

The documentation and process conversion measures necessary to comply with this revision shall be completed by 14 August 2023.

INCH-POUND

MIL-PRF-19500/434F
W/AMENDMENT 2
14 April 2023
SUPERSEDING
MIL-PRF-19500/434F
W/AMENDMENT 1
2 March 2018

PERFORMANCE SPECIFICATION SHEET

SEMICONDUCTOR DEVICE, DIODE, SILICON, UNIPOLAR TRANSIENT VOLTAGE SUPPRESSOR,
TYPES 1N5610 THROUGH 1N5613, THROUGH-HOLE AND SURFACE MOUNT PACKAGES,
QUALITY LEVELS 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 1,500 watt, peak, pulse power, silicon, transient, voltage suppressor diodes. Four levels of product assurance (JAN, JANTX, JANTXV, and JANS) are provided for each device as specified in [MIL-PRF-19500](#).

1.2 Physical dimensions. The device package outline is an axial leaded through hole package in accordance with [figure 1](#) and round end-cap surface mount package in accordance with [figure 2](#).

1.3 Maximum ratings. Maximum ratings are as shown in columns 5 through 8 of the [electrical characteristics and ratings table](#) herein, and as follows:

- a. $P_{M(AV)} = 3.0 \text{ W}$ (derate at $20 \text{ mW}/^{\circ}\text{C}$ above $T_A = +25^{\circ}\text{C}$) (see [figure 3](#)).
- b. $P_{PP} = 1,500 \text{ W}$ (see [figure 4](#)) at $t_p = 1.0 \text{ ms}$.
- c. $I_{FSM} = 150 \text{ A (pk)}$ at $t_p = 8.33 \text{ ms}$ ($T_A = +25^{\circ}\text{C}$).
- d. $-55^{\circ}\text{C} \leq T_J \leq +175^{\circ}\text{C}$ (ambient), $-55^{\circ}\text{C} \leq T_{STG} \leq +175^{\circ}\text{C}$ (ambient).

1.4 Primary electrical characteristics-at $T_A = +25^{\circ}\text{C}$. Primary electrical characteristics are shown in columns 2 and 4 of the [electrical characteristics and ratings table](#) herein.

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.dla.mil>.

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1.5 Part or Identifying Number (PIN). The PIN is in accordance with [MIL-PRF-19500](#), and as specified herein. See [6.4](#) for PIN construction example and [6.5](#) for a list of available PINs.

1.5.1 JAN certification mark and quality level for encapsulated devices. The quality level designators for encapsulated devices that are applicable for this specification sheet from the lowest to the highest level are as follows: "JAN", "JANTX", "JANTXV" and "JANS".

1.5.2 Device type. The designation system for the device types of diode covered by this specification sheet are as follows.

1.5.2.1 First number and first letter symbols. The diode of this specification sheet use the first number and letter symbols "1N".

1.5.2.2 Second number symbols. The second number symbols for the diode covered by this specification sheet are as follows: "5610", "5611", "5612", and "5613".

1.5.3 Package designators. The suffix symbols (or lack thereof) that designate the package outline for the devices covered by this specification sheet are as follows:

	A blank package designators indicates a round body, wire terminal axial package (see figure 1).
US	Indicates a surface mount, square endcap package (see figure 2).

1.5.4 Lead finish. The lead finishes applicable to this specification sheet are listed on [QML-19500](#).

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections [3](#) and [4](#) 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](#) and [4](#) 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 cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

[MIL-PRF-19500](#) – Semiconductor Devices, General Specification for.

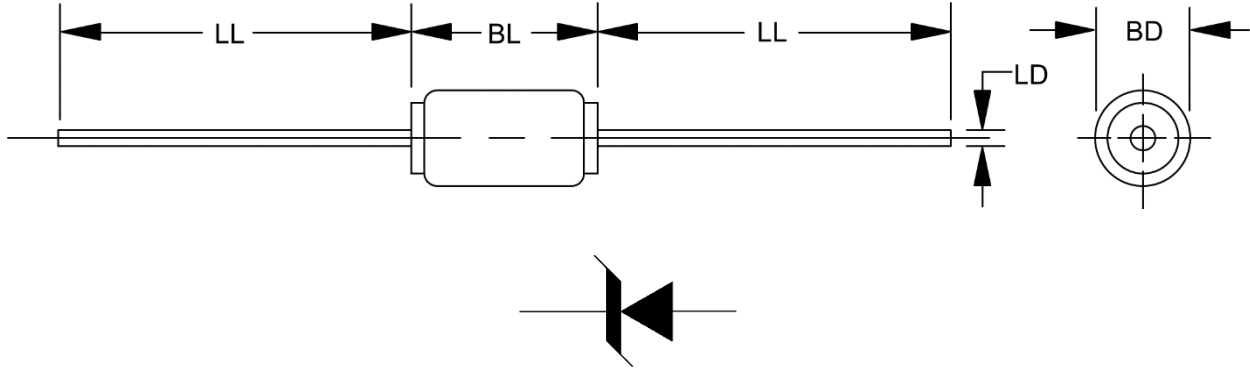
DEPARTMENT OF DEFENSE STANDARDS

[MIL-STD-750](#) – Test Methods For Semiconductor Devices.

(Copies of these documents are available online at <https://quicksearch.dla.mil>).

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.

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SCHEMATIC SYMBOL

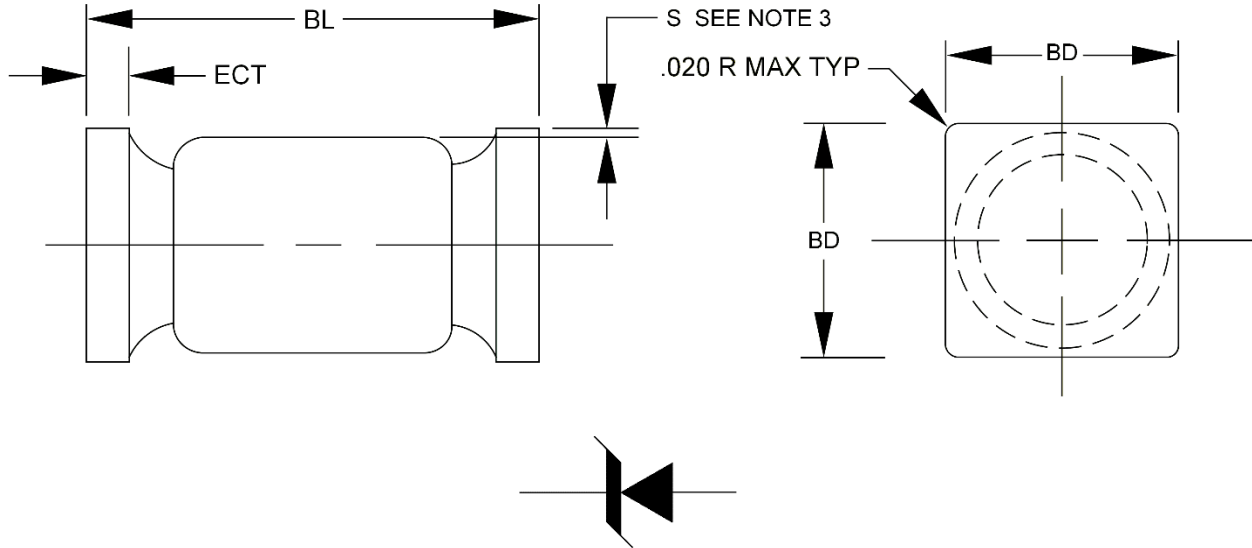
Symbol	Dimensions				Notes
	inch	inch	mm	mm	
	Min	Max	Min	Max	
BD	.150	.185	3.81	4.70	2
BL	.160	.375	4.06	9.53	2
LD	.037	.042	0.94	1.07	3
LL	.900	1.300	22.86	33.02	
LU		.050		1.27	4

NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Dimension BD shall be measured at the largest diameter. Package contour optional within dimensions BD and length BL.
3. Dimensions are pre-solder dip.
4. Within this zone lead diameter may vary to allow for lead finishes and irregularities other than heat slugs.

FIGURE 1. Physical dimensions for round body, axial leaded devices.

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SCHEMATIC SYMBOL

Symbol	Dimensions				Notes
	inch	inch	mm	mm	
	Min	Max	Min	Max	
BD	.150	.185	3.81	4.70	2
BL	.160	.375	4.06	9.53	2
ECT	.037	.042	0.94	1.07	3
S	.900	1.300	22.86	33.02	

NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Dimensions are pre-solder dip.
3. Dimension S is optional however the glass body diameter shall not exceed endcap diameter.

FIGURE 2. Physical dimensions for round body, square end-cap surface mount (US) devices.

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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 manufacturers 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](#) and as follows:

$I_{(BR)}$	Reverse breakdown current at a specified condition.
$V_{C(max)}$	Maximum clamping voltage. The maximum peak voltage appearing across the device when subjected to the peak pulse current I_{PP} .

3.4 Interface and physical dimensions. Interface and physical dimensions shall be as specified in [MIL-PRF-19500](#), on [figures 1](#) and [2](#) herein.

3.4.1 Lead finish. Lead finish shall be solderable 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 document (see [6.2](#)).

3.4.2 Metallurgical bond construction. These devices shall be constructed to comply with the requirements of a category I metallurgical bond of [MIL-PRF-19500](#), and herein.

3.5 Marking. Marking shall be in accordance with [MIL-PRF-19500](#). All device marking (including all marking which is omitted on the device), except for polarity and serial numbers, shall appear on the unit package used as the initial protection for delivery.

3.5.1 Device marking abbreviations. The prefixes JAN, JANTX, JANTXV, and JANS may be abbreviated as J, JX, JV, and JS respectively. (For example: The PIN JAN1N5610US may be reduced to J5610). Color coding shall not be permitted for part identification.

3.5.2 Surface mount devices (US versions). For US suffix devices only, all marking, except polarity may be omitted from the body, but shall be retained on the initial container.

3.5.3 Polarity. The polarity of all types shall be indicated with a contrasting color band to denote the cathode end. Alternatively, for US suffix devices, a minimum of three contrasting color dots spaced around the periphery on the cathode end may be used.

3.6 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in [1.3](#), [1.4](#), and the [electrical characteristics and ratings table](#) herein.

3.7 Electrical test requirements. The electrical test requirements shall be the subgroups 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.

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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, tables I, II, III, and IV).

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

4.2.1 Group E qualification. Group E inspection shall be performed for qualification or re-qualification only. In case qualification was awarded to a prior revision of the specification sheet that did not require the performance of table IV tests, the tests specified in table IV herein that were not performed in the prior revision shall be performed on the first inspection lot of this revision to maintain qualification.

4.3 Screening (JANS, JANTX, and JANTXV levels only). Screening shall be in accordance with table E-IV of MIL-PRF-19500, and as specified herein. 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	Measurements for JANS level	Measurements for JANTX and JANTXV levels
3	$T_{(high)} = +175^{\circ}\text{C}$	$T_{(high)} = +175^{\circ}\text{C}$
9	Not applicable	Not applicable
10	Not applicable	Not applicable
11	Not applicable	Not applicable
12	See 4.5.1	See 4.5.1
13	Interim electrical, delta, and table I, subgroup 2 and 3 electrical parameters not applicable for this screen (performed in screen 12).	Interim electrical, delta, and table I, subgroup 2 and 3 electrical parameters not applicable for this screen (performed in screen 12).

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with MIL-PRF-19500 and table I herein. End-point electrical measurements shall be in accordance with the applicable steps of table II herein.

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VIA (JANS) and table E-VIB (JAN, JANTX, and JANTXV) of MIL-PRF-19500 and herein. Electrical measurements (end-points) and delta measurements shall be in accordance with the applicable steps of table II herein.

4.4.2.1 Quality level JANS, table E-VIA of MIL-PRF-19500.

Subgroup	Method	Conditions
B5	1027	$T_A = +100^{\circ}\text{C}$ (min); 1 ms pulse only (see 4.5.2 and 4.5.3.b).

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4.4.2.2 Quality levels JAN, JANTX, and JANTXV, table E-VIB of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B3	1027	See 4.5.1, 1 ms pulse only (see 4.5.3.b).

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VII of MIL-PRF-19500. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps of table II herein.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
C2	2036	Axial leaded devices only. The details for terminal strength are as follows: Tension (condition A): Weight = 20 pounds (9.1 kg); $t = 15 \pm 3$ s. Lead fatigue (condition E). Applicable for all axial leaded types. Terminal strength testing is not applicable to US devices.
C2	2038	US surface mount devices only. The details for end-cap bond integrity shall be as follows: Tab pull (condition B). Weight = 12 pounds (5.44 kg); $t = 15$ seconds minimum.
C6	1026	The condition for steady-state operation life is as follows: See 4.5.1, 1 ms pulse only (see 4.5.3.b).
C8	4071	The conditions for temperature coefficient of breakdown voltage are as follows: $I_{(BR)} =$ column 3 of table III, $T_1 = +25^\circ\text{C} \pm 3^\circ\text{C}$, $T_2 = T_1 + 100^\circ\text{C}$, sample size $n = 22$, $c = 0$.
C8		See 4.5.3. The conditions for maximum peak pulse current are as follows: Ten pulses in accordance with 4.5.3.a, sample size $n = 22$, $c = 0$.

4.4.4 Group E inspection. Group E inspection shall be conducted in accordance with the conditions specified for subgroup testing in appendix E, table E-IX of MIL-PRF-19500 and as specified in table IV herein. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2 herein.

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

4.5.1 Power burn-in and steady-state operation life test conditions. The test conditions and order of events shall be as follows:

- a. Pulse in accordance with 4.5.3.b. Pulse 20 times for screening and group B and 100 times for group C at $T_A = +25^\circ\text{C}$.
- b. Read and record I_D and $V_{(BR)}$ at $T_A = +25^\circ\text{C}$, remove defective devices and record the number of failures.
- c. Apply the working peak reverse voltage (V_{WM}) (column 4 of table III) at $T_A = +125^\circ\text{C}$ as follows:
 - (1) For 96 hours (JANTX and JANTXV) and 240 hours (JANS) for the screening test.
 - (2) For 340 hours (JANTX, and JANTXV) for group B steady-state operation life test.
 - (3) For 1,000 hours for group C steady-state operation life test.
- d. Read and record I_D and $V_{(BR)}$ at $T_A = +25^\circ\text{C}$. Devices with $\Delta I_D > 50$ percent (100 percent for steady-state operation life) of the initial reading or $1 \mu\text{A}$ dc, whichever is greater, or $\Delta V_{(BR)} > \pm 2$ percent (± 5 percent for steady-state operation life) initial value shall be considered defective. Remove defective devices and record the number of failures.

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4.5.1.1 Group C steady-state operation life test (alternate procedure). When the group B 340 hour life test is continued on test to 1,000 hours to satisfy the group C life test requirements, the test shall be performed as given in 4.5.1 with the following exceptions:

- a. See 4.5.1, step a shall be moved and performed following step d.
- b. See 4.5.1, step d shall be repeated after step a is performed.

4.5.2 Accelerated steady-state operation life (JANS). This test shall be conducted with the devices subjected to the breakdown current specified in column 10 of table III in the reverse polarity for 96 +8, -4 hours. At the beginning of the test and at the end the time period, the devices shall be temperature stabilized at $T_A = +25^{\circ}\text{C}$ and subjected to pulse conditions at the rate of one pulse per minute (max) for 10 pulses in accordance with 4.5.3 as specified.

4.5.3 Maximum peak pulse current (I_{PP}). The peak pulse currents specified in column 7 of table III shall be applied in the reverse direction while simultaneously maintaining a reverse bias voltage of not less than the applicable voltage specified in column 4 of table III. The clamping voltage (V_C) shall be as specified in 4.5.4. The peak pulse current shall be applied with a current versus time waveform (1 pulse per minute maximum) as follows:

- a. Pulse current shall reach 100 percent of I_{PP} at $t \leq 8 \mu\text{s}$ and decay to 50 percent of I_{PP} at $t \geq 20 \mu\text{s}$ for $t_p = 20 \mu\text{s}$, (see figure 5).
- b. Pulse current shall reach 100 percent of I_{PP} at $t \leq 10 \mu\text{s}$ and decay to 50 percent of I_{PP} at $t \geq 1 \text{ ms}$ for $t_p = 1 \text{ ms}$ (see figure 6).

NOTE: Tolerance on time (t) shall be -0, +10 percent.

See 4.5.3.a (20 μs pulse only) ten pulses, sample size $n = 22$, $c = 0$.

4.5.4 Clamping voltage. The peak pulse clamping voltage shall be measured across the diode in a 1 ms time interval. The response detector shall demonstrate equipment accuracy of ± 3 percent.

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TABLE I. Group A inspection.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limit	Limit	Unit
	Method	Conditions		Min <u>2/</u>	Max <u>2/</u>	
<u>Subgroup 1</u>						
Visual and mechanical examination	2071					
<u>Subgroup 2</u>						
Standby current	4016	Condition A or B, $V_R = V_{WM}$ (column 4 of table III)	I_D		Column 5	μA dc
Breakdown voltage	4022	$t_P \leq 300$ ms, duty cycle ≤ 2 percent, $I_{(BR)} =$ column 3 of table III	$V_{(BR)1}$	Column 2		V dc
<u>Subgroup 3</u>						
Breakdown voltage (minimum)	4022	$t_P \leq 300$ ms, duty cycle ≤ 2 percent, $I_{(BR)} =$ column 3 of table III , $T_A = -55^\circ C$	$V_{(BR)2}$	Column 9		V dc
<u>Subgroup 4</u>						
Clamping voltage maximum (pulsed)		See 4.5.4 , $I_{PP} =$ column 7 of table III , $t_P = 1.0$ ms (see 4.5.3.b)	$V_{C(max)}$		Column 6	V (pk)
Forward voltage	4011	$I_{FM} = 100$ A (pk), $t_P = 8.3$ ms duty (max), cycle = 4 pulses per minute (max)	V_{FM}		4.8	V (pk)
<u>Subgroup 5</u>						
Not applicable						
<u>Subgroup 6</u>						
Forward surge current	4066	Condition A, $I_{FSM} = 150$ A (pk), one pulse, half sinewave (8.3 ms), $I_F = 0$, $V_{WM} = 0$, $T_A = +25^\circ C$				
End-point electrical measurements		See table II , steps 1 and 2				

1/ For sampling plan, see [MIL-PRF-19500](#).

2/ Column references are to [table III](#).

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TABLE II. Groups B and C electrical measurements. 1/ 2/ 3/ 4/ 5/

Step	Inspection	MIL-STD-750		Symbol	Limits	Limits	Unit
		Method	Conditions		Min	Max	
1.	Standby current	4016	Condition A or B, $V_R = V_{WM}$ column 4 of table III	I_D		Column 5	μA dc
2.	Breakdown voltage	4022	$t_p \leq 300$ ms, duty cycle ≤ 2 percent, $I_{(BR)} =$ column 3 of table III	$V_{(BR)}$	Column 2		V dc
3.	Forward voltage	4011	$I_{FM} = 100$ A (pk), $t_p = 8.3$ ms (max), duty cycle = 4 pulses per minute (max)	V_{FM}		4.8	V (pk)
4.	Standby current	4016	Condition A or B; $V_R = V_{WM}$ (column 4 of table III)	ΔI_D	100 percent of initial reading or 20 percent of column 5 of table III , whichever is greater.		
5.	Breakdown voltage	4022	$t_p \leq 300$ ms, duty cycle ≤ 2 percent, $I_{(BR)} =$ column 3 of table III	$\Delta V_{(BR)}$		± 5 percent of initial value	
6.	Clamping voltage		See 4.5.4 , $t_p = 1.0$ ms (see 4.5.3.b); $I_{PP} =$ column 7 of table III	$V_{C(max)}$		Column 6	V (pk)

- 1/ Devices which exceed the [table I](#) limits for this test shall not be accepted.
- 2/ The electrical measurements taken during group B inspections for quality level JANS (table E-VIA of [MIL-PRF-19500](#)) shall be as follows:
- In addition to the measurements specified for subgroup 3, the measurements of steps 1, 2, 3, and 6 of this table shall also be taken.
 - In addition to the measurements specified for subgroup 7, the measurements of steps 1, 2, 3, 4 and 5 of this table shall also be taken.
- 3/ The electrical measurements taken during group B inspections for quality level JANTX and JANTXV (table E-VIB of [MIL-PRF-19500](#)) shall be as follows:
- In addition to the measurements specified for subgroup 2, the measurements of steps 1 and 2 of this table shall also be taken.
 - In addition to the measurements specified for subgroup 6, the measurements of steps 1, 2, 4 and 5 of this table shall also be taken.
- 4/ The electrical measurements taken during group C inspections for all quality levels (table E-V of [MIL-PRF-19500](#)) shall be as follows:
- In addition to the measurements specified for subgroups 2 and 3 for quality level JANS the measurements of steps 1, 2 and 3 of this table shall also be taken.
 - In addition to the measurements specified for subgroups 2 and 3 for quality levels JANTX and JANTXV the measurements of steps 1 and 2 of this table shall also be taken.
 - In addition to the measurements specified for subgroup 8, the measurements of steps 1 and 2 of this table shall also be taken.
- 5/ Column references are to [table III](#).

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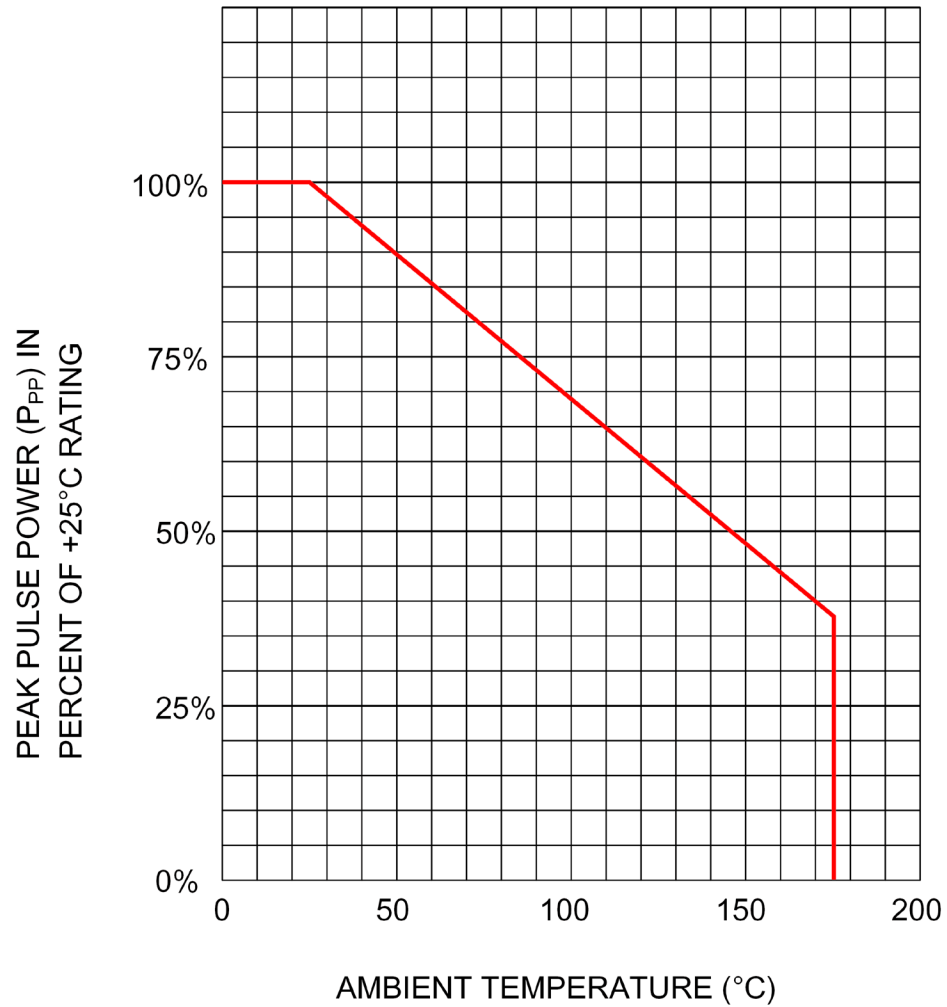
TABLE III. Electrical characteristics and ratings.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7		Column 8	Column 9	Column 10
Type	$V_{(BR)}$ Breakdown voltage at $I_{(BR)}$ minimum	$I_{(BR)}$ Test current $t_p \leq 300$ ms cycle ≤ 2 percent	V_{WM} Working peak voltage	I_D Maximum standby current at V_{WM}	$V_{C(max)}$ Maximum clamping voltage at I_{PP} for $t_P = 1$ ms	Maximum peak pulse current		$\alpha_{V(BR)}$ Maximum temperature coefficient of $V_{(BR)}$	$V_{(BR)}$ Minimum breakdown voltage at $I_{(BR)}$ $T_A = -55^\circ\text{C}$	$I_{(BR)}$ Breakdown current maximum dc current $T_A = +25^\circ\text{C}$
						$t_P = 20 \mu\text{s}$ $t_r = 8 \mu\text{s}$	$t_P = 1$ ms $t_r = 10 \mu\text{s}$			
	V dc	mA dc	V (pk)	μA dc	V (pk)	A (pk)	A (pk)	%/ $^\circ\text{C}$	V dc	mA dc
1N5610	33.0	1	30.5	5	47.6	193	32.0	.093	30.2	75.0
1N5611	43.7	1	40.3	5	63.5	136	24.0	.094	40.0	53.0
1N5612	54.0	1	49.0	5	78.5	116	19.0	.096	48.5	43.0
1N5613	191.0	1	175.0	5	265.0	33	5.7	.100	172.0	12.5

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TABLE IV. Group E inspection (all quality levels) for qualification or re-qualification only.

Inspection	MIL-STD-750		Sampling plan
	Method	Conditions	
<u>Subgroup 1</u>	1051	500 cycles, condition C, -55°C to +175°C. See table II . Steps 1, 2, 3, 4, and 5.	45 devices, c = 0
Temperature cycling			
Electrical measurements			
<u>Subgroup 2</u>			22 devices, c = 0
Life test			
Electrical measurements			
<u>Subgroup 4</u>			
Not applicable			
<u>Subgroup 5</u>			
Not applicable			
<u>Subgroup 6</u>			
Peak pulse current			
Electrical measurements			
<u>Subgroup 7</u>	2031	See 4.5.2 . I _{PP} shall be characterized by the supplier and this data shall be available to the government. Test shall be performed on each low and high voltage device for each structurally identical grouping. Test to failure. See table II , steps 1, 2, 3, 4, and 5.	3 devices, c = 0
Resistance to soldering heat			



NOTE: The pulse derating curve of maximum peak pulse power versus junction temperature has been included for reference purposes only.

FIGURE 3. Pulse derating curve.

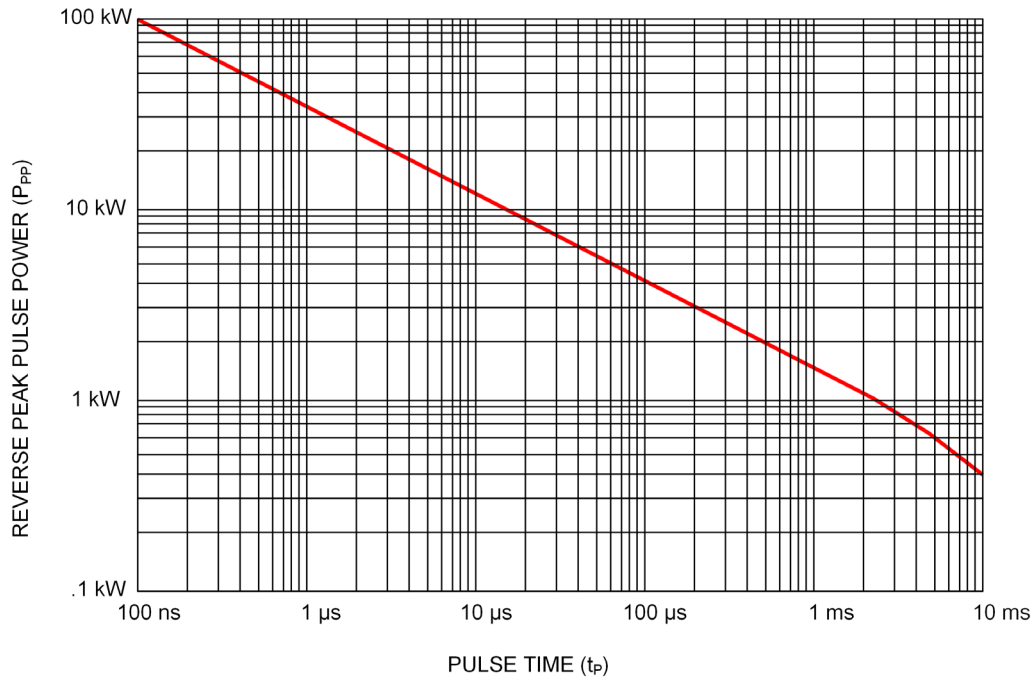


FIGURE 4. Peak pulse power versus pulse time.

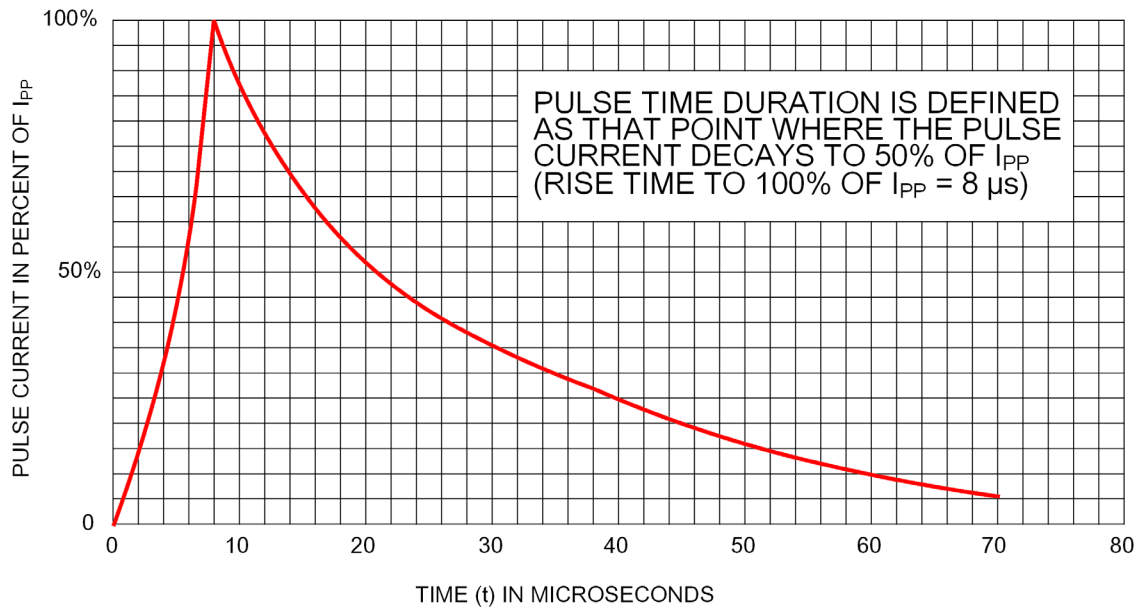


FIGURE 5. Current impulse waveform.

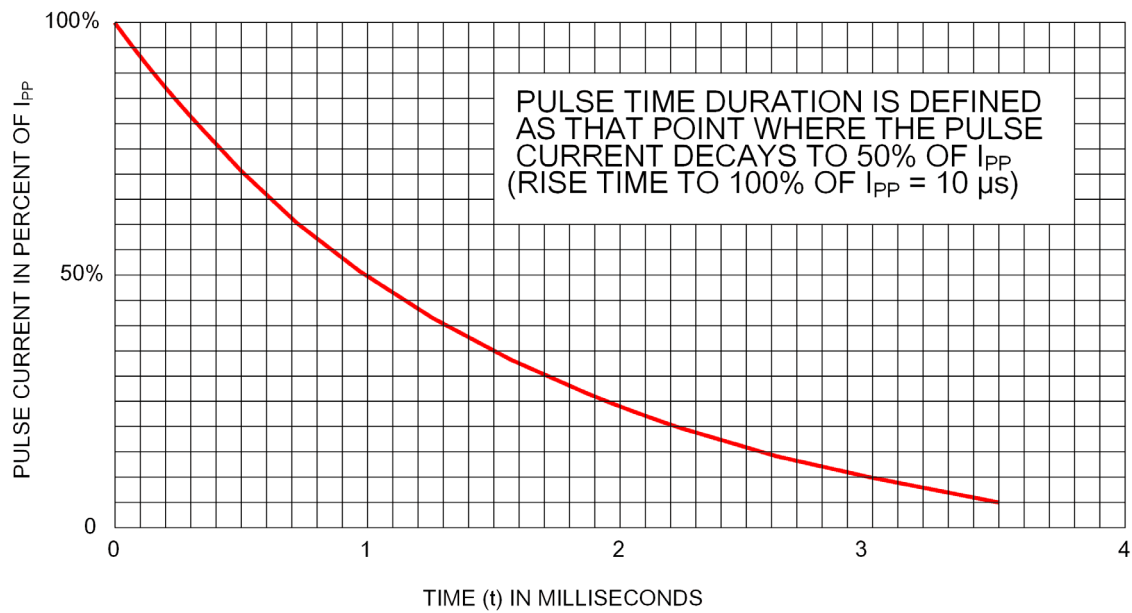


FIGURE 6. Current impulse waveform.

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.)

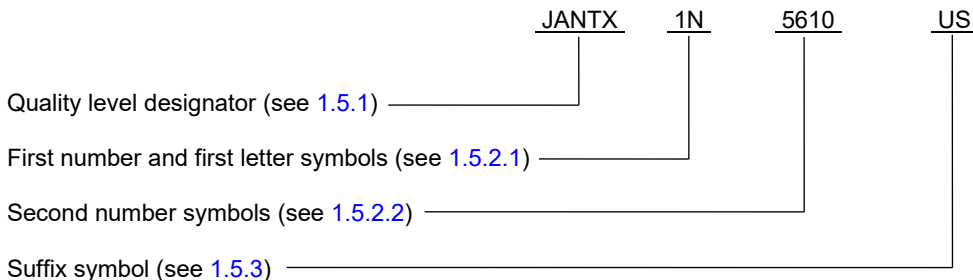
6.1 Intended use. Semiconductors conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

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. The complete PIN, see 1.5 and 6.5.

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@dla.mil. An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at <https://qpldocs.dla.mil>.

6.4 PIN construction example. The PINs for encapsulated devices are constructed using the following form.



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6.5 List of PINs. The following is a list of possible PINs available on this specification sheet.

PINs for devices of the base quality level	PINs for devices of the "TX" quality level	PINs for devices of the "TXV" quality level	PINs for devices of the "S" quality level
JAN1N5610	JANTX1N5610	JANTXV1N5610	JANS1N5610
JAN1N5611	JANTX1N5611	JANTXV1N5611	JANS1N5611
JAN1N5612	JANTX1N5612	JANTXV1N5612	JANS1N5612
JAN1N5613	JANTX1N5613	JANTXV1N5613	JANS1N5613
JAN1N5610US	JANTX1N5610US	JANTXV1N5610US	JANS1N5610US
JAN1N5611US	JANTX1N5611US	JANTXV1N5611US	JANS1N5611US
JAN1N5612US	JANTX1N5612US	JANTXV1N5612US	JANS1N5612US
JAN1N5613US	JANTX1N5613US	JANTXV1N5613US	JANS1N5613US

6.6 Substitution information. Device types 1N5555 through 1N5558 were previously covered under this specification sheet through MIL-S-19500/434A with Amendment 1 dated 5 March 1992. They were removed with the issuance of MIL-S-19500/434B dated 17 November 1992. Type numbers 1N5555 through 1N5558 are now covered under [MIL-PRF-19500/500](#).

6.7 Steady-state power rating. This rating is not relevant for most applications.

6.8 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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 previous issue.

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

Preparing activity:
DLA - CC

(Project 5961-2023-033)

Review activities:
Army - AR, AV, MI, SM
Navy - AS, MC
Air Force - 19

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.dla.mil>.