

## PERFORMANCE SPECIFICATION SHEET

RECTIFIER, SEMICONDUCTOR DEVICE, DIODE, SILICON, ULTRAFAST RECOVERY, POWER,  
TYPES 1N8255, 1N8256, 1N8257, 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, ultrafast recovery, low leakage, power rectifier diodes. Four levels of product assurance are provided for each encapsulated device type as specified in MIL-PRF-19500.

1.2 Package outlines. The device package outline for this specification sheet is an axial lead in accordance with [figure 1](#), and surface mount US in accordance with [figure 2](#).

1.3 Maximum ratings. Unless otherwise specified,  $T_A = +25^\circ\text{C}$ .

1.3.1 Ratings applicable to all Part or Identifying Numbers (PIN).  $T_{\text{STG}} = T_{\text{J(max)}} = -65^\circ\text{C}$  to  $+175^\circ\text{C}$ .

1.3.2 Ratings applicable to individual types.

Col. 1	Col. 2	Col. 3		Col. 4	Col. 5	Col. 6	Col. 7		Col. 8
Types	$V_{\text{RWM}}$	$I_{\text{O}}$	$I_{\text{O}}$	$I_{\text{FSM}}$	$t_{\text{rr}}$	$R_{\theta\text{JL}}$	$R_{\theta\text{JEC}}$ (5)		$T_{\text{J(max)}}$ and $T_{\text{STG}}$
		(1)	(2)				(3)	(4)	
	V	A		A(pk)	ns	$^\circ\text{C/W}$	$^\circ\text{C/W}$	$^\circ\text{C/W}$	$^\circ\text{C}$
1N8255, US, SUS	100	4.0	6.0	180	30	32	8.5	6.5	-65 to +175
1N8256, US, SUS	150	4.0	6.0	180	30	32	8.5	6.5	
1N8257, US, SUS	200	4.0	6.0	160	30	32	8.5	6.5	

- (1) Axial lead @  $T_L < +55^\circ\text{C}$ ,  $L = .375$  in. (9.52 mm) derate at 33.3 mA / $^\circ\text{C}$  above rated  $T_L$ .
- (2) Surface mount (US package),  $T_{\text{EC}} < +125^\circ\text{C}$  derate at 120 mA / $^\circ\text{C}$  above rated  $T_{\text{EC}}$ .  
Surface mount (SUS package),  $T_{\text{EC}} < +135^\circ\text{C}$  derate at 150 mA / $^\circ\text{C}$  above rated  $T_{\text{EC}}$ .
- (3)  $I_{\text{FSM}}$  at  $+25^\circ\text{C}$  operating at  $I_{\text{O}}$  tp = 8.3 ms sine wave.
- (4)  $R_{\theta\text{JL}}$  at  $L = .375$  in. (9.52 mm).
- (5) See [figure 3](#) for thermal impedance curves.

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](mailto: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>.

MIL-PRF-19500/774

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

Types	$V_{BR}$ at 100 $\mu\text{A}$ , pulse $\leq 20$ ms	$I_{R1}$ at $V_R = V_{RWM}$ $T_A = +25^\circ\text{C}$ , pulsed $V_R \leq 20$ ms	$I_{R2}$ at $V_R = V_{RWM}$ $T_A = +150^\circ\text{C}$ , pulsed $V_R \leq 20$ ms
	Volts	$\mu\text{A}$	$\mu\text{A}$
1N8255, US, SUS	110	2.0	100
1N8256, US, SUS	160	2.0	100
1N8257, US, SUS	210	2.0	100

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. The JAN certification mark and 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 covered by this specification sheet are as follows.

1.5.2.1 First number and first letter symbols. The devices 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 devices covered by this specification sheet are as follows: "8255", "8256", and "8257".

1.5.3 Suffix symbols. The following suffix symbols are incorporated in the PIN as applicable.

	A blank suffix symbol indicates an axial diode package (see figure 1).
US	Indicates an axial surface mount package with square endcaps (see figure 2).
SUS	Indicates an axial surface mount package with square endcaps, but with a size that is smaller than the US package herein (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 <http://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.

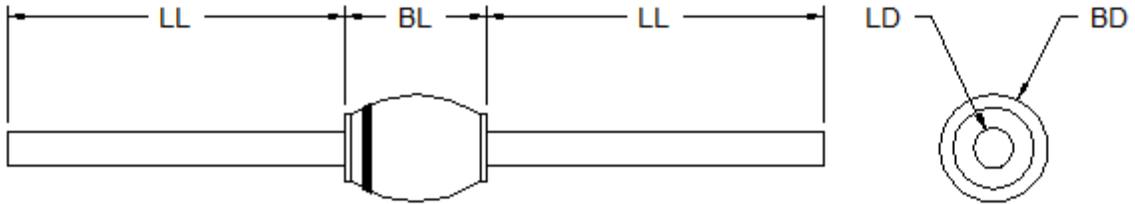
## 3. REQUIREMENTS

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 and as follows:

EC . . . . . End-cap.  
I<sub>(BR)</sub> . . . . . Current for testing breakdown voltage.  
V<sub>fr</sub> . . . . . Forward recovery voltage.

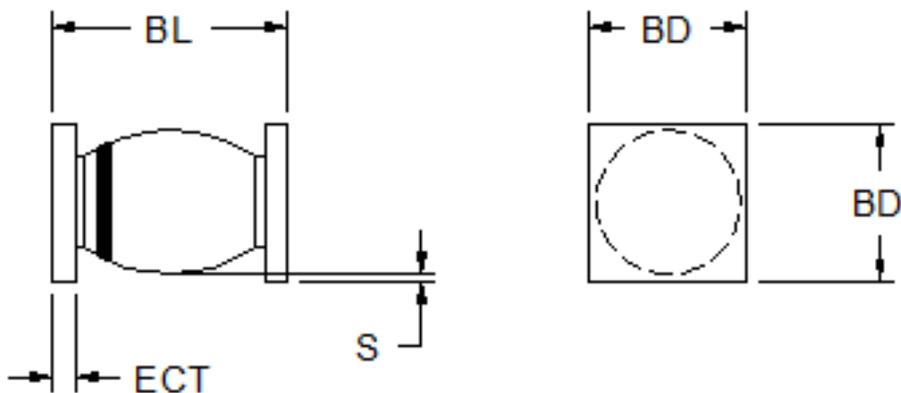


Ltr.	Dimensions - axial lead device				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
BD	---	.092	---	2.34	4
BL	.140	.160	3.56	4.06	3
LD	.027	.031	.686	.787	3
LL	1.00	---	25.4	---	

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Dimension BL shall include the entire body including slugs and sections of the lead over which the diameter is uncontrolled. This uncontrolled area is defined as the zone between the edge of the diode body and extending .050 inch (1.27 mm) maximum onto the leads.
4. Dimension BD shall be measured at the largest diameter.
5. In accordance with ASME Y14.5M, diameters are equivalent to  $\phi x$  symbology.

FIGURE 1. Physical dimensions.



Ltr.	Dimensions - US device				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
	BD	.093	.100	2.36	
BL	.190	.210	4.83	5.33	
US package					
BL	.150	.165	3.81	4.19	
SUS package					
ECT	.022	.028	.559	.711	
S	.003	---	.076	---	4

## NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Dimensions are pre-solder dip.
4. Minimum clearance of diode body to mounting surface on all orientations.
5. Cathode marking to be either in color band or a color dot on the face of the end tab.
6. Color dots will be .020 inch (0.51 mm) diameter minimum and shall not lie within .015 inch (0.51 mm) of the mounting surface.
7. End Tabs may have a corner radius of .010" maximum
8. In accordance with ASME Y14.5M, diameters are equivalent to  $\phi$ x symbology.

FIGURE 2. Physical dimensions of US surface mount family.

3.4 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-19500, and figures 1 and 2 herein.

3.4.1 Diode construction. These devices shall be constructed utilizing high temperature metallurgical bonding between both sides of the silicon die and terminal pins. Metallurgical bond shall be in accordance with the requirements of category I, appendix A, MIL-PRF-19500. No point contacts. Silver button dumet design is prohibited.

3.4.1.1 Surface mount. US and SUS version devices shall be structurally identical to the non-surface mount devices except for lead terminations.

3.4.2 Lead finish. Unless otherwise specified, lead or end-cap finish shall be solderable in accordance with MIL-PRF-19500, MIL-STD-750, and herein. When solder alloy is used for finish, the maximum lead temperature is limited to 175°C maximum. Where a choice of finish is desired, it shall be specified in the acquisition document (see 6.2).

3.5 Marking. Devices shall be marked as specified in MIL-PRF-19500.

3.5.1 Marking of US and SUS versions. For US and SUS versions only, all marking may be omitted from the device except for the cathode marking. All marking which is omitted from the body of the devices shall appear on the label of the initial container.

3.5.2 Polarity. The polarity shall be indicated with a contrasting color band to denote the cathode end. For US and SUS devices a minimum of three evenly spaced contrasting color dots around the periphery of the cathode end may be used. No color coding will be permitted.

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

3.7 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table I herein.

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 y and Tables I, II, and III).

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

4.2.1 Group E inspection. Group E inspection shall be performed for qualification or requalification only.

4.3 Screening (JANS, JANTXV and JANTX levels only). Screening shall be in accordance with appendix E, 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  $y$  herein shall not be acceptable.

Screen (see appendix E, table E-IV of MIL-PRF-19500)	JANS level	JANTXV and JANTX level
(1) 3c	Thermal impedance (see <a href="#">4.3.1</a> )	Thermal impedance (see <a href="#">4.3.1</a> )
9	Group A, subgroup 2	Not required
10	Method 1038 of MIL-STD-750, condition A, $T_A = 150^\circ\text{C}$	Method 1038 of MIL-STD-750, condition A $T_A = 150^\circ\text{C}$
11	Group A, subgroup 2, delta limits in accordance with <a href="#">Table III</a>	Group A subgroup 2, delta limits in accordance with $y$
12	Burn-In (see <a href="#">4.3.2</a> ), $t = 240$ hours min	Burn-In (see <a href="#">4.3.2</a> ), $t = 96$ hours min
13	Group A, subgroup 2 and 3, Delta Limits in accordance with <a href="#">Table III</a> , scope display evaluation (see <a href="#">4.5.2</a> )	Group A, subgroup 2, delta limits in accordance with <a href="#">Table III</a> , scope display evaluation (see <a href="#">4.5.2</a> ).

- (1) Shall be performed anytime after temperature cycling, screen 3a; TX and TXV levels do not need to be repeated in screening requirements.

4.3.1 Thermal impedance. The thermal impedance measurements shall be performed in accordance with method 3101 of MIL-STD-750 using the guidelines in that method for determining  $I_M$ ,  $I_H$ ,  $t_H$ , and K factor where appropriate. The limits will be statistically derived,  $Z_{\theta JX} = 3.0$  °C/W max. See table E-IX of MIL-PRF-19500, group E, and [table II](#), subgroup 4 herein.

4.3.2 Free air power burn-in conditions. Power burn-in conditions are as follows (see [4.5.3](#) and [4.5.3.1](#)):  $I_{O(\min)} = 1\text{A}$ ,  $V_r(\text{pk}) = \text{rated } V_{\text{rwm}}$ ,  $T_A = 55^\circ\text{C}$  maximum. Test conditions shall be in accordance with method 1038 of MIL-STD-750, condition B. Adjust  $I_O$  or  $T_A$  to achieve the required  $T_J$ .  $T_J = 135^\circ\text{C}$  minimum.

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500 and as specified herein.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with MIL-PRF-19500, and [table I](#) herein. The  $Z_{\theta JX}$  end-point shall be derived by the supplier and approved by the qualifying activity. This  $Z_{\theta JX}$  end-point shall also be documented in the qualification report.

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the tests and conditions specified for subgroup testing in appendix E, table E-VIa (JANS) and table E-VIb (JAN, JANTX, and JANTXV) of MIL-PRF-19500 and herein.

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

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B3	4066	$I_{FSM}$ = rated (see 1.3.2); ten surges of 8.3 ms each at 1 minute intervals, superimposed on $I_O = 1.0A$ , $V_{RWM}$ = rated, see col. 2 of 1.3.2. $T_A=25^\circ C$ .
B4	1037	$I_O = 1 A$ minimum; $V_R =$ rated $V_{RWM}$ (see 1.3.2); 2,000 cycles. End-points shall include delta limits in accordance with Table III.
B5	1027	$I_O = 1 A$ minimum, $t = 1,000$ hrs, $V_R =$ rated $V_{RWM}$ (see col. 2 of 1.3.2) adjust $I_O$ or $T_A$ to achieve $T_J = 175^\circ C$ minimum; $f = 50 - 60$ Hz. $T_A = 55^\circ C$ max. For irradiated devices, include $t_{rr}$ as an end-point measurement. End-points shall include Delta limits in accordance with Table III.
B8	4065	Peak reverse power: For 1N8255 - 1N8257, $PRM \geq 636 W$ for square wave in accordance with TM 4065 ( $PRM \geq 1,000 W$ for half sine-wave). Test shall be performed on each subplot; sampling plan: $n = 10$ , $c = 0$ , electrical end-points, see table I, subgroup 2 herein.

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

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B3	4066	$I_{FSM}$ = rated (see 1.3.2); ten surges of 8.3 ms each at 1 minute intervals, superimposed on $I_O = 1.0A$ , $V_{RWM}$ = rated, see col. 2 of 1.3.2. $T_A=25^\circ C$ .
B3	1027	$I_O = 1 A$ minimum; apply $V_R =$ rated $V_{RWM}$ (see col. 2 of 1.3.2) adjust $I_O$ to achieve $T_J = 150^\circ C$ minimum; $f = 50 - 60$ Hz. $T_A = 55^\circ C$ max. For irradiated devices, include $t_{rr}$ as an end-point measurement. End-points shall include delta limits in accordance with Table III.

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in Appendix E, Table E-VII of MIL-PRF-19500. See Table III herein for delta limits when applicable.

4.4.3.1 Group C inspection, appendix E, table E-VII of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
C2	2036	Axial devices, Condition A, 6 pounds, $t = 15s$ . Condition E, 8 oz
C2	2038	US and SUS devices, Condition B, 6 pounds, $t = 15s$ . Condition E, 8 oz, (lead fatigue is not applicable to US and SUS diodes). Suitable fixtures shall be used to pull the end-caps in a manner that does not aid construction.
C5	4081	$R_{\theta JL}$ (maximum) see col. 6 of 1.3.2 and 4.3.1 herein. $L = .375$ inch (9.53mm). For surface mount devices (US and SUS), $R_{\theta JEC}$ , see col.7 of 1.3.2 and 4.3.1 herein.
C6	1026	$I_O = 1 A$ minimum; apply $V_R =$ rated $V_{RWM}$ (see col. 2 of 1.3.2) adjust $I_O$ to achieve $T_J = 150^\circ C$ minimum; $f = 50 - 60$ Hz. $T_A = 55^\circ C$ max. For irradiated devices, include $t_r$ as an end-point measurement. End-points shall include delta limits in accordance with Table III.

4.4.4 Group E inspection. Group E inspection shall be conducted in accordance with the conditions specified for subgroup testing in [table II](#), table E-IX of MIL-PRF-19500 Appendix E and as specified herein. See [table III](#) herein for delta limits when applicable.

4.5 Methods of inspection. Methods of inspection shall be as specified in the appropriate tables 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 Scope display evaluation. Scope display evaluation shall be stable in accordance with method 4023 of MIL-STD-750, condition A, Scope display may be performed on ATE (automatic test equipment) for screening only with the approval of the qualifying activity. Scope display in [table I](#), subgroup 4 shall be performed on a curve tracer. The reverse current ( $I_{BR}$ ) shall be 100  $\mu$ A peak.

4.5.3 Burn-in and life tests. These tests shall be conducted with a half-sine waveform of the specified peak voltage impressed across the diode in the reverse direction followed by a half-sine waveform of the specified average rectified current. The forward conduction angle of the rectified current shall be neither greater than 180 degrees nor less than 150 degrees.

4.5.3.1 Burn-in. The use of a current limiting or ballast resistor is permitted provided that each DUT still sees the  $I_o$  and that the required voltage, where applicable, is maintained through-out the burn-in period. Use method 3100 of MIL-STD-750 to measure  $T_J$ .

4.5.4 Thermal resistance. Thermal resistance measurement shall be performed in accordance with method 4081 of MIL-STD-750 using the guidelines in that method for determining  $I_M$ ,  $I_H$ , and  $t_H$ . See table E-IX of MIL-PRF-19500, subgroup 4. Forced moving air or draft shall not be permitted across the devices during test.

TABLE I. Group A inspection.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Max 1N8255 1N8256	Max 1N8257	
<u>Subgroup 1</u> Visual and mechanical examination	2071					
<u>Subgroup 2</u> Thermal impedance <u>2/</u>	3101	See 4.3.1, $T_H = 50$ ms, $I_H = 12A$ , $I_M = 10mA$ , $t_{MD} = 70$ us Pulsed (see 4.5.1)	$Z_{\theta JX}$	3.4	3.4	$^{\circ}C/W$
Forward voltage	4011	$I_{FM} = 1A$	$V_{FM1}$	.810	.820	V
		$I_{FM} = 3A$	$V_{FM2}$	.865	.890	V
		$I_{FM} = 4A$	$V_{FM3}$	.875	.940	V
		$I_{FM} = 6A$	$V_{FM4}$	.925	1.00	V
Reverse current	4016	Pulsed (see 4.5.1) $V_R = \text{rated}$	$I_{R1}$	2.0	2.0	$\mu A$
Breakdown voltage	4021	$I_{(BR)} = 100 \mu A$ , pulse $\leq 20$ ms 1N8255 1N8256 1N8257	$V_{(BR)1}$	110 min		V
				160 min		V
				210 min		V
<u>Subgroup 3</u> High temperature operation: Reverse current	4016	$T_A = +150^{\circ}C$ Pulsed, (see 4.5.1) $V_R = \text{rated}$ (1.3.2, col 2)	$I_{R2}$	100	100	$\mu A$
Low-temperature operation: Forward voltage	4011	$T_A = -65^{\circ}C$ Pulsed, (see 4.5.1) $I_{FM} = 4A$	$V_{FM9}$	1.25	1.25	V

See footnotes at end of table.

TABLE I. Group A inspection - Continued.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Max 1N8255 1N8256	Max 1N8257	
<u>Subgroup 4</u>						
Reverse recovery time	4031	Condition A $I_F = 1.0 \text{ A}$ , $I_{RM} = 1.0 \text{ A}$ $i_{(REC)} = 0.1 \text{ A}$	$t_{rr}$	30	30	ns
Forward Recovery Time	4026	$I_F = 50 \text{ mA}$ , the test is measured at $V_{FR} = 1.1 \times V_F$ at $3 \times t_{fr}$	$t_{fr}$	15	15	ns
Capacitance	4001	$f = 1 \text{ MHz}$ ; $V_r = 10 \text{ V}$	$C_j$	50	45	pF
Scope display evaluation	4023	See 4.5.2, $n = 116$ , $c = 0$				
<u>Subgroup 5</u>						
Not applicable						
<u>Subgroup 6</u>						
Forward surge	4066	Condition A, ten surges of 8.3 ms each at 1 minute intervals superimposed on $I_O = 1.0 \text{ A}$ ; $V_{RWM} = \text{rated}$ (see 1.3.2); $T_A = +25^\circ\text{C}$	$I_{FSM}$	180	160	A
Electrical measurements		See table I, subgroup				
<u>Subgroup 7</u>						
Not applicable						

1/ For sampling plan, see MIL-PRF-19500.

2/ This test required for the following end-point measurements only:

Group B, subgroups 2 and 3 (JAN, JANTX, JANTXV).

Group B, subgroups 3 and 4 (JANS).

Group C, subgroups 2 and 6.

Group E, subgroup 1.

TABLE II. Group E inspection (all quality levels) for qualification and requalification only.

Inspection	MIL-STD-750		Sampling plan
	Method	Conditions	
<u>Subgroup 1</u>			45 devices c = 0
Thermal shock (liquid to liquid)	1056	20 cycles, Condition D except low temperature shall be achieved using liquid nitrogen (-195°C). Perform a visual for cracked glass.	
Temperature cycling (air to air)	1051	-65°C to +175°C, 500 cycles.	
Hermetic seal <sup>1/</sup>	1071		
Electrical measurement		See <a href="#">table I</a> , subgroup 2 and <a href="#">table III</a> , steps 1 and 2.	
<u>Subgroup 2</u>			45 devices c = 0
Steady-state dc blocking life	1048	t = 1,000 hours; T <sub>A</sub> = +150°C; V <sub>R</sub> dc = 80 - 85 percent rated V <sub>RWM</sub> (see <a href="#">1.3.2</a> ).	
Electrical measurement		See <a href="#">table I</a> , subgroup 2 herein, except Z <sub>0JX</sub> need not to be performed, and <a href="#">table III</a> , steps 1 and 2 herein. For irradiated devices, include t <sub>fr</sub> as an end-point measurement.	
<u>Subgroup 4</u>			Sample size N/A
Thermal impedance curves		See MIL-PRF-19500.	
<u>Subgroup 6</u>			
ESD	1020		
<u>Subgroup 8</u>			n = 45
Peak reverse power	4065	Peak reverse power, (PRM) = shall be characterized by the supplier and this data shall be available to the Government. Test shall be performed on each subplot.	
Electrical measurement		During the PRM test, the voltage (VBR) shall be monitored to verify it has not collapsed. Any collapse in VBR during or after the PRM test or rise in leakage current (IR) after the test that exceeds IR1 in <a href="#">table I</a> shall be considered a failure to that level of applied PRM. Progressively higher levels of PRM shall be applied until failure occurs on all devices within the chosen sample size.	
<u>Subgroup 9</u>			n = 45
Resistance to glass cracking	1057	Step stress to destruction by increasing cycles or up to a maximum of 25 cycles.	
<u>Subgroup 10</u>			22 devices c = 0
Forward surge	4066	Condition A, IFSM = rated (see <a href="#">1.3.2</a> ); ten surges of 8.3 ms each at 1 minute intervals superimposed on IO = IO1 rated (see <a href="#">1.3.2</a> ); VRWM = rated (see <a href="#">1.3.2</a> ); T <sub>A</sub> = + 25°C.	
Electrical measurement		See <a href="#">table I</a> , subgroup 2.	

1/ Opaque glass double plug non-cavity axial lead diodes may use TM2068 in lieu of TM1071.

TABLE III. Group A, B, C, and E delta requirements. <sup>1/</sup>

Step	Inspection	MIL-STD-750		Symbol	Limit	Unit
		Method	Conditions			
1.	Forward voltage	4011	Pulsed, (see 4.5.1) $I_{FM} = 3 \text{ A(pk)}$	$\Delta V_{FM2}$	$\pm 50 \text{ mV dc change}$ from initial value.	
2.	Reverse current	4016	Pulsed, (see 4.5.1) $V_R = \text{rated}$	$\Delta I_R$	$\pm 100 \text{ percent}$ or $\pm 200 \text{ nA change}$ from initial reading, whichever is greater.	

<sup>1/</sup> Devices which exceed the [table I](#) limits for this test shall not be accepted.

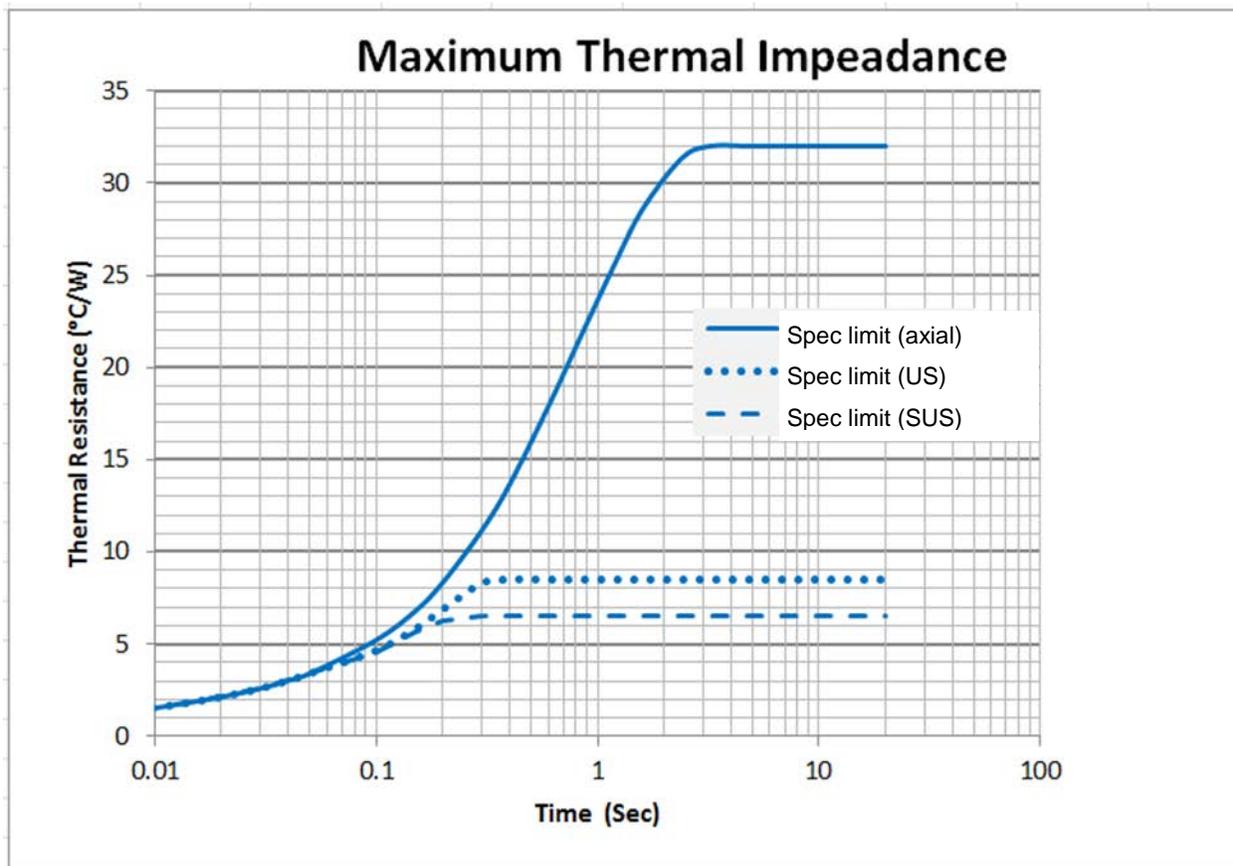


FIGURE 3. Thermal impedance  $Z_{\theta JX}$  maximum 3.40 °C/W @ 50 mS

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.)

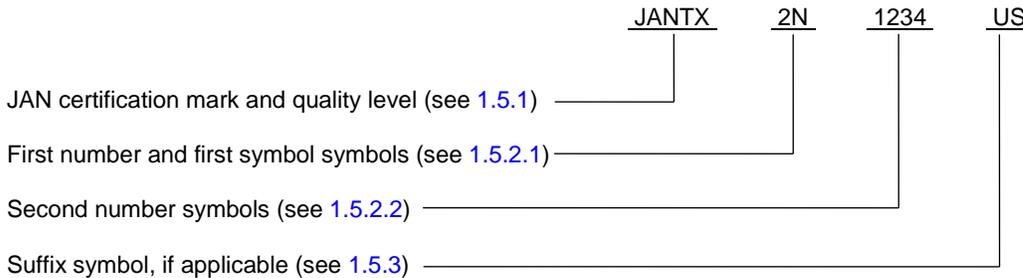
6.1 Intended use. Semiconductors conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

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 3.4.2).
- d. The complete Part or Identifying Number (PIN), see 1.5.

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

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



6.5 PINs for encapsulated devices. The following is a list of possible PINs for encapsulated devices available on this specification sheet.

PINs for types 1N8255	PINs for types 1N8256	PINs for types 1N8257
JAN1N8255	JAN1N8256	JAN1N8257
JAN1N8255US	JAN1N8256US	JAN1N8257US
JAN1N8255SUS	JAN1N8256SUS	JAN1N8257SUS
JANTX1N8255	JANTX1N8256	JANTX1N8257
JANTX1N8255US	JANTX1N8256US	JANTX1N8257US
JANTX1N8255SUS	JANTX1N8256SUS	JANTX1N8257SUS
JANTXV1N8255	JANTXV1N8256	JANTXV1N8257
JANTXV1N8255US	JANTXV1N8256US	JANTXV1N8257US
JANTXV1N8255SUS	JANTXV1N8256SUS	JANTXV1N8257SUS
JANS1N8255	JANS1N8256	JANS1N8257
JANS1N8255US	JANS1N8256US	JANS1N8257US
JANS1N8255SUS	JANS1N8256SUS	JANS1N8257SUS

6.6 Request for new types and configurations. Requests for new device types or configurations for inclusions in this specification sheet should be submitted to: DLA Land and Maritime, ATTN: VAC, Post Office Box 3990, Columbus, OH 43218-3990 or by electronic mail at [Semiconductor@dla.mil](mailto:Semiconductor@dla.mil) or by facsimile (614) 693-1642 or DSN 850-6939.

Custodians:

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

Preparing activity:  
DLA - CC

(Project 5961-2015-043)

Review activities:

Army - AR, AV, MI, SM  
Navy - AS, MC  
Air Force - 19, 71, 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 <https://assist.dla.mil>.