

The documentation and process conversion measures necessary to comply with this revision shall be completed by 16 April 2014.

INCH-POUND

MIL-PRF-19500/610F  
16 January 2014  
SUPERSEDING  
MIL-PRF-19500/610E  
1 December 2003

## PERFORMANCE SPECIFICATION SHEET

SEMICONDUCTOR DEVICE, HERMETIC, DIODE, SILICON, SCHOTTKY BARRIER,  
TYPES 1N6677-1 AND 1N6677UR-1,  
JAN, JANTX, JANTXV, JANS, JANHC, AND JANKC

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, Schottky barrier diodes. Four levels of product assurance are provided for each encapsulated device types as specified in [MIL-PRF-19500](#), and two levels of product assurance for each unencapsulated device type die.

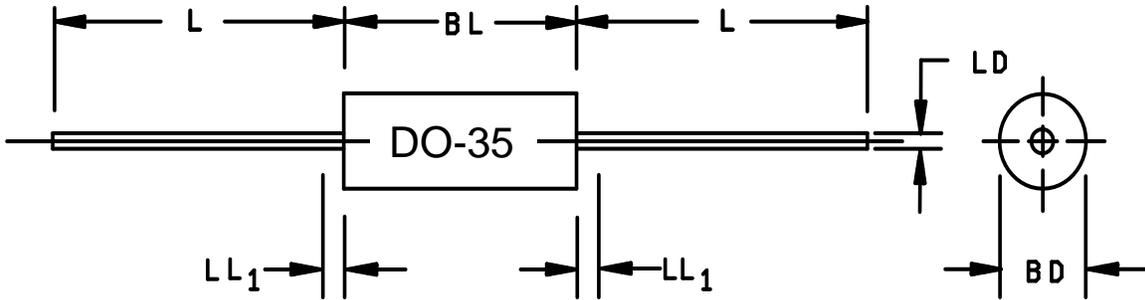
1.2 Physical dimensions. See [figure 1](#) (DO-35), [figure 2](#) (DO-213AA), and [figure 3](#) (JANHC and JANKC die) dimensions.

\* 1.3 Maximum ratings.

Types (1)	V <sub>RWM</sub>	I <sub>O1</sub> (2)	I <sub>FSM</sub>	T <sub>STG</sub>	T <sub>J</sub>
	V (pk)	mA dc	A (pk)	°C	°C
1N6677-1, 1N6677UR-1	40	200	5	-65 to +150	-65 to +125

\* (1) Maximum ratings for the 1N6677UR-1 are identical to the 1N6677-1.  
(2) For derating, see [figures 4](#) and [5](#).

Comments, suggestions, or questions on this document should be addressed to DLA Land and Maritime, 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>.

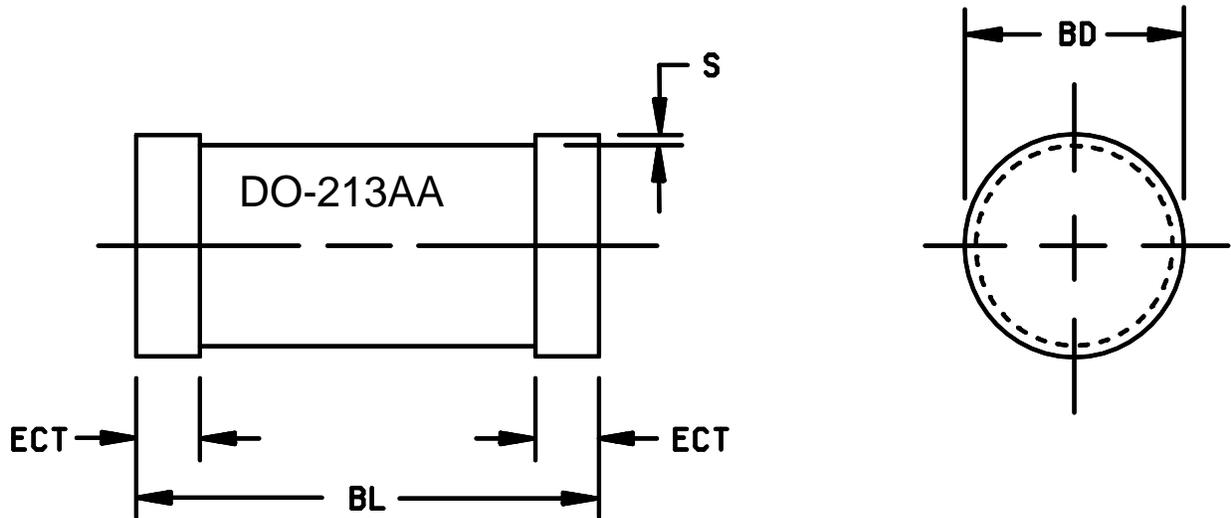


Symbol	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
LD	.018	.022	0.46	0.56	
BD	.055	.090	1.40	2.29	3
BL	.120	.200	3.05	5.08	3
L	1.000	1.500	25.40	38.10	
LL <sub>1</sub>		.050		1.27	4

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Package contour optional within BD and length L. Heat slugs, if any, shall be included within this cylinder but shall not be subject to minimum limit of BD.
4. Within this zone lead, diameter may vary to allow for lead finishes and irregularities other than heat slugs.
5. In accordance with ASME Y14.5M, diameters are equivalent to  $\phi x$  symbology.

FIGURE 1. Physical dimensions of 1N6677-1 (DO-35).

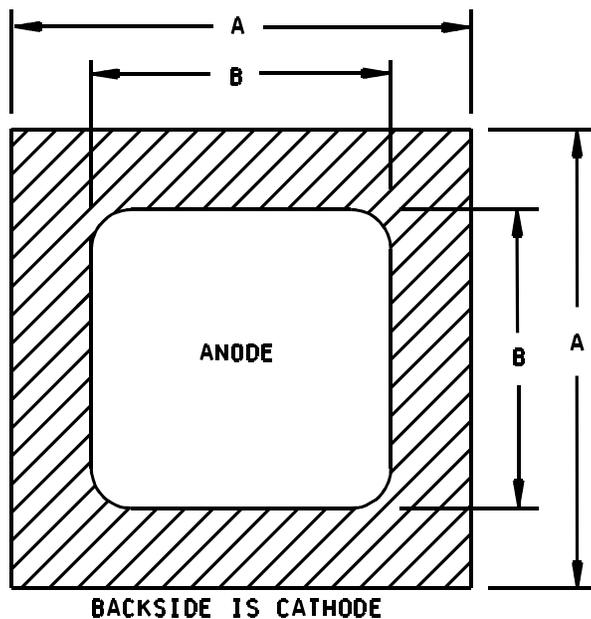


Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	.063	.067	1.60	1.70
ECT	.016	.022	0.41	0.56
BL	.130	.146	3.30	3.71
S	.001 min		0.03 min	

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.

FIGURE 2. Physical dimensions of surface mount family, 1N667UR-1 (DO-213AA).



A version

Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
	A	.021	.025	0.53
B	.013	.017	0.33	0.43

Design data

Metallization:  
 Top: (Anode)..... AL  
 Back: (Cathode)..... Au

AL thickness ..... 25,000 Å minimum  
 Gold thickness ..... 4,000 Å minimum  
 Chip thickness ..... 10 mils (0.254 mm) ± 2 mils (0.051 mm)

FIGURE 3. JANC (A-version) die dimensions.

MIL-PRF-19500/610F

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

Types	Max $V_{FM1}$	Max $V_{FM2}$	Max $V_{FM3}$	Max $I_{RM}$ $V_{RM} = 40\text{ V dc}$ pulsed method (see 4.5.1)		Max $R_{\theta JL}$ or $R_{\theta JEC}$ .375 inch (9.52 mm) lead (1) length or end cap	Max $Z_{\theta JX}$	Max $C_T$ $V_R = 0\text{ V dc}$
	$I_{FM} = 20\text{ mA}$	$I_{FM} = 200\text{ mA}$	$I_{FM} = 630\text{ mA}$	$T_J = +25^\circ\text{C}$ $I_{RM1}$	$T_J = +100^\circ\text{C}$ $I_{RM2}$			
	<u>V (pk)</u>	<u>V (pk)</u>	<u>V (pk)</u>	<u><math>\mu\text{A}</math></u>	<u>mA</u>	<u><math>^\circ\text{C/W}</math></u>	<u><math>^\circ\text{C/W}</math></u>	<u>pF</u>
1N6677-1	0.37	0.50	0.70	5.0	0.60	250	20	50
1N6677UR-1	0.37	0.50	0.70	5.0	0.60	100	20	50

(1) For thermal impedance curves, see figures 6 and 7.

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 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 cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

[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/> or <https://assist.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.

### 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 and physical dimensions. Interface and physical dimensions shall be as specified in [MIL-PRF-19500](#) and on [figures 1, 2, and 3](#) herein.

3.4.1 Lead material and finish. Lead material shall be copper clad steel with a minimum of 50 percent copper by weight. Lead finish shall be in accordance with [MIL-PRF-19500](#) and [MIL-STD-750](#). Where a choice of lead finish is desired, it shall be specified in the acquisition document (see [6.2](#)).

3.4.2 Diode construction. All devices shall be metallurgically bonded, double plug construction in accordance with the requirements of category I or II (see [MIL-PRF-19500](#)).

3.4.2.1 Surface mount. The UR version shall be considered structurally identical to the non-UR version except for lead attach.

3.5 Marking. Marking shall be in accordance with [MIL-PRF-19500](#).

3.5.1 Marking for UR devices. UR-suffix devices only, all marking (except for 3.6) may be omitted from the body, but shall be retained on the initial container.

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

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

3.8 Electrical test requirements. The electrical test requirements shall be the subgroups specified in [table I](#).

3.9 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](#)).

4.2 Qualification inspection. Qualification inspection shall be in accordance with [table II](#) herein and [MIL-PRF-19500](#).

4.2.1 Group E inspection. Group E inspection shall be conducted in accordance with [MIL-PRF-19500](#) and 4.4.4 herein.

4.2.2 JANHC and JANKC devices. Qualification for JANC devices shall be in accordance with appendix G of [MIL-PRF-19500](#). This testing may be performed on a TO-5 package in lieu of the axial leaded package.

4.3 Screening (JAN, JANTX, JANTXV, and JANS 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.

4.3 Screening (JAN, JANTX, JANTXV, and JANS levels only) - Continued.

Screen (see table E-IV of <a href="#">MIL-PRF-19500</a> )	Measurement		
	JANS level	JANTX and JANTXV level	JAN level
1a	Required	Not required	Not required
1b	Required	Required (JANTXV only)	Not required
2	Not required	Not required	Not required
3a	Required	Required	Required in accordance with <a href="#">MIL-PRF-19500</a> , JANTX level
3b	Not applicable	Not applicable	Not applicable
(1) 3c	Required (see <a href="#">4.3.3</a> )	Required (see <a href="#">4.3.3</a> )	Required (see <a href="#">4.3.3</a> )
4, 5, 6, and 7a	Not applicable	Not applicable	Not applicable
7b	Required	Required	Not required
8	Required	Not required	Not required
9	Required, $I_{R1}$ and $V_{F2}$	Not applicable	Not applicable
(2) 10	Required, $T_A = +110^\circ\text{C}$ ; $V_{RWM} = 40 \text{ V(pk)}$ ; $I_O = 0$ , half sine wave, $f = 60 \text{ Hz}$	Required, $T_A = +110^\circ\text{C}$ ; $V_{RWM} = 40 \text{ V(pk)}$ ; $I_O = 0$ , half sine wave, $f = 60 \text{ Hz}$	Not applicable
11	Required, $\Delta I_{R1} \leq 100$ percent of initial reading or $2 \mu\text{A}$ whichever is greater. $\Delta V_{FM2} \leq \pm 50 \text{ mV dc}$ .	Required, $I_{R1}$ and $V_{FM2}$	Not applicable
12	Required, See <a href="#">4.3.2</a>	Required, See <a href="#">4.3.2</a> , $t = 48 \text{ hours}$	Not applicable
13	Required, Subgroup 2 of <a href="#">table I</a> herein; $\Delta I_{R1} \leq 100$ percent of initial reading or $2 \mu\text{A}$ whichever is greater; $V_{FM2} \leq \pm 50 \text{ mV dc}$ .	Required, Subgroup 2 of <a href="#">table I</a> herein; $\Delta I_{R1} \leq 100$ percent of initial reading or $2 \mu\text{A}$ whichever is greater; $V_{FM2} \leq \pm 50 \text{ mV dc}$ .	Not applicable
14a	Not applicable	Not applicable	Not applicable
14b	Optional (3)	Optional (3)	Not required
15 and 16	Required	Not required	Not required

- (1) Thermal impedance shall be performed any time after sealing provided temperature cycling is performed in accordance with table E-IV of [MIL-PRF-19500](#), screen 3 prior to this thermal test.
- (2) Junction temperature ( $T_J$ ) is not to exceed  $115^\circ\text{C}$  at  $V_{RWM}$ .  $T_J$  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  $T_J$  for  $I_O = 0$ .
- (3) In accordance with [MIL-PRF-19500](#).

MIL-PRF-19500/610F

4.3.1 Screening (JANH or JANKC). Screening of die shall be in accordance with MIL-PRF-19500. As a minimum, die shall be 100 percent probed in accordance with table 1, subgroup 2.

4.3.2 Burn-in conditions. Burn-in conditions are as follows:  $I_F = 200$  mA dc. Mounting and test conditions in accordance with method 1038 of MIL-STD-750, test condition B.

4.3.2.1 Mounting. Devices may be mounted using any convenient method including the temporary attachment of leads on UR suffix devices, provided that the parts are burned-in at  $T_J \geq +110^\circ\text{C}$ .

4.3.3 Thermal impedance ( $Z_{\theta JX}$  measurements). The  $Z_{\theta JX}$  measurements shall be performed in accordance with method 3101 of MIL-STD-750. The maximum screen limit shall be developed by the supplier using statistical methods and it shall not exceed table 1, subgroup 2 herein.

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 table E-V of MIL-PRF-19500 and table I herein. The following test conditions shall be used for  $Z_{\theta JX}$ , table 1 inspection:

- a.  $I_M$  measurement current ..... 1 mA to 10 mA.
- b.  $I_H$  forward heating current ..... 0.5 A to 1.0 A.
- c.  $t_H$  heating time ..... 10 ms.
- d.  $t_{MD}$  measurement delay time ..... 70  $\mu\text{s}$  maximum.

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. Electrical measurements (end-points) shall be in accordance with the applicable inspections of table I, subgroup 2 herein.

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

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B3	1056	$-55^\circ\text{C}$ to $100^\circ\text{C}$ , 25 cycles, $n = 22$ , $c = 0$ .
	1051	$-55^\circ\text{C}$ to $150^\circ\text{C}$ , 100 cycles, $n = 22$ , $c = 0$ .
B3	4066	$I_{FSM} = 5$ A(pk), condition A 2, $I_O = 200$ mA; $T_A =$ room ambient as defined in the general requirements of MIL-STD-750 (see 4.5); 5 surges of 8.3 ms each at 1 minute intervals.
B4	1036	$I_O = 200$ mA; $T_A =$ room ambient as defined in the general requirements of MIL-STD-750 (see 4.5); $f = 50 - 60$ Hz; $V_{RWM} = 40$ V(pk); $t_{on} = t_{off} = 3$ minutes minimum for 2,000 cycles.
B5	1027	$I_F = 200$ mA dc minimum, adjust $I_F$ or $T_A$ to achieve $T_J = + 125^\circ\text{C}$ minimum.

MIL-PRF-19500/610F

4.4.2.2 Group B inspection, table E-VIB (JAN, JANTX, JANTXV of [MIL-PRF-19500](#)).

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
B2	1056	-55°C to 100°C, 10 cycles, n = 22, c = 0.
	1051	-55°C to 150°C, 25 cycles, n = 22, c = 0.
B2	4066	$I_{FSM} = 5$ A(pk), condition A 2, $I_O = 200$ mA; $T_A$ = room ambient as defined in the general requirements of <a href="#">MIL-STD-750</a> (see 4.5); 5 surges of 8.3 ms each at 1 minute intervals.
B3	1027	$I_F = 200$ mA dc minimum, adjust $I_F$ or $T_A$ to achieve $T_J = + 125^\circ\text{C}$ minimum.
B4	2075	As specified.

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) shall be in accordance with the applicable inspections of [table I](#), subgroup 2 herein.

4.4.3.1 Group C inspection, table E-VII of [MIL-PRF-19500](#).

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
C2	2036	Tension: Test condition A; weight = 10 pounds; t = 15 s. Lead fatigue: Test condition E; weight 1 pound. NOTE: Both tension and lead fatigue are not applicable for UR devices.
C5	3101	See 4.4.5 herein.
C6	1027	$I_F = 200$ mA dc minimum, adjust $I_F$ or $T_A$ to achieve $T_J = + 125^\circ\text{C}$ minimum.

4.4.4 Group E inspection. Group E inspection shall be conducted in accordance with table E-IX of [MIL-PRF-19500](#) and the conditions for subgroup testing in [table II](#) herein. Electrical measurements (end-points) shall be in accordance with the applicable inspections of [table I](#), subgroup 2 herein.

4.4.5 Thermal resistance. Thermal resistance measurement shall be performed in accordance with method 3101 or 4081 of [MIL-STD-750](#). Forced moving air or draft shall not be permitted across the devices during test. The maximum limit for  $R_{\theta JL}$  under these test conditions shall be  $R_{\theta JL(max)} = 250^{\circ}\text{C/W}$  and  $R_{\theta JEC(max)} = 100^{\circ}\text{C/W}$ . The following conditions shall apply:

- a.  $I_M = 1 \text{ mA to } 10 \text{ mA}$ .
- b.  $I_H = 200 \text{ mA}$ .
- c.  $t_H = 20 \text{ seconds minimum}$ .
- d.  $t_{MD} = 70 \text{ } \mu\text{s maximum}$ .

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 4.3.2.1 of [MIL-STD-750](#).

4.5.2 Steady-state operation life. This test shall be conducted with a half-sine wave 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 not be greater than 180 degrees nor less than 150 degrees.

## MIL-PRF-19500/610F

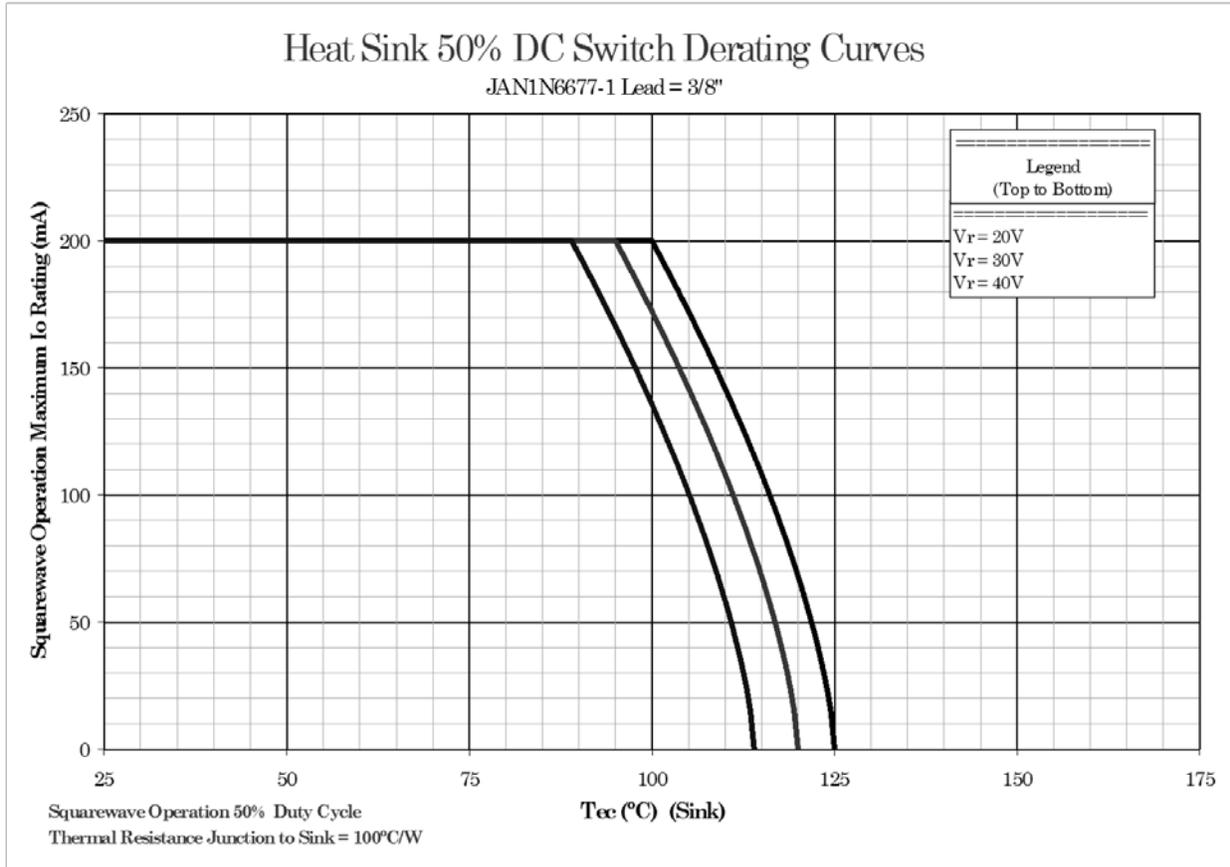
TABLE I. Group A inspection.

Inspection <sup>1/</sup>	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 1</u>						
Visual and mechanical examination	2071					
<u>Subgroup 2</u>						
Thermal impedance	3101	See 4.3.3	Z <sub>θJX</sub>	20		°C/W
Forward voltage	4011	I <sub>FM</sub> = 20 mA (pk), pulse method (see 4.5.1)	V <sub>FM1</sub>	0.37		V
	4011	I <sub>FM</sub> = 200 mA (pk), pulse method (see 4.5.1)	V <sub>FM2</sub>	0.50		V
	4011	I <sub>FM</sub> = 630 mA (pk), pulse method (see 4.5.1)	V <sub>FM3</sub>	0.70		V
Reverse current leakage	4016	V <sub>RM</sub> = 40 V (pk), pulse method (see 4.5.1)	I <sub>RM1</sub>	5.0		μA
<u>Subgroup 3</u>						
High temperature operation:		T <sub>A</sub> = +100°C				
Reverse current leakage	4016	V <sub>RM</sub> = 40 V (pk), pulse method (see 4.5.1)	I <sub>RM2</sub>	0.60		mA
Forward voltage	4011	I <sub>F</sub> = 200 mA (pk), pulse method (see 4.5.1)	V <sub>FM4</sub>	0.47		V
Low temperature operation:		T <sub>A</sub> = -55°C				
Reverse current leakage	4016	V <sub>RM</sub> = 40 V (pk), pulse method (see 4.5.1)	I <sub>RM3</sub>	20		μA
Forward voltage	4011	I <sub>F</sub> = 200 mA (pk), pulse method (see 4.5.1)	V <sub>FM5</sub>	0.60		V
<u>Subgroup 4</u>						
Capacitance	4001	V <sub>R</sub> = 0 V dc, .01 ≤ f ≤ 1 MHz, V <sub>SIG</sub> = 15 mV p-p	C <sub>T</sub>	50		pF

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

\* TABLE II. Group E inspection (all quality levels) for qualification and re-qualification.

Inspection	MIL-STD-750		Sampling plan
	Method	Conditions	
<u>Subgroup 1</u>			45 devices c = 0
Thermal shock	1056	500 cycles -55°C to 100°C	
Temperature cycling	1051	500 cycles -55°C to 150°C	
Hermetic seal	1071	Test condition E	
Electrical measurement		See <a href="#">table I</a> , subgroup 2	45 devices c = 0
<u>Subgroup 2</u>			
Steady-state reverse bias	1038	Test condition A; 1,000 hours, see <a href="#">4.4.3.1</a> , subgroup C6 herein.	
Electrical measurement		See <a href="#">table I</a> , subgroup 2	45 devices, c = 0
<u>Subgroup 4</u>			
Thermal impedance curves		See <a href="#">MIL-PRF-19500</a> , group E, subgroup 4.	
<u>Subgroup 5</u>			
Not applicable			
<u>Subgroup 6</u>			
ESD	1020		
<u>Subgroup 9</u>			45 devices, c = 0
* Resistance to glass cracking	1057	Test condition B. Test to destruction or 25 cycles max, whichever comes first.	



NOTES:

1. Maximum theoretical derate design curve. This is the true inverse of the worst case thermal resistance value. All devices are capable of operating at  $\leq T_J$  specified on this curve. Any parallel line to this curve will intersect the appropriate power for the desired maximum  $T_J$  allowed.
2. Derate design curve constrained by the maximum junction temperatures and power rating specified. (See 1.3 herein.)

FIGURE 4. Temperature power derating for 1N6677-1 (DO-35).

## Temperature-Current Derating Curve

1N6677UR-1



## NOTES:

1. Maximum theoretical derate design curve. This is the true inverse of the worst case thermal resistance value. All devices are capable of operating at  $\leq T_J$  specified on this curve. Any parallel line to this curve will intersect the appropriate power for the desired maximum  $T_J$  allowed.
2. Derate design curve constrained by the maximum junction temperatures and power rating specified. (See 1.3 herein.)
3. Derate design curve chosen at  $T_J \leq 110^\circ\text{C}$  to show power rating where most users want to limit  $T_J$  in their application.

FIGURE 5. Temperature power derating for 1N6677UR-1 (DO-213AA).

### Maximum Thermal Impedance

JAN1N6677-1 DO-35, /610, TL = 25C

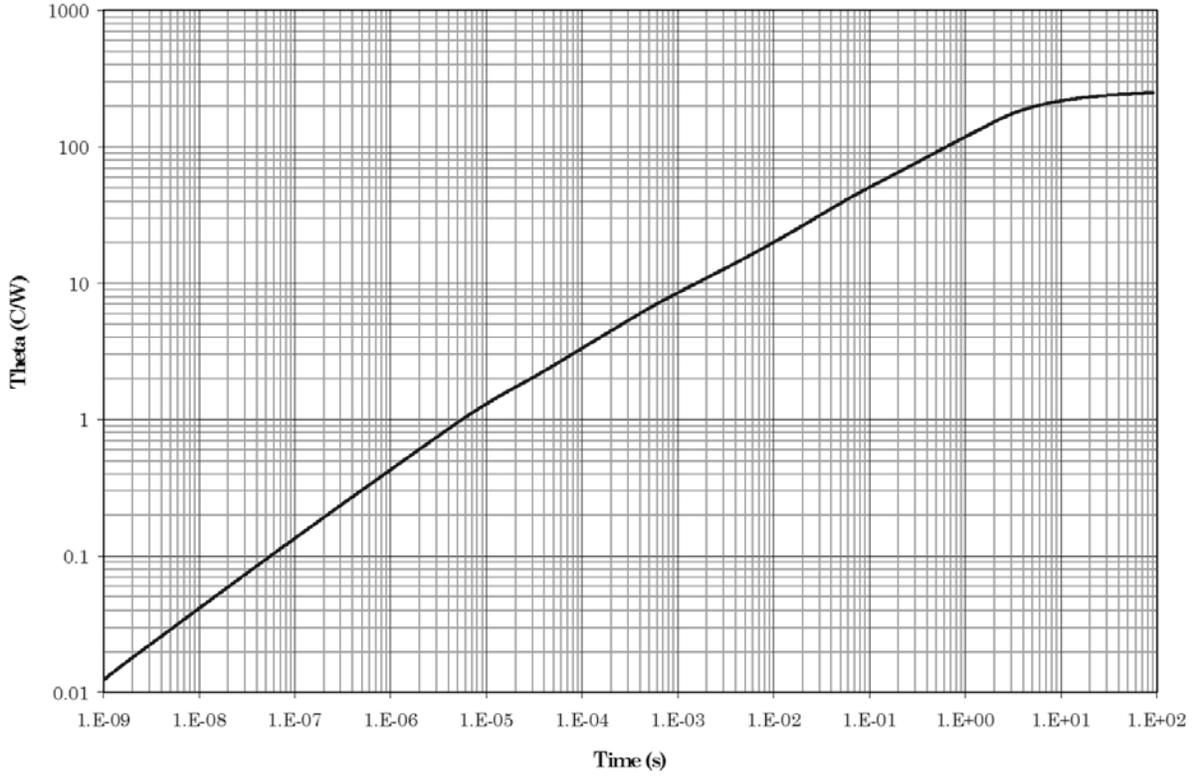


FIGURE 6. Thermal impedance curve for 1N6677-1 (DO-35).

**Maximum Thermal Impedance**

JAN1N6677UR-1 DO-35 MELF, /610, TEC = 25C

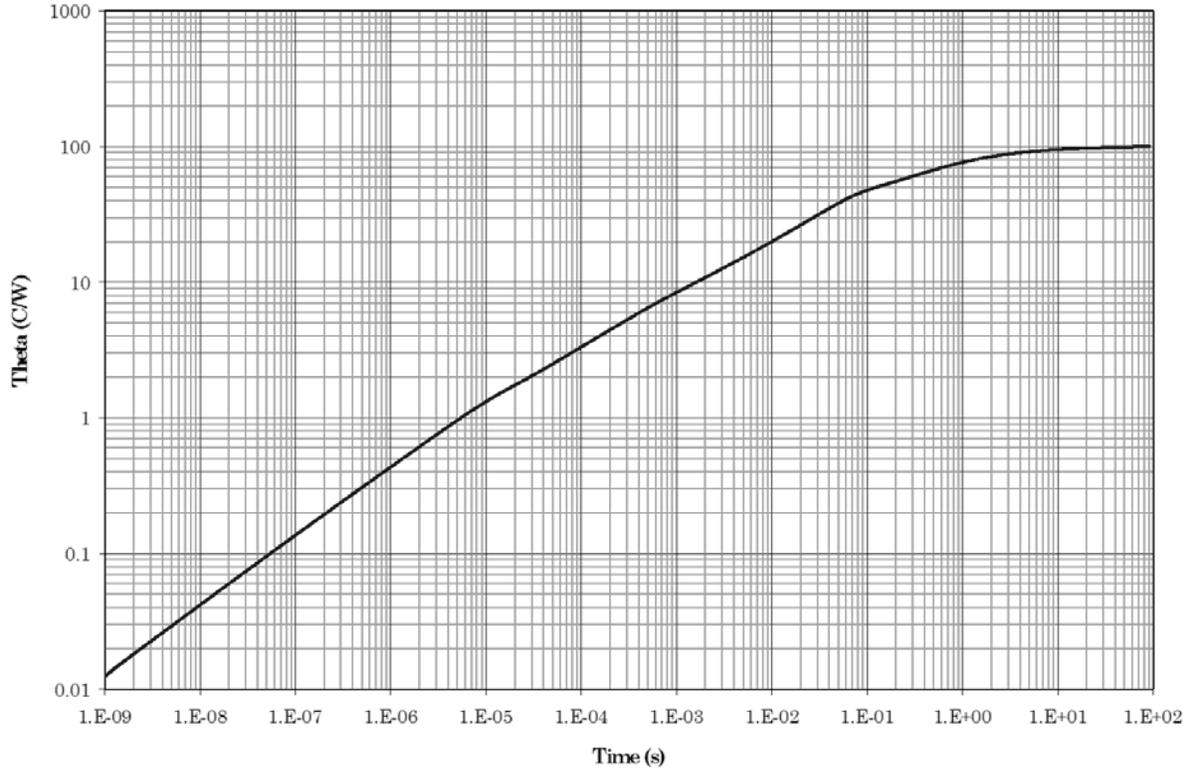


FIGURE 7. Thermal impedance curve for 1N6677UR-1 (DO-213AA).

5. PACKAGING

5.1 Packaging. 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 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. Product assurance level and type designator.

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 Manufacturer's List (QML No. 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, VQE, P.O. Box 3990, Columbus, OH 43216-5000 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 Suppliers of die. The qualified die suppliers with the applicable letter version (e.g., JANHCA1N6677) will be identified on the QML.

JANC ordering information	
PIN	Manufacturer
	43611
1N6677	JANHCA1N6677 JANKCA1N6677

6.5 Ordering data. Acquisition documents may specify the material and finish.

\* 6.6 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 5961-2013-081)

Review activities:

Army - AR, MI, SM  
Navy - AS, MC, OS, SH  
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>.