

The documentation and process conversion measures necessary to comply with this revision shall be completed by 2 April 2012.

INCH-POUND

MIL-PRF-19500/671A
17 February 2012
SUPERSEDING
MIL-PRF-19500/671
21 June 2000

* PERFORMANCE SPECIFICATION SHEET

SEMICONDUCTOR DEVICE, DIODE, SILICON, SCHOTTKY
POWER RECTIFIER, COMMON CATHODE OR ANODE CENTER TAP,
TYPES 1N6828, 1N6828R, 1N6833, 1N6833R, 1N6828U3, AND 1N6833U3,
JAN, JANTX, JANTXV, AND JANS

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

The requirements for acquiring the product described herein shall consist of
this specification sheet and MIL-PRF-19500.

1. SCOPE

1.1 Scope. This specification covers the performance requirements for silicon, power rectifier. Four levels of product assurance are provided for each device types as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figure 1 (TO-254AA isolated), and figure 2 (SMD.5).

1.3 Maximum ratings.

Type	V_{RWM} (1)	I_O (1) (2) (3) (4) $T_C = +110^\circ\text{C}$	I_{FSM} (1) $T_C = +25^\circ\text{C}$ $T_p = 8.3\text{ ms}$	T_{STG}	T_J
	<u>V</u>	<u>A dc</u>	<u>A (pk)</u>	<u>°C</u>	<u>°C</u>
1N6828	100	15	250	-65 to +150	-65 to +150
1N6828R	100	15	250	-65 to +150	-65 to +150
1N6833	200	15	250	-65 to +150	-65 to +150
1N6833R	200	15	250	-65 to +150	-65 to +150
1N6828U3	100	15	250	-65 to +150	-65 to +150
1N6833U3	200	15	250	-65 to +150	-65 to +150

(1) Each individual diode.

(2) Derate linearly at 300 mA/°C from $T_C = +150^\circ\text{C}$ to $+200^\circ\text{C}$.

(3) Total package current is limited to 30 A dc.

(4) Derate linearly at 375 mA/°C from $T_C = +110^\circ\text{C}$ to $+150^\circ\text{C}$.

* Comments, suggestions, or questions on this document should be addressed to DLA Land and Maritime, ATTN: VAC, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to Semiconductor@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.daps.dla.mil/>.

1.4 Primary electrical characteristics. Unless otherwise specified, primary electrical characteristics at $T_A = +25^\circ\text{C}$.

Types	Max V_{FM1} $I_{FM} =$ 5 A(pk)	Max V_{FM2} $I_{FM} =$ 15 A(pk)	Max V_{FM3} $I_{FM} =$ 30 A(pk)	Max I_{RM} at V_{RWM} pulsed method (see 4.5.1)		Max C_J $V_R = 10\text{ V}$ dc	Max $R_{\theta JC}$	Max $Z_{\theta JX}$
				$T_J =$ $+25^\circ\text{C}$ I_{RM1}	$T_J =$ $+100^\circ\text{C}$ I_{RM2}			
	<u>V (pk)</u>	<u>V (pk)</u>	<u>V (pk)</u>	<u>μA</u>	<u>mA</u>	<u>pF</u>	<u>$^\circ\text{C/W}$</u>	<u>$^\circ\text{C/W}$</u>
1N6828	0.86	1.1	1.37	15	1.5	220	2.3	2
1N6828R	0.86	1.1	1.37	15	1.5	220	2.3	2
1N6833	0.86	1.1	1.37	20	1.5	220	2.3	2
1N6833R	0.86	1.1	1.37	20	1.5	220	2.3	2
1N6828U3	0.86	1.1	1.37	15	1.5	220	2.3	2
1N6833U3	0.86	1.1	1.37	20	1.5	220	2.3	2

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.

2.2 Government documents.

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

SPECIFICATION

DEPARTMENT OF DEFENSE

MIL-PRF-19500 - Semiconductor Devices, General Specification for.

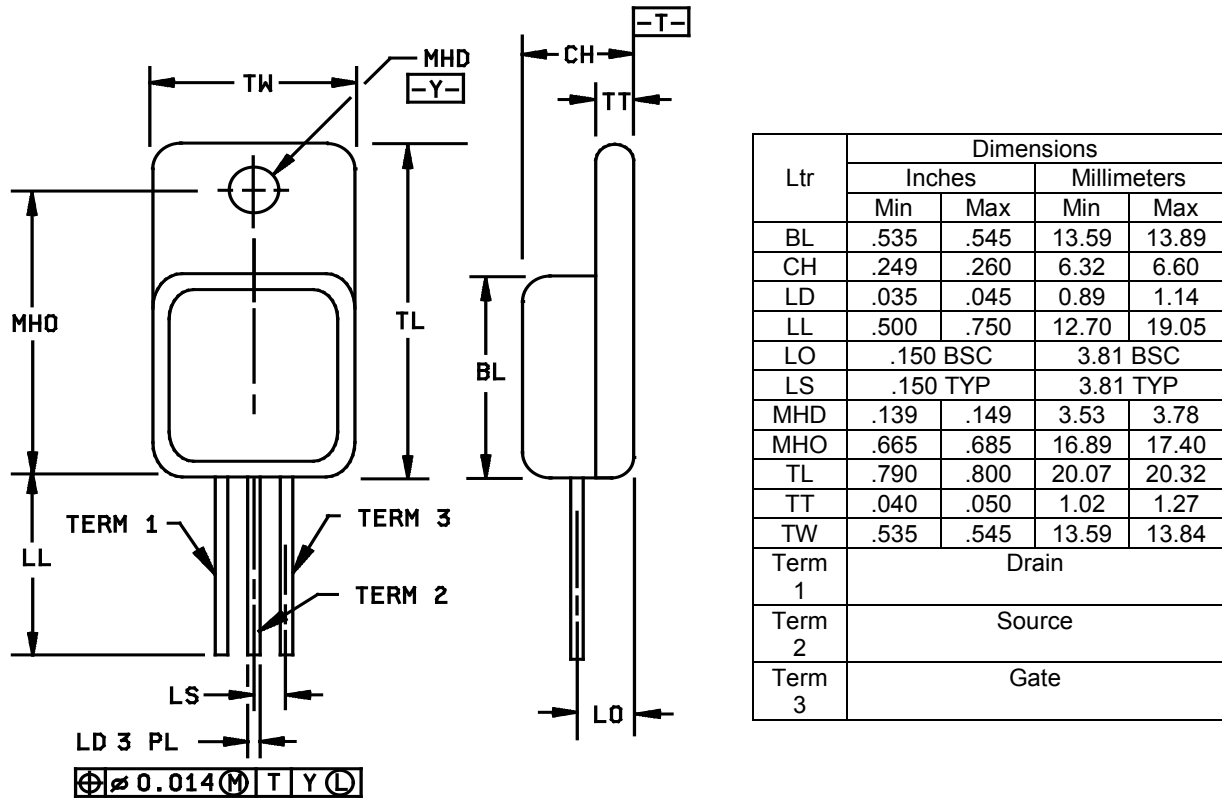
STANDARD

DEPARTMENT OF DEFENSE

MIL-STD-750 - Test Methods for Semiconductor Devices.

* (Copies of these documents are available online at <https://assist.daps.dla.mil/quicksearch> or <https://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. Unless otherwise noted herein or in the contract, 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.



SCHEMATIC

1N6828
1N6833

Terminal 1 = Anode 1
Terminal 2 = Common Cathode
Terminal 3 = Anode 3



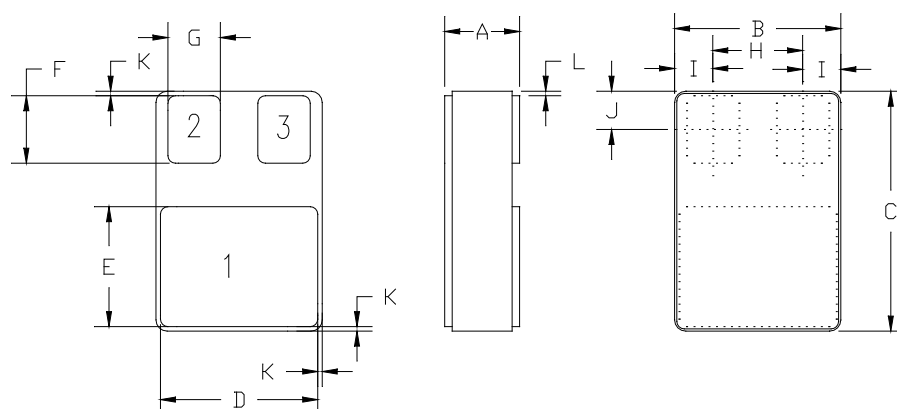
1N6828R
1N6833R

Terminal 1 = Cathode 1
Terminal 2 = Common Anode 2
Terminal 3 = Cathode 3

NOTES:

1. Dimensions are in inches.
2. Millimeters equivalents are given for general information only.
3. All terminals are isolated from case.
4. In accordance with AMSE Y14.5M, diameters are equivalent to $\varnothing$ x symbology.

FIGURE 1. Physical dimensions (similar to TO-254AA).



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.111	0.122	2.82	3.10
B	0.291	0.301	7.39	7.65
C	0.395	0.405	10.03	10.29
D	0.281	0.291	7.14	7.39
E	0.220	0.230	5.59	5.84
F	0.115	0.125	2.92	3.18
G	0.090	0.100	2.29	2.54
H	0.145	0.155	3.68	3.94
I	0.073 TYP.		1.85 TYP.	
J	0.083 TYP.		2.11 TYP.	
K	0.005 TYP.		0.13 TYP.	
L	0.015 TYP.		0.015 TYP.	

NOTES:

1. Dimensions are in inches.
2. Millimeters equivalents are given for general information only.
3. Terminal 1 is cathode.
4. Terminal 2 and 3 is anode.

SCHEMATIC

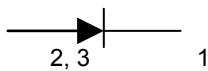


FIGURE 2. Physical dimensions and configuration (1N6828U3 and 1N6833U3, SMD.5).

3. REQUIREMENTS

* 3.1 General. The individual item requirements shall be as specified in MIL-PRF-19500 and as modified herein.

3.2 Qualification. Devices furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturer's list (QML) before contract award (see 4.2 and 6.3).

3.3 Abbreviations, symbols, and definitions. Abbreviations, symbols, and definitions used herein shall be as specified in MIL-PRF-19500.

3.4 Interface requirements and physical dimensions. The interface requirements and physical dimensions shall be as specified in MIL-PRF-19500 and on figure 1 (TO-254AA) and figure 2 (SMD .5) herein. Methods used for electrical isolation of the terminal feedthroughs shall employ materials that contain a minimum of 90 percent Al₂O₃ (ceramic). Examples of such construction techniques are metallized ceramic eyelets or ceramic walled packages.

* 3.4.1 Lead finish. Lead finish shall be in accordance with MIL-PRF-19500, MIL-STD-750, and herein. Where a choice of lead finish is desired, it shall be specified in the acquisition requirements (see 6.2).

3.4.2 Polarity. Polarity and terminal configuration shall be in accordance with figure 1 herein.

3.5 Marking. Marking shall be in accordance with MIL-PRF-19500.

3.6 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in 1.3 and 1.4 herein.

* 3.7 Electrical test requirements. The electrical test requirements shall as specified in table I.

3.8 Workmanship. Semiconductor devices shall be processed in such a manner as to be uniform in quality and shall be free from other defects that will affect life, serviceability, or appearance.

4. VERIFICATION

* 4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.2).

b. Screening (see 4.3)

* c. Conformance inspection (see 4.4 and tables I, II, and III).

* 4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-19500 and as specified herein.

4.3 Screening (JANS, JANTX, and JANTXV levels only). Screening shall be in accordance with MIL-PRF-19500 (table E-IV). The following measurements shall be made in accordance with table I herein. Devices that exceed the limits of table I herein shall not be acceptable.

Screen (see table E-IV of MIL-PRF-19500)	Measurement		
	JANS level	JANTX and JANTXV levels	JAN level
3a	Temperature cycling	Temperature cycling	Temperature cycling in accordance with JANTX level of MIL-PRF-19500
(1) 3c	Thermal impedance (see 4.3.2)	Thermal impedance (see 4.3.2)	Thermal impedance (see 4.3.2)
9	I_{RM1} and V_{FM2}	Not applicable	Not applicable
(2) 10	$T_J = +150^{\circ}\text{C}$; $V_R = 80$ percent of rated V_R (see 1.3 for dc conditions). or $T_J = 150^{\circ}\text{C}$, $V_R = 100$ percent of rated V_{RRM} dc (see 1.3) for half cycle sinusoidal. Method 1038 of MIL-STD-750, condition A. $t = 48$ hours min.	$T_J = +150^{\circ}\text{C}$; $V_R = 80$ percent of rated V_R (see 1.3 for dc conditions). or $T_J = +150^{\circ}\text{C}$, $V_R = 100$ percent of rated V_{RRM} dc (see 1.3) for half cycle sinusoidal. Method 1038 of MIL-STD-750, condition A. $t = 48$ hours min.	Not applicable
11	$\Delta I_{RM1} \leq 100$ percent of initial reading or 70 percent I_{RM1} whichever is greater. $\Delta V_{FM2} \leq \pm 50$ mV dc	I_{RM1} and V_{FM2}	Not applicable
12	See 4.3.1 $t = 240$ hours min	See 4.3.1 $t = 96$ hours	Not applicable
12 (a)	Alternative screen may be substituted at the manufacturer's option combining from step 10 to 12 (see 4.3.1) $t = 240$ hours min.	Alternative screen may be substituted at the manufacturer's option combining from step 10 to 12 (see 4.3.1) $t = 96$ hours min.	
13	Subgroup 2 and 3 of table I herein; $\Delta I_{RM1} \leq 100$ percent of initial reading or 70 percent I_{RM1} whichever is greater; $\Delta V_{FM2} \leq \pm 50$ mV dc	Subgroup 2 of table I herein; $\Delta I_{RM1} \leq 100$ percent of initial reading or 70 percent I_{RM1} whichever is greater; $\Delta V_{FM2} \leq \pm 50$ mV dc	Not applicable

- (1) Thermal impedance shall be performed any time after sealing provided temperature cycling is performed in accordance with MIL-PRF-19500, screen 3 prior to this thermal impedance.
- (2) Junction temperature (T_J) is not to exceed $+150^{\circ}\text{C}$ with V_{RWM} . T_J is affected by the device mounting thermal resistance when parasitic power is generated by the temperature dependent leakage current. Until this leakage becomes significant near thermal runaway, T_J remains approximately equal to T_A or T_L for $I_O = 0$.

4.3.1 Power burn-in conditions. Burn-in conditions are as follows: $T_J = +150^\circ\text{C}$, I_o = adjusted to achieve specified T_J . Forward burn-in conditions may be AC, DC, or half cycle Sinusoidal I_o . I_o and V_R adjusted by manufacturer to achieve the T_J minimum requirement (method 1038 of MIL-STD-750, condition A).

- a. Option 1 : Set T_J = Max operating temperature ($+150^\circ\text{C}$) based on the rated thermal resistance and variability of V_F .
- b. Option 2 : $T_J = +150^\circ\text{C}$ min, $T_C = +100^\circ\text{C}$ max, $V_R = 0.8$ rated V_{RRM} dc (see 1.3). Adjust dissipated power to insure that the minimum specified T_J is achieved.

* 4.3.2 Thermal impedance. The thermal impedance measurements shall be performed in accordance with method 3131 of MIL-STD-750 using the guidelines in that method for determining I_M , I_H , t_H , t_{MD} (and V_C where appropriate).

* 4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500 and as specified herein. If alternate screening is being performed in accordance with MIL-PRF-19500, a sample of screened devices shall be submitted to and pass the requirements of subgroups 1 and 2, of table I herein, inspection only (table E-VIb, group B, subgroup 1 is not required to be performed again if group B has already been satisfied in accordance with 4.4.2).

* 4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with table E-V of MIL-PRF-19500 and table I herein.

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in tables E-VIa (JANS) and E-VIb (JAN, JANTX, and JANTXV) of MIL-PRF-19500 and 4.4.2.1 and 4.4.2.2 herein. Electrical measurements (end-points) shall be in accordance with table I, group A, subgroup 2 herein. Delta measurements shall be in accordance with table III herein.

4.4.2.1 Group B inspection, table VIa (JANS) of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B3	4066	$I_{FSM} = 250 \text{ A}$; 10 surges of 8.3 ms each at 1 minute interval. Condition A, $T_A = +25^\circ\text{C}$; $V_R = 0$; $I_o = 0$.
B4	1036	Intermittent operation life for each diode is as follows: I_F or $I_o = 2 \text{ A}$ (minimum) $\Delta T_J \geq +85^\circ\text{C}$, $+15^\circ\text{C}$, -5°C for 2,000 cycles minimum.
B5	1038	Condition A, $T_J = +150^\circ\text{C}$, V_R at 80 percent of rated V_R .
B6		Not applicable.
B7		Peak reverse energy, see 4.5.3 and figure 3 herein. Test shall be performed on each subplot; sampling plan = 10, c = 0.

4.4.2.2 Group B inspection, table VIb (JAN, JANTX, and JANTXV) of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B2	4066	$I_{FSM} = 250$ A; 10 surges of 8.3 ms each at 1 minute interval. Condition A, $T_A = +25$ °C; $V_R = 0$; $I_O = 0$.
B3	1027	I_F or $I_O = 2$ A (minimum); $\Delta T_J \geq +85$ °C, + 15°C, - 5°C for 2,000 cycles minimum.
B5		Not applicable.
B7		Peak reverse energy, see 4.5.3 and figure 3 herein. Test shall be performed on each subplot; sampling plan = 10, c = 0.

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table VII of MIL-PRF-19500, and as follows. Electrical measurements (end-points) shall be in accordance with table I, group A, subgroup 2 herein. Delta measurements shall be in accordance with table III herein.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
C2	2036	Tension: Test condition A, weight = 10 lbs, t = 15 seconds.
C6	1026	I_F or $I_O = 2$ A (minimum); $\Delta T_J \geq +85$ °C, + 15 °C, - 5 °C for 6,000 cycles minimum.

4.4.4 Group E inspection. Group E inspection shall be conducted in accordance with MIL-PRF-19500 and the conditions for subgroup testing in table II herein. Electrical measurements (end-points) shall be in accordance with table I, group A, subgroup 2 herein.

4.5 Methods of inspection. Methods of inspection shall be as specified in the appropriate tables and as follows

4.5.1 Pulse measurements. Conditions for pulse measurement shall be as specified in section 4 of MIL-STD-750.

4.5.2 Thermal resistance. Thermal resistance shall be measured as follows in accordance with method 3101 of MIL-STD-750. Each diode leg shall be measured.

- a. I_M 10 mA.
- b. I_H 15-50 A.
- c. T_{MD} 100 μ s maximum.
- d. $R_{\theta JC}$ 2.3 °C/W.

4.5.3 Peak reverse energy test. The peak reverse energy test is to be performed using the circuit as shown on figure 3 or equivalent. The rectifier under test must be capable of absorbing the reverse energy, as defined: $I_{RSM} = 2$ A minimum, $L = 260$ μ H; 1N6828, 1N6828 R and 1N6828U3: $V_{RSM} = 120$ V minimum; 1N6833, 1N6833R and 1N6833U3: $V_{RSM} = 240$ V minimum.

TABLE I. Group A inspection. 1/ 2/

Inspection	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 1</u>						
Visual and mechanical inspection	2071					
<u>Subgroup 2</u>						
Thermal impedance	3101	See 4.3.2	$Z_{\theta JX}$		2	°C/W
Forward voltage	4011					
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		$I_{FM} = 5 \text{ A (pk) pulsed (see 4.5.1)}$	V_{FM1}		0.86 0.86	V dc V dc
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		$I_{FM} = 10 \text{ A (pk) pulsed (see 4.5.1)}$	V_{FM2}		1 1	V dc V dc
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		$I_{FM} = 15 \text{ A (pk) pulsed (see 4.5.1)}$	V_{FM3}		1.1 1.1	V dc V dc
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		$I_{FM} = 20 \text{ A (pk) pulsed (see 4.5.1)}$	V_{FM4}		1.2 1.2	V dc V dc
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		$I_{FM} = 30 \text{ A (pk) pulsed (see 4.5.1)}$	V_{FM5}		1.37 1.37	V dc V dc
Reverse current leakage	4016	DC method, (see 4.5.1)	I_{RM1}			
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		$V_R = 100 \text{ V dc}$			15	μA dc
		$V_R = 200 \text{ V dc}$			20	μA dc

See footnotes at end of table.

TABLE I. Group A inspection - Continued. 1/ 2/

Inspection	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 3</u>						
High temperature operation:		T _A = +100°C				
Reverse current leakage	4016	DC method, pulsed (see 4.5.1)	I _{RM2}			
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3		V _R = 100 V dc V _R = 200 V dc			1.5 1.5	mA dc mA dc
Low temperature operation:		T _A = -55°C				
Forward voltage	4011	Pulsed (see 4.5.1) I _F = 10 A (pk)	V _{FM6}		1.15	V dc
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3						
Forward voltage	4011	Pulsed (see 4.5.1) I _F = 15 A (pk)	V _{FM7}			
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3					1.25 1.25	V dc V dc
<u>Subgroup 4</u>						
Capacitance	4001	V _R = 10 V dc; .01 ≤ f ≤ 1MHz, V _{SIG} = 50 mV (p-p) (max)	C _J			
1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3					220 220	pF pF
<u>Subgroup 5</u>						
Dielectric withstand	1016	V _R = 600 V dc; All leads shorted; measure current from leads to case.	D _{WV}		10	μA
<u>Subgroup 6</u>						
Surge	4066	Condition A, T _A = +25°C, I _{FSM} = 250 A, 25 surges of 8.3 ms each at 1 minute intervals. V _R = 0; I _O = 0				
Electrical measurements		See table I, group A, subgroup 2				
<u>Subgroup 7</u>						
Not applicable						

1/ For sampling plan, see MIL-PRF-19500.2/ Each individual diode.

MIL-PRF-19500/671A

* TABLE II. Group E inspection (all quality levels) for qualification only. 1/

Inspection	MIL-STD-750		Qualification Inspection
	Method	Conditions	
<u>Subgroup 1</u>			
Thermal shock (temperature cycling)	1051	500 cycles. Condition C	45 devices, c = 0
Hermetic seal	1071		
Electrical measurements		See table I, group A, subgroup 2	
<u>Subgroup 2</u>			
Steady-state reverse bias	1038	Condition A, t = 1,000 hours, $T_J = +150\text{ }^{\circ}\text{C}$; $V_R = 80$ percent of rated V_{RWM}	45 devices, c = 0
Electrical measurements		See table I, group A, subgroup 2	
<u>Subgroup 3</u>			
Not applicable			
<u>Subgroup 4</u>			
Thermal impedance curves		See table E-IX of MIL-PRF-19500, group E, subgroup 4	
<u>Subgroups 5 and 6</u>			
Not applicable			

1/ For initial design and process change verification only (one time testing).

TABLE III. Group B, C, and E, delta measurements 1/ 2/ 3/ 4/

Step	Inspection	MIL-STD-750		Symbol	Limits		Unit
		Method	Conditions		Min	Max	
1	Forward voltage 1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3	4011	$I_F = 15$ A (pk) pulsed (see 4.5.1)	ΔV_{FM3}		± 50 ± 50	mV mV
2	Reverse current leakage 1N6828, 1N6828R, 1N6828U3 1N6833, 1N6833R, 1N6833U3	4016	pulsed (see 4.5.1) DC method $V_R = 100$ V dc $V_R = 200$ V dc	ΔI_{RM1}		70 percent of I_{R1} or 100 percent of initial reading, which ever is greater.	
3	Thermal impedance	3101	See 4.4.1	$Z_{\theta JX}$		2	$^{\circ}\text{C/W}$

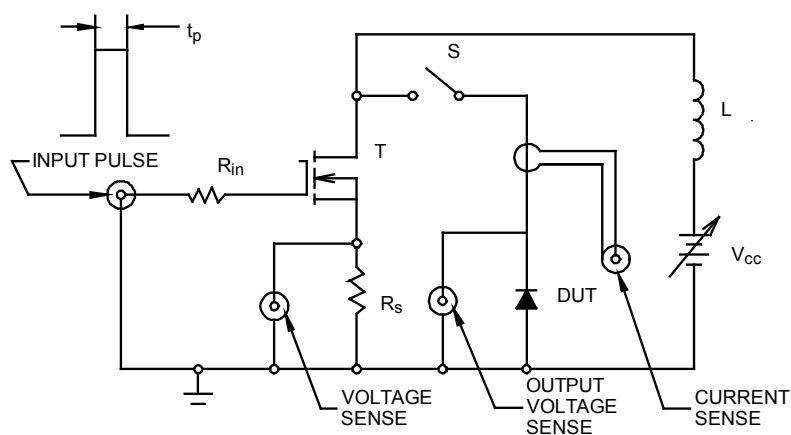
1/ Each individual diode.

2/ The delta measurements for table E-VIa (JANS) of MIL-PRF-19500 are as follows:

- a. Subgroup 4, see table E-III herein, steps 1, 2, and 3.
- b. Subgroup 5, see table E-III herein, steps 1 and 2

3/ The delta measurements for table E-VIb (JAN, JANTX, and JANTXV) of MIL-PRF-19500 are as follows:
Subgroup 3, see table III herein, steps 1, 2, and 3.

4/ The delta measurements for table E-VII of MIL-PRF-19500 are as follows: Subgroup 6, see table III herein,
steps 1, 2, and 3 for all levels.



Input pulse
 $V_G = 10 \text{ V}$
 $R_G = 50 \text{ ohms}$
 $P. W. \approx 30 \mu\text{s}$
 Duty cycle ≤ 1 percent

$R_{in} = 50 \text{ ohms, 1 watt}$
 $R_s = 0.1 \text{ ohms, 1 watt}$
 $V_{cc} \approx 10 \text{ volts}$
 $L = 260 \mu\text{H}$
 $T = \text{IRF130 / 2N6756 or equivalent}$

PROCEDURES:

With S open, adjust pulse width to test current of 2 amps across R_s .
 Close S, verify test current with current sense.
 Read peak output voltage (see 4.5.3).

FIGURE 3. Peak reverse energy test circuit.

5. PACKAGING

* 5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the Military Service's system commands. 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

* (This section contains information of a general or explanatory nature that may be helpful, but is not mandatory. The notes specified in MIL-PRF-19500 are applicable to this specification.)

* 6.1 Intended use. Semiconductors 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 this specification.
- b. Packaging requirements. (See 5.1).
- c. Lead finish (see 3.4.1).
- d. Type designation and product assurance level.

* 6.3 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 19500) 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 orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DLA Land and Maritime, ATTN: VQE, P.O. Box 3990, Columbus, OH 43218-3990 or e-mail vqe.chief@dlamail. An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at <https://assist.daps.dla.mil>.

* 6.4 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:
Army - CR
Navy - EC
Air Force - 85
NASA - NA
DLA - CC

Preparing activity:
DLA - CC

(Project 5961-2011-082)

* 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 <https://assist.daps.dla.mil>.