-10 V	17	+5 V	17	---	17	17	17		17	E18	17		17	17	17
		30	----	----	+10 V	17	17	17	---	17	17	17		17	E19	17		4.9	5.1	17
	ERR5	31	----	----	-5 V	17	-10 V	17	---	17	17	17		17	E20	17		17	17	17
		32	----	----	17	+10 V	17	17	---	17	17	17		17	E21	17		-5.1	-4.9	17
	ERR7	33	----	----	+5 V	17	-10 V	17	---	17	17	17		17	E22	17		17	17	17
		34	----	----	17	+10 V	17	17	---	17	17	17		17	E23	17		4.9	5.1	17
ERR6	OP	35	----	----	+11 V	17	+11 V	17	---	17	17	17		17	E24	17	$V_{OP} = E24$	+10.0		17
		36	----	----	17	-11 V	17	17	---	17	17	17		17	E25	17	$V_{OP} = E25$		-10.0	17
ERR8	PSRR1	37	----	----	+5 V	17	+10 V	17	---	17	-13.5 V	+13.5 V		17	E26	17	$PSRR1 = (E26-E27)/3$	-50.0	50.0	mV/V
		38	----	----	17	17	17	17	---	17	-15 V	+15 V		17	E27	17				

V
V

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
1 $T_A = +25^\circ\text{C}$	PSRR2	39	----	----	+5 V	0 V	+10 V	0 V	----	GND	-15 V	+15 V		11	E28	V	PSRR2 = (E28-E29)/6	-50.0	50.0	mV/V
	PSRR2	40	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	-18 V	+18 V		¹⁷	E29	¹⁷				
	FT(x)	41	----	----	-10 V	¹⁷	0 V	¹⁷	----	¹⁷	-15 V	+15 V		¹⁷	E30	mV	FT(x) = ((E30+E31)/2) – E5	-100.0	100.0	mV
	FT(x)	42	----	----	+10 V	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E31	¹⁷				
	FT(y)	43	----	----	0 V	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E32	¹⁷	FT(y) = ((E32+E33)/2) – E5	-80.0	80.0	¹⁷
	FT(y)	44	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E33	¹⁷				
	+NLx(A)	45	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLx(A) = E21-[(E2-E4)/4+(((E2+E4)/2+E33)/2)]	-0.6	0.6	%FS
	+NLx(B)	46	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLx(B) = E23+[(E2-E4)/4-(((E2+E4)/2+E33)/2)]	¹⁷	¹⁷	¹⁷
	-NLx(A)	47	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLx(A) = E20-[(E1-E3)/4+(((E1+E3)/2+E32)/2)]	¹⁷	¹⁷	¹⁷
	-NLx(B)	48	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLx(B) = E22+[(E1-E3)/4-(((E1+E3)/2+E32)/2)]	¹⁷	¹⁷	¹⁷
	+NLy(A)	49	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLy(A) = E17-[(E3-E4)/4+(((E3+E4)/2+E31)/2)]	-0.4	0.4	¹⁷
	+NLy(B)	50	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLy(B) = E19+[(E3-E4)/4-(((E3+E4)/2+E31)/2)]	¹⁷	¹⁷	¹⁷
	-NLy(A)	51	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLy(A) = E16-[(E1-E2)/4+(((E1+E2)/2+E30)/2)]	¹⁷	¹⁷	¹⁷
	-NLy(B)	52	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLy(B) = E18+[(E1-E2)/4-(((E1+E2)/2+E30)/2)]	¹⁷	¹⁷	¹⁷
	+NLx	53	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLx = (((E4+E2)/2)-E33)/2	-0.6	0.6	¹⁷
	-NLx	54	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLx = (((E3+E1)/2)-E32)/2	¹⁷	¹⁷	¹⁷
2 $T_A = +125^\circ\text{C}$	+NLy	55	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLy = (((E4+E3)/2)-E31)/2	-0.4	0.4	¹⁷
	-NLy	56	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLy = (((E1+E2)/2)-E30)/2	¹⁷	¹⁷	¹⁷
	MAx-y-	57	----	----	-10 V	0 V	-10 V	0 V	----	GND	-15 V	+15 V		11	E34	V	MAx-y- = (E34-10)/10 x 100	-4.0	4.0	¹⁷
	MAx-y+	58	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E35	¹⁷	MAx-y+ = (E35+10)/10 x 100	¹⁷	¹⁷	¹⁷
	MAx+y-	59	----	----	+10 V	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E36	¹⁷	MAx+y- = (E36+10)/10 x 100	¹⁷	¹⁷	¹⁷
	MAx+y+	60	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E37	¹⁷	MAx+y+ = (E37-10)/10 x 100	¹⁷	¹⁷	¹⁷

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
2 T _A = +125°C	MA _{xy} /ΔT	61	----	----	+10 V	0 V	+10 V	0 V	---	GND	-15 V	+15 V		----	----	----	MA _{xy} /ΔT = (MA _{xy} (125°C) – MA _{xy} (25°C))/100	-0.04	0.04	%FS
	V _{OIO}	62	----	----	0 V	¹⁷	0 V	¹⁷	---	¹⁷	¹⁷	¹⁷		11	E38	mV	V _{OIO} = E38	-230.0	230.0	mV
	OIO/ ΔT	63	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		----	----	----	V _{OIO} /ΔT = (E38-E5)/100	-2.0	2.0	mV/°C
	I _{IO} (X)	64	----	----	¹⁷	¹⁷	-10 V	¹⁷	---	¹⁷	¹⁷	¹⁷		11	E39	mV	V _{IO} (x) = (E39-E40)/2	-100.0	100.0	mV
	I _{IO} (X)	65	----	----	¹⁷	¹⁷	+10 V	¹⁷	---	¹⁷	¹⁷	¹⁷		¹⁷	E40	¹⁷				
	V _{IO} (X)/ΔT	66	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		----	----	----	V _{IO} (x)/ΔT = (V _{IO} (x)@125°C – V _{IO} (x)@25°C)/100	-800.0	800.0	μV/°C
	I _{IO} (Y)	67	----	----	-10 V	¹⁷	0 V	¹⁷	---	¹⁷	¹⁷	¹⁷		11	E41	mV	V _{IO} (y) = (E41-E42)/2	-100.0	100.0	mV
	I _{IO} (Y)	68	----	----	+10 V	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		¹⁷	E42	¹⁷				
	V _{IO} (Y)/ΔT	69	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		----	----	----	V _{IO} (y)/ΔT = (V _{IO} (y)@125°C – V _{IO} (y)@25°C)/100	-800.0	800.0	μV/°C
	I _B (Z)	70	----	----	+5 V	¹⁷	---	---	---	¹⁷	¹⁷	¹⁷	K8, K9	7	I10	μA	I _B (z) = I10	-12.0	12.0	μA
	I _B (X)	71	----	----	---	¹⁷	0 V	¹⁷	---	¹⁷	¹⁷	¹⁷		8	I11	¹⁷		-2.0	2.0	¹⁷
	I _B (Y)	72	----	----	0 V	¹⁷	---	---	---	¹⁷	¹⁷	¹⁷	K6	¹⁷	I12	¹⁷		¹⁷	¹⁷	¹⁷
	I _B (X)	73	----	----	¹⁷	---	0 V	¹⁷	---	¹⁷	¹⁷	¹⁷	K2	¹⁷	I13	¹⁷		¹⁷	¹⁷	¹⁷
	I _B (Y)	74	----	----	¹⁷	0 V	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷	K4	¹⁷	I14	¹⁷		¹⁷	¹⁷	¹⁷
	I _{IO} (X)	75	----	----	¹⁷	¹⁷	¹⁷	0 V	---	¹⁷	¹⁷	¹⁷		----	----	----	I _{IO} (x) = I11-I13	-200.0	200.0	nA
	I _{IO} (Y)	76	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		----	----	----	I _{IO} (y) = I12-I14	¹⁷	¹⁷	¹⁷
	O _S (+)	77	----	----	+10 V	¹⁷	+10 V	¹⁷	---	¹⁷	¹⁷	¹⁷		11	I15	mA	I _{OS} (+) = I15	-30.0		mA
	O _S (-)	78	----	----	¹⁷	¹⁷	-10 V	¹⁷	---	¹⁷	¹⁷	¹⁷		¹⁷	I16	¹⁷	I _{OS} (-) = I16		30.0	¹⁷
	CC	79	----	----	0 V	¹⁷	0 V	¹⁷	---	¹⁷	¹⁷	¹⁷		10	I17	¹⁷	I _{CC} = I17		6.5	¹⁷
	EE	80	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		9	I18	¹⁷	I _{EE} = I18	-6.5		¹⁷

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
2 $T_A = +125^\circ\text{C}$	CMRR(x)	81	----	----	-10 V	-10 V	+10 V	0 V	---	GND	-15 V	+15 V		11	E43	mV	$\text{CMRR}(x) = 20 \log (10/\Delta E_x)$	50.0		dB
	CMRR(x)	82	----	----	0 V	0 V	---	---	---	---	---	---		---	E44	---				
	CMRR(x)	83	----	----	+10 V	+10 V	---	---	---	---	---	---		---	E45	---				
	CMRR(y)	84	----	----	---	0 V	-10 V	-10 V	---	---	---	---		---	E46	---	$\text{CMRR}(y) = 20 \log (10/\Delta E_y)$	---		---
	CMRR(y)	85	----	----	---	---	0 V	0 V	---	---	---	---		---	E47	---				
	CMRR(y)	86	----	----	---	---	+10 V	+10 V	---	---	---	---		---	E48	---				
	ERR1	87	----	----	-10 V	---	-5 V	0 V	---	---	---	---		---	E49	V		4.6	5.4	V
	ERR2	88	----	----	+10 V	---	---	---	---	---	---	---		---	E50	---		-5.4	-4.6	---
	ERR3	89	----	----	-10 V	---	+5 V	---	---	---	---	---		---	E51	---		---	---	---
		90	----	----	+10 V	---	---	---	---	---	---	---		---	E52	---		4.6	5.4	---
	ERR5	91	----	----	-5 V	---	-10 V	---	---	---	---	---		---	E53	---		---	---	---
		92	----	----	---	---	+10 V	---	---	---	---	---		---	E54	---		-5.4	-4.6	---
	ERR7	93	----	----	+5 V	---	-10 V	---	---	---	---	---		---	E55	---		---	---	---
		94	----	----	---	---	+10 V	---	---	---	---	---		---	E56	---		4.6	5.4	---
ERR4 ERR6 ERR8 V V	op	95	----	----	+11 V	---	+11 V	---	---	---	---	---		---	E57	---	$V_{op} = E57$	+10.0		---
	op	96	----	----	---	---	-11 V	---	---	---	---	---		---	E58	---	$V_{op} = E58$		-10.0	---
	PSRR1	97	----	----	+5 V	---	+10 V	---	---	---	-13.5 V	+13.5 V		---	E59	---	$\text{PSRR1} = (E59-E60)/1.5$	-50.0	50.0	mV/V
	PSRR1	98	----	----	---	---	---	---	---	---	-15 V	+15 V		---	E60	---				
	PSRR2	99	----	----	---	---	---	---	---	---	---	---		---	E61	---	$\text{PSRR2} = (E61-E62)/3.0$	---	---	---
	PSRR2	100	----	----	---	---	---	---	---	---	-18 V	+18 V		---	E62	---				
	FT(x)	101	----	----	-10 V	---	0 V	---	---	---	-15 V	+15 V		---	E63	mV	$\text{FT}(x) = ((E63+E64)/2) - E38$	-100.0	100.0	mV
	FT(x)	102	----	----	+10 V	---	---	---	---	---	---	---		---	E64	---				
	FT(y)	103	----	----	0 V	---	-10 V	---	---	---	---	---		---	E65	---	$\text{FT}(y) = ((E65+E66)/2) - E38$	-80.0	80.0	---
	FT(y)	104	----	----	---	---	+10 V	---	---	---	---	---		---	E66	---				

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
2 $T_A = +125^{\circ}\text{C}$	+NLx(A)	105	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx(A) = E54 - [(E35 - E37)/4 + ((E35 + E37)/2 + E66)/2]$	-0.6	0.6	%FS
	+NLx(B)	106	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx(B) = E56 + [(E35 - E37)/4 - ((E35 + E37)/2 + E66)/2]$	¹⁷	¹⁷	¹⁷
	-NLx(A)	107	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx(A) = E53 - [(E34 - E36)/4 + ((E34 + E36)/2 + E65)/2]$	¹⁷	¹⁷	¹⁷
	-NLx(B)	108	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx(B) = E55 + [(E34 - E36)/4 - ((E34 + E36)/2 + E65)/2]$	¹⁷	¹⁷	¹⁷
	+NLy(A)	109	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy(A) = E50 - [(E36 - E37)/4 + ((E36 + E37)/2 + E64)/2]$	-0.4	0.4	¹⁷
	+NLy(B)	110	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy(B) = E52 + [(E36 - E37)/4 - ((E36 + E37)/2 + E64)/2]$	¹⁷	¹⁷	¹⁷
	-NLy(A)	111	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy(A) = E49 - [(E34 - E35)/4 + ((E34 + E35)/2 + E63)/2]$	¹⁷	¹⁷	¹⁷
	-NLy(B)	112	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy(B) = E51 + [(E34 - E35)/4 - ((E34 + E35)/2 + E63)/2]$	¹⁷	¹⁷	¹⁷
	+NLx	113	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx = (((E37 + E35)/2) - E66)/2$	-0.6	0.6	¹⁷
	-NLx	114	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx = (((E36 + E34)/2) - E65)/2$	¹⁷	¹⁷	¹⁷
	+NLy	115	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy = (((E37 + E36)/2) - E64)/2$	-0.4	0.4	¹⁷
	-NLy	116	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy = (((E34 + E35)/2) - E63)/2$	¹⁷	¹⁷	¹⁷
3 $T_A = -55^{\circ}\text{C}$	MAx-y-	117	----	----	-10 V	0 V	-10 V	0 V	----	GND	-15 V	+15 V		11	E67	V	$MAx-y- = (E67 - 10)/10 \times 100$	-4.0	4.0	¹⁷
	MAx-y+	118	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E68	¹⁷	$MAx-y+ = (E68 + 10)/10 \times 100$	¹⁷	¹⁷	¹⁷
	MAx+y-	119	----	----	+10 V	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E69	¹⁷	$MAx+y- = (E69 + 10)/10 \times 100$	¹⁷	¹⁷	¹⁷
	MAx+y+	120	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E70	¹⁷	$MAx+y+ = (E70 - 10)/10 \times 100$	¹⁷	¹⁷	¹⁷
	MAxy/ ΔT	121	----	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷		----	----	----	$MAxy/\Delta T = (MAxy(-55^{\circ}\text{C}) - MAxy(25^{\circ}\text{C}))/80$	-0.04	0.04	%FS
	V_{IO}	122	----	----	0 V	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	E71	mV	$V_{IO} = E71$	-190.0	190.0	mV
	$V_{IO}/\Delta T$	123	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	$V_{IO}/\Delta T = (E71 - E5)/80$	-2.0	2.0	mV/ $^{\circ}\text{C}$
	$V_{IO}(X)$	124	----	----	¹⁷	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	E72	mV	$V_{IO}(x) = (E72 - E75)/2$	-100.0	100.0	mV
	$V_{IO}(x)$	125	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E73	¹⁷				
	V																			
	V																			
	V																			

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
3 T _A = -55°C V I +I +I -I -I I I I I I	V _{IO} (x)/ΔT	126	----	----	0 V	0 V	+10 V	0 V	---	GND	-15 V	+15 V		----	----	----	V _{IO} (x)/ΔT = (V _{IO} (x)@-55°C – V _{IO} (x)@25°C)/80	-800.0	800.0	μV/°C
	V _{IO} (y)	127	----	----	-10 V	0 V	0 V	0 V	---	0 V	0 V	0 V		11	E74	mV	V _{IO} (y) = (E74-E75)/2	-100.0	100.0	mV
	I _{IO} (y)	128	----	----	+10 V	0 V	0 V	0 V	---	0 V	0 V	0 V		11	E75	μA				
	V _{IO} (y)/ΔT	129	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		----	----	----	V _{IO} (y)/ΔT = (V _{IO} (y)@-55°C – V _{IO} (y)@25°C)/80	-800.0	800.0	μV/°C
	I _B (Z)	130	----	----	+5 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K8, K9	7	I19	μA	I _B (Z) = I19	-12.0	12.0	μA
	I _B (X)	131	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K5	8	I20	μA		-4.0	4.0	μA
	I _B (Y)	132	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K6	11	I21	μA				
	I _B (X)	133	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K2	11	I22	μA				
	I _B (Y)	134	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K4	11	I23	μA				
	I _{IO} (X)	135	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		----	----	----	I _{IO} (X) = I20-I22	-400.0	400.0	nA
	I _{IO} (Y)	136	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		----	----	----	I _{IO} (Y) = I21-I23			
	I _{OS} (+)	137	----	----	+10 V	0 V	+10 V	0 V	---	0 V	0 V	0 V		11	I24	mA	I _{OS} (+) = I24	-45.0		mA
	I _{OS} (-)	138	----	----	0 V	0 V	-10 V	0 V	---	0 V	0 V	0 V		11	I25	μA	I _{OS} (-) = I25		30.0	μA
	I _{CC}	139	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		10	I26	μA	I _{CC} = I26		6.5	μA
	I _{EE}	140	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		9	I27	μA	I _{EE} = I27	-6.5		μA
	CMRR(x)	141	----	----	-10 V	-10 V	+10 V	0 V	---	0 V	0 V	0 V		11	E76	mV	CMRR(x) = 20 log (10/ΔE _x)	50		dB
	CMRR(x)	142	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		11	E77	μV				
	CMRR(x)	143	----	----	+10 V	+10 V	0 V	0 V	---	0 V	0 V	0 V		11	E78	μV				
	CMRR(y)	144	----	----	0 V	0 V	-10 V	-10 V	---	0 V	0 V	0 V		11	E79	μV	CMRR(y) = 20 log (10/ΔE _y)			
	CMRR(y)	145	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		11	E80	μV				
	CMRR(y)	146	----	----	0 V	0 V	+10 V	+10 V	---	0 V	0 V	0 V		11	E81	μV				

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
3 $T_A = -55^\circ\text{C}$	ERR1	147	----	----	-10 V	0 V	-5 V	0 V	---	GND	-15 V	+15 V		11	E82	V		4.6	5.4	V
	ERR2	148	----	----	+10 V	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E83	¹⁷		-5.4	-4.6	¹⁷
ERR4	ERR3	149	----	----	-10 V	¹⁷	+5 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E84	¹⁷		¹⁷	¹⁷	¹⁷
		150	----	----	+10 V	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E85	¹⁷		4.6	5.4	¹⁷
	ERR5	151	----	----	-5 V	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E86	¹⁷		¹⁷	¹⁷	¹⁷
		152	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E87	¹⁷		-5.4	-4.6	¹⁷
ERR6	ERR7	153	----	----	+5 V	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E88	¹⁷		¹⁷	¹⁷	¹⁷
		154	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E89	¹⁷		4.6	5.4	¹⁷
ERR8	OP	155	----	----	+11 V	¹⁷	+11 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E90	¹⁷	$V_{OP} = E90$	+10.0		¹⁷
	OP	156	----	----	¹⁷	¹⁷	-11 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E91	¹⁷	$V_{OP} = E91$		-10.0	¹⁷
V	PSRR1	157	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	-13.5 V	+13.5 V		¹⁷	E92	¹⁷	$PSRR1 = (E92-E93)/1.5$	-50.0	50.0	mV/V
	PSRR1	158	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	-15 V	+15 V		¹⁷	E93	¹⁷				
	PSRR2	159	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E94	V	$PSRR2 = (E94-E95)/3.0$			
	PSRR2	160	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	-18 V	+18 V		¹⁷	E95	¹⁷				
V	FT(x)	161	----	----	-10 V	¹⁷	0 V	¹⁷	----	¹⁷	-15 V	+15 V		¹⁷	E96	mV	$FT(x) = ((E96+E97)/2) - E71$	-100.0	100.0	mV
	FT(x)	162	----	----	+10 V	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E97	¹⁷				
	FI(y)	163	----	----	0 V	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E98	¹⁷	$FT(y) = ((E98+E99)/2) - E71$	-80.0	80.0	¹⁷
	FI(y)	164	----	----	¹⁷	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E99	¹⁷				
	+NLx(A)	165	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx(A) = E87-[(E68-E70)/4+(((E68+E70)/2+E99)/2)]$	-0.6	0.6	%FS
	+NLx(B)	166	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx(B) = E89+[(E68-E70)/4-(((E68+E70)/2+E99)/2)]$	¹⁷	¹⁷	¹⁷
	-NLx(A)	167	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx(A) = E86-[(E67-E69)/4+(((E67+E69)/2+E98)/2)]$	¹⁷	¹⁷	¹⁷
	-NLx(B)	168	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx(B) = E88+[(E67-E69)/4-(((E67+E69)/2+E98)/2)]$	¹⁷	¹⁷	¹⁷
	+NLy(A)	169	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy(A) = E83-[(E69-E70)/4+(((E69+E70)/2+E97)/2)]$	-0.4	0.4	¹⁷
	+NLy(B)	170	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy(B) = E85+[(E69-E70)/4-(((E69+E70)/2+E97)/2)]$	¹⁷	¹⁷	¹⁷

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
3 $T_A = -55^{\circ}\text{C}$	-NLy(A)	171	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy(A) = E82 - [(E67 - E68)/4 + (((E67 + E68)/2 + E96)/2)]$	-0.4	0.4	%FS
	-NLy(B)	172	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy(B) = E84 + [(E67 - E68)/4 - (((E67 + E68)/2 + E96)/2)]$	¹⁷	¹⁷	¹⁷
	+NLx	173	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx = (((E70 + E68)/2) - E99)/2$	-0.6	0.6	¹⁷
	-NLx	174	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx = (((E69 + E67)/2) - E98)/2$	¹⁷	¹⁷	¹⁷
	+NLy	175	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy = (((E70 + E69)/2) - E97)/2$	-0.4	0.4	¹⁷
	-NLy	176	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy = (((E67 + E68)/2) - E96)/2$	¹⁷	¹⁷	¹⁷
4 $T_A = +25^{\circ}\text{C}$	SR(+)	177	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	$\Delta V_O(+)$	V	See figure 3, waveform 1	25.0		V/ μs
	SR(+)	178	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	$\Delta t(+)$	μs	$SR(+)=\Delta V_O(+)/\Delta t(+)$			
		179	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	$\Delta V_O(-)$	V	See figure 3, waveform 2	35.0		¹⁷
		180	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	$\Delta t(-)$	μs	$SR(-)=\Delta V_O(-)/\Delta t(-)$			
	AE(x)	181	2 Vp-p	----	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	K1, K12, K13, K14	¹⁷	f1	kHz	$AE(x)=f1 @(-1\%) E_o$	70.0		kHz
	SR(-)	182	¹⁷	----	+10 V	¹⁷	----	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	F2	¹⁷	$AE(y)=f2 @(-1\%) E_o$	¹⁷		¹⁷
5 $T_A = +125^{\circ}\text{C}$	SR(+)	183	----	20 Vp-p f = 10kHz	----	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷	K1, K12, K15	¹⁷	$\Delta V_O(+)$	V	See figure 3, waveform 1 $SR(+)=\Delta V_O(+)/\Delta t(+)$	25.0		V/ μs
		184	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	$\Delta t(+)$	μs				
		185	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	$\Delta V_O(-)$	V	See figure 3, waveform 2	35.0		¹⁷
		186	----	¹⁷	----	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	¹⁷	¹⁷	$\Delta t(-)$	μs	$SR(-)=\Delta V_O(-)/\Delta t(-)$			

SR(+)
SR(-)
SR(-)

TABLE III. Group A inspection for device type 03 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
6 T _A = -55°C	SR(+)	187	----	20 Vp-p f = 10kHz	----	0 V	+10 V	0 V	----	GND	-15 V	+15 V	K1, K12, K15	11	ΔV _O (+)	V	See figure 3, waveform 1 SR(+) = ΔV _O (+)/Δt(+)	25.0		V/μs
		188	----	Δt(+)	----	Δt(+)	Δt(+)	Δt(+)	----	Δt(+)	Δt(+)	Δt(+)	Δt(+)	Δt(+)	Δt(+)	μs				
		189	----	Δt(+)	----	Δt(+)	Δt(+)	Δt(+)	----	Δt(+)	Δt(+)	Δt(+)	Δt(+)	Δt(+)	Δt(+)	V	See figure 3, waveform 2	35.0		Δt(+)
		190	----	Δt(+)	----	Δt(+)	Δt(+)	Δt(+)	----	Δt(+)	Δt(+)	Δt(+)	Δt(+)	Δt(+)	Δt(+)	μs	SR(-) = ΔV _O (-)/Δt(-) See figure 4 BW = 10 Hz to 100 kHz			mVrms
7 T _A = +25°C	NI(BB)	191	----	----	----	----	----	----	----	----	----	----		----	----	----				
9 T _A = +25°C	ts(+)	192	----	20 Vp-p f = 10kHz	----	0 V	+10 V	0 V	----	GND	-15 V	+15 V	K1, K12, K15	11	ts(+)	μs	See figure 3, waveform 1	3.0	2.0	μs
	ts(-)	193	----	Δt(-)	----	Δt(-)	Δt(-)	Δt(-)	----	Δt(-)	Δt(-)	Δt(-)	Δt(-)	Δt(-)	Δt(-)	Δt(-)	See figure 3, waveform 2		Δt(-)	Δt(-)

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TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
1 $T_A = +25^\circ\text{C}$	$I_{OS}(+)$	17	----	----	+10 V	0 V	+10 V	0 V	----	GND	-15 V	+15 V		11	I6	mA	$I_{OS}(+) = I6$	-30.0		mA
	$I_{OS}(-)$	18	----	----	“	“	-10 V	“	----	“	“	“		“	I7	“	$I_{OS}(-) = I7$		30.0	“
	CC	19	----	----	0 V	“	0 V	“	----	“	“	“		10	I8	“	$I_{CC} = I8$		6.0	“
	EE	20	----	----	“	“	“	“	----	“	“	“		9	I9	“	$I_{EE} = I9$	-6.0		“
	CMRR(x)	21	----	----	-6 V	-6 V	+10 V	“	----	“	“	“		11	E10	mV	$CMRR(x) = 20 \log (10/\Delta E_x)$	50.0		dB
	CMRR(x)	22	----	----	0 V	0 V	“	“	----	“	“	“		“	E11	“				
	CMRR(x)	23	----	----	+10 V	+10 V	“	“	----	“	“	“		“	E12	“				
	CMRR(y)	24	----	----	“	“	-6 V	-6 V	----	“	“	“		“	E13	“	$CMRR(y) = 20 \log (10/\Delta E_y)$	“		“
	CMRR(y)	25	----	----	“	“	0 V	0 V	----	“	“	“		“	E14	“				
	CMRR(y)	26	----	----	“	“	+10 V	+10 V	----	“	“	“		“	E15	“				
	ERR1	27	----	----	-10 V	“	-5 V	0 V	----	“	“	“		“	E16	V		4.9	5.1	V
		28	----	----	+10 V	“	“	“	----	“	“	“		“	E17	“		-5.1	-4.9	“
	ERR3	29	----	----	-10 V	“	+5 V	“	----	“	“	“		“	E18	“		“	“	“
		30	----	----	+10 V	“	“	“	----	“	“	“		“	E19	“		4.9	5.1	“
	ERR2	ERR5	31	----	-5 V	“	-10 V	“	----	“	“	“		“	E20	“		“	“	“
		32	----	----	“	“	+10 V	“	----	“	“	“		“	E21	“		-5.1	-4.9	“
	ERR4	ERR7	33	----	+5 V	“	-10 V	“	----	“	“	“		“	E22	“		“	“	“
		34	----	----	“	“	+10 V	“	----	“	“	“		“	E23	“		4.9	5.1	“
	ERR6	OP	35	----	----	+12 V	“	“	----	“	“	“		“	E24	“	$V_{OP} = E24$	+10.0		“
		OP	36	----	----	“	“	-10 V	“	----	“	“		“	E25	“	$V_{OP} = E25$		-10.0	“
	ERR8	PSRR1	37	----	----	+5 V	“	+10 V	“	----	“	-13.5 V	+13.5 V	“	E26	“	$PSRR1 = (E26-E27)/3$	-50.0	50.0	mV/V
		PSRR1	38	----	----	“	“	“	“	----	“	-15 V	+15 V	“	E27	“				

TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
1 $T_A = +25^\circ\text{C}$	PSRR2	39	----	----	+5 V	0 V	+10 V	0 V	---	GND	-15 V	+15 V		11	E28	V	$\text{PSRR2} = (\text{E28}-\text{E29})/6$	-40.0	40.0	mV/V
	PSRR2	40	----	----	⌚	⌚	⌚	⌚	---	⌚	-18 V	+18 V		⌚	E29	⌚				
	FT(x)	41	----	----	-10 V	⌚	0 V	⌚	---	⌚	-15 V	+15 V		⌚	E30	mV	$\text{FT}(\text{x}) = ((\text{E30}+\text{E31})/2) - \text{E5}$	-50.0	50.0	mV
	FT(x)	42	----	----	+10 V	⌚	⌚	⌚	---	⌚	⌚	⌚		⌚	E31	⌚				
	FT(y)	43	----	----	0 V	⌚	-10 V	⌚	---	⌚	⌚	⌚		⌚	E32	⌚	$\text{FT}(\text{y}) = ((\text{E32}+\text{E33})/2) - \text{E5}$	-40.0	40.0	⌚
	FT(y)	44	----	----	⌚	⌚	+10 V	⌚	---	⌚	⌚	⌚		⌚	E33	⌚				
	+NLx(A)	45	----	----	----	----	----	----	----	----	----	----		----	----	----	$+\text{NLx}(\text{A}) = \text{E21}-[(\text{E2}-\text{E4})/4+(((\text{E2}+\text{E4})/2+\text{E33})/2)]$	-0.8	0.8	%FS
	+NLx(B)	46	----	----	----	----	----	----	----	----	----	----		----	----	----	$+\text{NLx}(\text{B}) = \text{E23}+[(\text{E2}-\text{E4})/4+(((\text{E2}+\text{E4})/2+\text{E33})/2)]$	⌚	⌚	⌚
	-NLx(A)	47	----	----	----	----	----	----	----	----	----	----		----	----	----	$-\text{NLx}(\text{A}) = \text{E20}-[(\text{E1}-\text{E3})/4+(((\text{E1}+\text{E3})/2+\text{E32})/2)]$	⌚	⌚	⌚
	-NLx(B)	48	----	----	----	----	----	----	----	----	----	----		----	----	----	$-\text{NLx}(\text{B}) = \text{E22}+[(\text{E1}-\text{E3})/4+(((\text{E1}+\text{E3})/2+\text{E32})/2)]$	⌚	⌚	⌚
	+NLy(A)	49	----	----	----	----	----	----	----	----	----	----		----	----	----	$+\text{NLy}(\text{A}) = \text{E17}-[(\text{E3}-\text{E4})/4+(((\text{E3}+\text{E4})/2+\text{E31})/2)]$	-1.0	1.0	⌚
	+NLy(B)	50	----	----	----	----	----	----	----	----	----	----		----	----	----	$+\text{NLy}(\text{B}) = \text{E19}+[(\text{E3}-\text{E4})/4+(((\text{E3}+\text{E4})/2+\text{E31})/2)]$	⌚	⌚	⌚
	-NLy(A)	51	----	----	----	----	----	----	----	----	----	----		----	----	----	$-\text{NLy}(\text{A}) = \text{E16}-[(\text{E1}-\text{E2})/4+(((\text{E1}+\text{E2})/2+\text{E30})/2)]$	⌚	⌚	⌚
	-NLy(B)	52	----	----	----	----	----	----	----	----	----	----		----	----	----	$-\text{NLy}(\text{B}) = \text{E18}+[(\text{E1}-\text{E2})/4+(((\text{E1}+\text{E2})/2+\text{E30})/2)]$	⌚	⌚	⌚
	+NLx	53	----	----	----	----	----	----	----	----	----	----		----	----	----	$+\text{NLx} = (((\text{E4}+\text{E2})/2)-\text{E33})/2$	-0.8	0.8	⌚
	-NLx	54	----	----	----	----	----	----	----	----	----	----		----	----	----	$-\text{NLx} = (((\text{E3}+\text{E1})/2)-\text{E32})/2$	⌚	⌚	⌚
2 $T_A = +125^\circ\text{C}$	MAx-y-	57	----	----	-10 V	0 V	-10 V	0 V	----	GND	-15 V	+15 V		11	E34	V	$\text{MAx-y-} = (\text{E34}-10)/10 \times 100$	-4.0	4.0	⌚
	MAx-y+	58	----	----	⌚	⌚	+10 V	⌚	----	⌚	⌚	⌚		⌚	E35	⌚	$\text{MAx-y+} = (\text{E35}+10)/10 \times 100$	⌚	⌚	⌚
	MAx+y-	59	----	----	+10 V	⌚	-10 V	⌚	----	⌚	⌚	⌚		⌚	E36	⌚	$\text{MAx+y-} = (\text{E36}+10)/10 \times 100$	⌚	⌚	⌚
	MAx+y+	60	----	----	⌚	⌚	+10 V	⌚	----	⌚	⌚	⌚		⌚	E37	⌚	$\text{MAx+y+} = (\text{E37}-10)/10 \times 100$	⌚	⌚	⌚

TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
2 $T_A = +125^\circ\text{C}$ V V V V V I +I +I -I -I I I I I I I I I	MAxy/ ΔT	61	----	----	+10 V	0 V	+10 V	0 V	---	GND	-15 V	+15 V		----	----	----	$MAxy/\Delta T = (MAxy(125^\circ\text{C}) - MAxy(25^\circ\text{C}))/100$	-0.04	0.04	%FS
	V_{OIO}	62	----	----	0 V	¹⁷	0 V	¹⁷	---	¹⁷	¹⁷	¹⁷		11	E38	mV	$V_{OIO} = E38$	-100.0	100.0	mV
	$\alpha_{IO}/\Delta T$	63	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		----	----	----	$V_{OIO}/\Delta T = (E38-E5)/100$	-1.0	1.0	mV/ $^\circ\text{C}$
	$I_{IO}(X)$	64	----	----	¹⁷	¹⁷	-10 V	¹⁷	---	¹⁷	¹⁷	¹⁷		11	E39	mV	$V_{IO}(X) = (E39-E40)/2$	-90.0	90.0	mV
	$I_{IO}(X)$	65	----	----	¹⁷	¹⁷	+10 V	¹⁷	---	¹⁷	¹⁷	¹⁷		¹⁷	E40	¹⁷				
	$V_{IO}(X)/\Delta T$	66	----	----	¹⁷	¹⁷	¹⁷	¹⁷	---	¹⁷	¹⁷	¹⁷		----	----	----	$V_{IO}(X)/\Delta T = (V_{IO}(X)@125^\circ\text{C} - V_{IO}(X)@25^\circ\text{C})/100$	-800.0	800.0	$\mu\text{V}/^\circ\text{C}$
	$I_{IO}(Y)$	67	----	----	-10 V	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	E41	mV	$V_{IO}(Y) = (E41-E42)/2$	-100.0	100.0	mV
	$I_{IO}(Y)$	68	----	----	+10 V	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	E42	¹⁷				
	$V_{IO}(Y)/\Delta T$	69	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	$V_{IO}(Y)/\Delta T = (V_{IO}(Y)@125^\circ\text{C} - V_{IO}(Y)@25^\circ\text{C})/100$	-800.0	800.0	$\mu\text{V}/^\circ\text{C}$
	$I_{IB}(Z)$	70	----	----	+5 V	¹⁷	----	¹⁷	----	¹⁷	¹⁷	¹⁷	K8, K9	7	I10	μA	$I_{IB}(Z) = I10$	-----	6.0	μA
	$I_{IB}(X)$	71	----	----	----	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷		K5	8	I11	¹⁷	-2.5	2.5	¹⁷
	$I_{IB}(Y)$	72	----	----	0 V	¹⁷	----	¹⁷	----	¹⁷	¹⁷	¹⁷	K6	¹⁷	I12	¹⁷		¹⁷	¹⁷	¹⁷
	$I_{IB}(X)$	73	----	----	¹⁷	----	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷	K2	¹⁷	I13	¹⁷		¹⁷	¹⁷	¹⁷
	$I_{IB}(Y)$	74	----	----	¹⁷	0 V	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷	K4	¹⁷	I14	¹⁷		¹⁷	¹⁷	¹⁷
	$I_{IO}(X)$	75	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	$I_{IO}(X) = I11-I13$	-200.0	200.0	nA
	$I_{IO}(Y)$	76	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		----	----	----	$I_{IO}(Y) = I12-I14$	¹⁷	¹⁷	¹⁷
	$I_{OS}(+)$	77	----	----	+10 V	¹⁷	+10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		11	I15	mA	$I_{OS}(+) = I15$	-30.0		mA
	$I_{OS}(-)$	78	----	----	¹⁷	¹⁷	-10 V	¹⁷	----	¹⁷	¹⁷	¹⁷		¹⁷	I16	¹⁷	$I_{OS}(-) = I16$		30.0	¹⁷
	CC	79	----	----	0 V	¹⁷	0 V	¹⁷	----	¹⁷	¹⁷	¹⁷		10	I17	¹⁷	$I_{CC} = I17$		8.0	¹⁷
	EE	80	----	----	¹⁷	¹⁷	¹⁷	¹⁷	----	¹⁷	¹⁷	¹⁷		9	I18	¹⁷	$I_{EE} = I18$	-8.0		¹⁷

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TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
2 $T_A = +125^\circ\text{C}$	+NLx(A)	105	----	----	----	----	----	----	----	----	----	----					$+NLx(A) = E54 - [(E35 - E37)/4 + (((E35 + E37)/2 + E66)/2)]$	-0.8	0.8	%FS
	+NLx(B)	106	----	----	----	----	----	----	----	----	----	----					$+NLx(B) = E56 + [(E35 - E37)/4 - (((E35 + E37)/2 + E66)/2)]$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	-NLx(A)	107	----	----	----	----	----	----	----	----	----	----					$-NLx(A) = E53 - [(E34 - E36)/4 + (((E34 + E36)/2 + E65)/2)]$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	-NLx(B)	108	----	----	----	----	----	----	----	----	----	----					$-NLx(B) = E55 + [(E34 - E36)/4 - (((E34 + E36)/2 + E65)/2)]$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	+NLy(A)	109	----	----	----	----	----	----	----	----	----	----					$+NLy(A) = E50 - [(E36 - E37)/4 + (((E36 + E37)/2 + E64)/2)]$	-1	1	⁽¹⁾
	+NLy(B)	110	----	----	----	----	----	----	----	----	----	----					$+NLy(B) = E52 + [(E36 - E37)/4 - (((E36 + E37)/2 + E64)/2)]$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	-NLy(A)	111	----	----	----	----	----	----	----	----	----	----					$-NLy(A) = E49 - [(E34 - E35)/4 + (((E34 + E35)/2 + E63)/2)]$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	-NLy(B)	112	----	----	----	----	----	----	----	----	----	----					$-NLy(B) = E51 + [(E34 - E35)/4 - (((E34 + E35)/2 + E63)/2)]$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	+NLx	113	----	----	----	----	----	----	----	----	----	----					$+NLx = (((E37 + E35)/2) - E66)/2$	0.8	0.8	⁽¹⁾
	-NLx	114	----	----	----	----	----	----	----	----	----	----					$-NLx = (((E36 + E34)/2) - E65)/2$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	+NLy	115	----	----	----	----	----	----	----	----	----	----					$+NLy = (((E37 + E36)/2) - E64)/2$	-1	1	⁽¹⁾
	-NLy	116	----	----	----	----	----	----	----	----	----	----					$-NLy = (((E34 + E35)/2) - E63)/2$	⁽¹⁾	⁽¹⁾	⁽¹⁾
3 $T_A = -55^\circ\text{C}$	MAx-y-	117	----	----	-10 V	0 V	-10 V	0 V	----	GND	-15 V	+15 V		11	E67	V	$MAx-y = (E67 - 10)/10 \times 100$	-4.0	4.0	⁽¹⁾
	MAx-y+	118	----	----	⁽¹⁾	⁽¹⁾	+10 V	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		⁽¹⁾	E68	⁽¹⁾	$MAx-y+ = (E68 + 10)/10 \times 100$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	MAx+y-	119	----	----	+10 V	⁽¹⁾	-10 V	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		⁽¹⁾	E69	⁽¹⁾	$MAx+y- = (E69 + 10)/10 \times 100$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	MAx+y+	120	----	----	⁽¹⁾	⁽¹⁾	+10 V	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		⁽¹⁾	E70	⁽¹⁾	$MAx+y+ = (E70 - 10)/10 \times 100$	⁽¹⁾	⁽¹⁾	⁽¹⁾
	MAxy/ ΔT	121	----	----	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		----	----	----	$MAxy/\Delta T = (MAxy(-55^\circ\text{C}) - MAxy(25^\circ\text{C}))/80$	-0.04	0.04	%FS/ ΔT
	V_{IO}	122	----	----	0 V	⁽¹⁾	0 V	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		11	E71	mV	$V_{IO} = E71$	-100.0	100.0	mV
	$V_{IO}/\Delta T$	123	----	----	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		----	----	----	$V_{IO}/\Delta T = (E71 - E5)/80$	-1.0	1.0	mV/ $^\circ\text{C}$
	$V_{IO}(X)$	124	----	----	⁽¹⁾	⁽¹⁾	-10 V	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		11	E72	mV	$V_{IO}(X) = (E72 - E73)/2$	-90.0	90.0	mV
	$V_{IO}(X)$	125	----	----	⁽¹⁾	⁽¹⁾	+10 V	⁽¹⁾	----	⁽¹⁾	⁽¹⁾	⁽¹⁾		⁽¹⁾	E73	⁽¹⁾				
	V																			
	V																			
	V																			

TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
3 T _A = -55°C V - + - + - - - - - - - - - - - -	V _{IO} (x)/ΔT	126	----	----	0 V	0 V	+10 V	0 V	---	GND	-15 V	+15 V		----	----	----	V _{IO} (x)/ΔT = (V _{IO} (x)@-55°C – V _{IO} (x)@25°C)/80	-800.0	800.0	μV/°C
	V _{IO} (y)	127	----	----	-10 V	0 V	0 V	0 V	---	0 V	0 V	0 V		11	E74	mV	V _{IO} (y) = (E74-E75)/2	-100.0	100.0	mV
	I _{IO} (y)	128	----	----	+10 V	0 V	0 V	0 V	---	0 V	0 V	0 V		17	E75	μA				
	V _{IO} (y)/ΔT	129	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V					V _{IO} (y)/ΔT = (V _{IO} (y)@-55°C – V _{IO} (y)@25°C)/80	-800.0	800.0	μV/°C
	I _B (Z)	130	----	----	+5 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K8, K9	7	I19	μA	I _B (Z) = I19	----	6.0	μA
	I _B (x)	131	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K5	8	I20	μA		-6.0	μA	
	I _B (y)	132	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K6	17	I21	μA		μA	μA	
	I _B (x)	133	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K2	17	I22	μA		μA	μA	
	I _B (y)	134	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V	K4	17	I23	μA		μA	μA	
	I _{IO} (x)	135	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V					I _{IO} (x) = I20-I22	-400.0	400.0	nA
	I _{IO} (y)	136	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V					I _{IO} (y) = I21-I23	μA	μA	
	I _{OS} (+)	137	----	----	+10 V	0 V	+10 V	0 V	---	0 V	0 V	0 V		11	I24	mA	I _{OS} (+) = I24	-30.0		mA
	I _{OS} (-)	138	----	----	0 V	0 V	-10 V	0 V	---	0 V	0 V	0 V		17	I25	μA	I _{OS} (-) = I25		30.0	μA
	I _{CC}	139	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		10	I26	μA	I _{CC} = I26		6.0	μA
	I _{EE}	140	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		9	I27	μA	I _{EE} = I27	-6.0		μA
	CMRR(x)	141	----	----	-6 V	-6 V	+10 V	0 V	---	0 V	0 V	0 V		11	E76	mV	CMRR(x) = 20 log (10/ΔE _x)	50.0		dB
	CMRR(x)	142	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		17	E77	μV				
	CMRR(x)	143	----	----	+10 V	+10 V	0 V	0 V	---	0 V	0 V	0 V		17	E78	μV				
	CMRR(y)	144	----	----	0 V	0 V	-6 V	-6 V	---	0 V	0 V	0 V		17	E79	μV	CMRR(y) = 20 log (10/ΔE _y)			
	CMRR(y)	145	----	----	0 V	0 V	0 V	0 V	---	0 V	0 V	0 V		17	E80	μV				
	CMRR(y)	146	----	----	0 V	0 V	+10 V	+10 V	---	0 V	0 V	0 V		17	E81	μV				

TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
3 T _A = -55°C	ERR1	147	----	----	-10 V	0 V	-5 V	0 V	----	GND	-15 V	+15 V		11	E82	V		4.6	5.4	V
	ERR2	148	----	----	+10 V	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E83	¹³		-5.4	-4.6	¹³
	ERR3	149	----	----	-10 V	¹³	+5 V	¹³	----	¹³	¹³	¹³		¹³	E84	¹³		¹³	¹³	¹³
		150	----	----	+10 V	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E85	¹³		4.6	5.4	¹³
	ERR5	151	----	----	-5 V	¹³	-10 V	¹³	----	¹³	¹³	¹³		¹³	E86	¹³		¹³	¹³	¹³
		152	----	----	¹³	¹³	+10 V	¹³	----	¹³	¹³	¹³		¹³	E87	¹³		-5.4	-4.6	¹³
	ERR7	153	----	----	+5 V	¹³	-10 V	¹³	----	¹³	¹³	¹³		¹³	E88	¹³		¹³	¹³	¹³
		154	----	----	¹³	¹³	+10 V	¹³	----	¹³	¹³	¹³		¹³	E89	¹³		4.6	5.4	¹³
	ERR4																			
	OP	155	----	----	+15 V	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E90	¹³	V _{OP} = E90	+10.0		¹³
	ERR6																			
	OP	156	----	----	¹³	¹³	-10 V	¹³	----	¹³	¹³	¹³		¹³	E91	¹³	V _{OP} = E91		-10.0	¹³
		157	----	----	¹³	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E92	¹³	PSRR1 = (E92-E93)/3	-100.0	100.0	mV/V
	ERR8																			
	PSRR1	158	----	----	¹³	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E93	¹³				
	PSRR2	159	----	----	¹³	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E94	¹³	PSRR2 = (E94-E95)/6	-40.0	40.0	mV/V
	PSRR2	160	----	----	¹³	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E95	¹³				
	FT(x)	161	----	----	-10 V	¹³	0 V	¹³	----	¹³	¹³	¹³		¹³	E96	mV	FT(x) = ((E96+E97)/2) – E71	-50.0	50.0	mV
	FT(x)	162	----	----	+10 V	¹³	¹³	¹³	----	¹³	¹³	¹³		¹³	E97	¹³				
	FT(y)	163	----	----	0 V	¹³	-10 V	¹³	----	¹³	¹³	¹³		¹³	E98	¹³	FT(y) = ((E98+E99)/2) – E71	-40.0	40.0	¹³
	FT(y)	164	----	----	¹³	¹³	+10 V	¹³	----	¹³	¹³	¹³		¹³	E99	¹³				
	+NLx(A)	165	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLx(A) = E87-[(E68-E70)/4+(((E68+E70)/2+E99)/2)]	-0.8	0.8	%FS
	+NLx(B)	166	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLx(B) = E89+[(E68-E70)/4-(((E68+E70)/2+E99)/2)]	¹³	¹³	¹³
	-NLx(A)	167	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLx(A) = E86-[(E67-E69)/4+(((E67+E69)/2+E98)/2)]	¹³	¹³	¹³
	-NLx(B)	168	----	----	----	----	----	----	----	----	----	----		----	----	----	-NLx(B) = E88+[(E67-E69)/4-(((E67+E69)/2+E98)/2)]	¹³	¹³	¹³
	+NLy(A)	169	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLy(A) = E83-[(E69-E70)/4+(((E69+E70)/2+E97)/2)]	-1	1	¹³
	+NLy(B)	170	----	----	----	----	----	----	----	----	----	----		----	----	----	+NLy(B) = E85+[(E69-E70)/4-(((E69+E70)/2+E97)/2)]	¹³	¹³	¹³

TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
3 $T_A = -55^{\circ}\text{C}$	-NLy(A)	171	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy(A) = E82 - [(E67 - E68)/4 + (((E67 + E68)/2 + E96)/2)]$	-1	-1	%FS
	-NLy(B)	172	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy(B) = E84 + [(E67 - E68)/4 - (((E67 + E68)/2 + E96)/2)]$	“	“	“
	+NLx	173	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLx = (((E70 + E68)/2) - E99)/2$	0.8	0.8	“
	-NLx	174	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLx = (((E69 + E67)/2) - E98)/2$	“	“	“
	+NLy	175	----	----	----	----	----	----	----	----	----	----		----	----	----	$+NLy = (((E70 + E69)/2) - E97)/2$	-1	1	“
	-NLy	176	----	----	----	----	----	----	----	----	----	----		----	----	----	$-NLy = (((E67 + E68)/2) - E96)/2$	“	“	“
4 $T_A = +25^{\circ}\text{C}$	SR(+)	177	----	“	----	“	“	“	----	“	“	“		“	$\Delta V_O(+)$	V	See figure 3, waveform 1 $SR(+) = \Delta V_O(+)/\Delta t(+)$	18.0		V/ μs
		178	----	“	----	“	“	“	----	“	“	“		“	$\Delta t(+)$	μs				“
		179	----	“	----	“	“	“	----	“	“	“		“	$\Delta V_O(-)$	V	See figure 3, waveform 2	“		“
		180	----	“	----	“	“	“	----	“	“	“		“	$\Delta t(-)$	μs	$SR(-) = \Delta V_O(-)/\Delta t(-)$			
	SR(+) SR(-)	AE(x)	181	2 Vp-p	----	“	“	“	----	“	“	“	K1, K12, K13, K14	“	f1	kHz	$AE(x) = f1 \text{ @} (-1\%) E_o$	70.0		kHz
		AE(y)	182	“	----	+10 V	“	----	“	----	“	“	“	“	f2	“	$AE(y) = f2 \text{ @} (-1\%) E_o$	“		“
5 $T_A = +125^{\circ}\text{C}$	SR(+) SR(-)	SR(+)	183	20 Vp-p f = 10kHz	----	“	+10 V	“	----	“	“	“	K1, K12, K15	“	$\Delta V_O(+)$	V	See figure 3, waveform 1 $SR(+) = \Delta V_O(+)/\Delta t(+)$	15		V/ μs
			184	----	“	----	“	“	----	“	“	“	“	“	$\Delta t(+)$	μs				“
			185	----	“	----	“	“	----	“	“	“	“	“	$\Delta V_O(-)$	V	See figure 3, waveform 2	“		“
			186	----	“	----	“	“	----	“	“	“	“	“	$\Delta t(-)$	μs	$SR(-) = \Delta V_O(-)/\Delta t(-)$			

SR(+)
SR(-)
SR(-)

TABLE III. Group A inspection for device type 04 – Continued.

Subgroup	Symbol	Test no.	Adapter pin numbers										Energized relays	Measured pin			Equations	Limits		Unit
			1	2	3	4	5	6	7	8	9	10		No.	Value	Unit		Min	Max	
6 $T_A = -55^\circ\text{C}$	SR(+)	187	----	20 Vp-p f = 10kHz	----	0 V	+10 V	0 V	----	GND	-15 V	+15 V	K1, K12, K15	11	$\Delta V_O(+)$	V	See figure 3, waveform 1 $SR(+) = \Delta V_O(+)/\Delta t(+)$	18.0		V/ μs
		188	----	11	----	11	11	11	----	11	11	11	11	11	$\Delta t(+)$	μs				11
		189	----	11	----	11	11	11	----	11	11	11	11	11	$\Delta V_O(-)$	V		11		11
		190	----	11	----	11	11	11	----	11	11	11	11	11	$\Delta t(-)$	μs				11
7 $T_A = +25^\circ\text{C}$	SR(+)	191	----	----	----	----	----	----	----	----	----	----		----	----	----	See figure 4 BW = 10 Hz to 100 kHz			mVrms
8 $T_A = +25^\circ\text{C}$	SR(-)		----	----	----	----	----	----	----	----	----	----		----	----	----				
9 $T_A = +25^\circ\text{C}$	SR(+)		----	----	----	----	----	----	----	----	----	----		----	----	----				
6 $T_A = +25^\circ\text{C}$	ts(+)	192	----	20 Vp-p f = 10kHz	----	0 V	+10 V	0 V	----	GND	-15 V	+15 V	K1, K12, K15	11	ts(+)	μs	See figure 3, waveform 1	3.0	2.5	μs
	ts(-)	193	----	11	----	11	11	11	----	11	11	11	11	11	ts(-)	11			11	11

4.4.1 Group A inspection. Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 8, 10, and 11 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of MIL-PRF-38535.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:

- a. End point electrical parameters shall be as specified in table II herein.
- b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table V of MIL-PRF-38535. End point electrical parameters shall be as specified in table II herein.

4.5 Methods of inspection. Methods of inspection shall be specified and as follows.

4.5.1 Voltage and current. All voltage values given are referenced to the microcircuit ground terminals. Currents given are conventional current and positive when flowing into the referenced terminal.

4.6 Data reporting. When specified in the acquisition document, a copy of the following data, as applicable, shall be applied:

- a. Attributes data for all screening tests (see 4.2) and variables data for all static burn-in, dynamic burn-in, and operating life tests.
- b. A copy of each radiograph.
- c. The quality conformance inspection data (see 4.4).
- d. Parameter distribution data on parameters evaluated during burn-in (see 3.5).
- e. Final electrical parameter data (4.2b).

Table IV. Group C end-point electrical parameters. $T_A = 25^\circ\text{C}$, $V_S = \pm 15\text{ V dc}$, $V_{OS} = \text{GND}$

Table III test no.	Test	Unit	01 delta		02 delta		03 delta		04 delta	
			Min	Max	Min	Max	Min	Max	Min	Max
1	MAx-y-	%FS	-0.1	0.1	-0.1	0.1	-0.2	0.2	-0.2	0.2
2	MAx-y+	%FS	-0.1	0.1	-0.1	0.1	-0.2	0.2	-0.2	0.2
3	MAx+y-	%FS	-0.1	0.1	-0.1	0.1	-0.2	0.2	-0.2	0.2
4	MAx+y+	%FS	-0.1	0.1	-0.1	0.1	-0.2	0.2	-0.2	0.2
11,12,13	+I _{IB}	μA	-0.2	0.2	-0.2	0.2	----	----	----	----
14,15,16	-I _{IB}	μA	-0.2	0.2	-0.2	0.2	----	----	----	----
11,12	+I _{IB}	μA	----	----	----	----	-0.2	0.2	-0.2	0.2
13,14	-I _{IB}	μA	----	----	----	----	-0.2	0.2	-0.2	0.2

5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department of Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

6.1 Intended use. Microcircuits conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of the specification.
- b. PIN and compliance identifier, if applicable (see 1.2).
- c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- d. Requirements for certificate of compliance, if applicable.
- e. Requirements for notification of change of product or process to acquiring activity in addition to notification of the qualifying activity, if applicable.
- f. Requirements for failure analysis (including required test condition of MIL-STD-883, method 5003), corrective action and reporting of results, if applicable.
- g. Requirements for product assurance options.
- h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements should not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
- i. Requirements for "JAN" marking.
- j. Packaging requirements (see 5.1).

6.3 Superseding information. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, 3990 E. Broad Street, Columbus, Ohio 43123-1199.

6.5 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535 and MIL-HDBK-1331.

6.6 Logistic support. Lead materials and finishes (see 3.4) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish A (see 3.4). Longer length leads and lead forming should not affect the part number.

6.7 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

<u>Military device type</u>	<u>Generic-industry type</u>
01	534T
02	534S
03	532S
04	4213

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:

Army – CR
Navy - EC
Air Force - 11
NASA – NA
DLA – CC

Preparing activity:

DLA - CC
Project 5962-2073

Review activities:

Army – MI, SM
Navy – AS, CG, MC, SH, TD
Air Force – 03, 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.