

The documentation and process conversion measures necessary to comply with this revision shall be completed by 1 August 1994

INCH-POUND

MIL-8-19500/411G
1 February 1994
SUPERSEDING
MIL-8-19500/411F
26 April 1993

MILITARY SPECIFICATION

SEMICONDUCTOR DEVICE, DIODE, SILICON, POWER RECTIFIER, FAST RECOVERY
1N5415 THROUGH 1N5420, 1N5415US THROUGH 1N5420US,
JAN, JANTX, JANTXV, JANS, JANTXVH, JANTXVD, JANTXVR,
JANTXVH, JANSH, JANSD, JANSR, AND JANSH

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

1. SCOPE

1.1 Scope. This specification covers the detail requirements for silicon rectifier diodes. Four levels of product assurance are provided for each device type as specified in MIL-8-19500. Provision for radiation hardness assurance (RHA) to four radiation test levels is provided for JANTXV and JANS product assurance levels. RHA level designators "M", "D", "R", and "H" are appended to the device prefix to identify devices which have passed RHA requirements.

1.2 Physical dimensions. See figures 1 and 2. (Similar to DD-41)

1.3 Maximum ratings.

Types	V_R	V_{RVM}	I_O 1/ $T_A = 55^\circ C$ 2/	I_O 1/ $T_A = 100^\circ C$ 3/	I_{FSM} $I_O = 2$ A dc $T_A = 100^\circ C$ $t_p = 8.3$ ns	t_{rr}	T_{STG} and T_J	$R_{\theta JL}$ at L = .375	$R_{\theta JEC}$ at L = 0 for US versions
	V dc	V (pk)	A dc	A dc	A (pk)	ns	$^\circ C$	$^\circ C/W$	$^\circ C/W$
1N5415, 1N5415US	50	50	3	2	80	150	-65 to +175	20	10
1N5416, 1N5416US	100	100	3	2	80	150	-65 to +175	20	10
1N5417, 1N5417US	200	200	3	2	80	150	-65 to +175	20	10
1N5418, 1N5418US	400	400	3	2	80	150	-65 to +175	20	10
1N5419, 1N5419US	500	500	3	2	80	250	-65 to +175	20	10
1N5420, 1N5420US	600	600	3	2	80	400	-65 to +175	20	10

1/ I_O rating is independent of heat sinking, special mounting or forced air across the body or leads of the device.

2/ Derate linearly at 22 mW/ $^\circ C$ for $55^\circ C \leq T_A \leq 100^\circ C$.

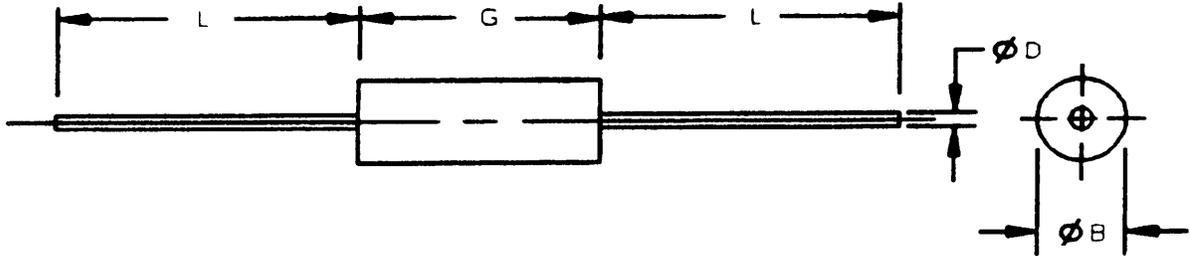
3/ Derate linearly at 27 mW/ $^\circ C$ for $100^\circ C \leq T_A \leq 175^\circ C$.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, US Army Research Laboratory, Electronics and Power Sources Directorate, ATTN: AMSRL-EP-RD, Fort Monmouth, NJ 07703-5601 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 5961

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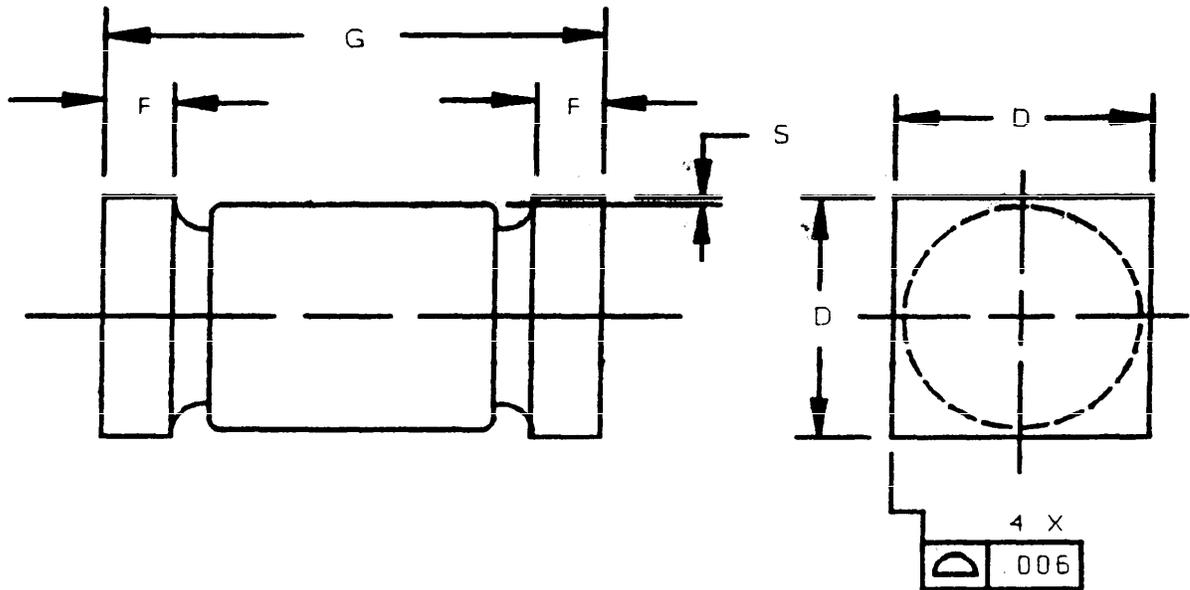


Symbol	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
ϕB	.110	.180	2.79	4.57	3
ϕD	.037	.042	0.94	1.07	4
G	.130	.260	3.30	6.60	4
L	.90	1.30	22.9	33.0	

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Dimension ϕB shall be measured at the largest diameter.
4. The G dimension shall include all uncontrolled areas of the device leads.

FIGURE 1. Physical dimensions.



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
G	.200	.225	5.08	5.72
F	.019	.028	0.48	0.71
S	.003	---	0.08	---
D	.137	.148	3.48	3.76

NOTES:

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

FIGURE 2. Physical dimensions of surface mount family.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATION

MILITARY

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

STANDARDS

MILITARY

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

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Defense Printing Service Detachment Office, Bldg. 4D (Customer Service), 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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

3. REQUIREMENTS

3.1 Associated detail specification. The individual item requirements shall be in accordance with MIL-S-19500 and as specified herein.

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

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-S-19500 and figures 1 and 2 herein. The -US version devices shall be structurally identical to the non surface mount version devices except for lead configuration.

3.3.1 Lead finish. Lead finish shall be in accordance with MIL-STD-750, MIL-S-19500, and herein.

3.3.2 Encapsulant material. In addition to those categories of hermetically sealed package requirements specified in MIL-S-19500, fused-metal-oxide to metal shall also be acceptable.

3.3.3 Diode construction. These devices shall be constructed utilizing non-cavity double plug construction with 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 in MIL-S-19500.

3.4 Marking. Marking shall be in accordance with MIL-S-19500.

3.4.1 Marking for US devices. For US version devices only, all marking may be omitted from the body (except for 3.5), but shall be retained on the initial container.

3.5 Polarity. Alternatively, the polarity of all types shall be indicated with a contrasting color band to denote the cathode end. For US suffix devices a minimum of three contrasting color dots spaced around the cathode end of the device shall be used.

3.6 Radiation hardness assurance (RHA). Radiation hardness assurance requirements, part number designators, and test levels shall be as defined in MIL-S-19500.

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3.6.1 Post irradiation performance characteristics. The electrical performance characteristics of the RHA devices are as specified in 4.4.4 herein.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-S-19500, and as specified herein.

4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-S-19500.

4.2.1 Qualification for radiation hardness assurance. Qualification inspection for radiation hardness assured JANS and JANTXV devices shall consist of group D examinations and tests specified in table IV herein.

4.2.2 Group E inspection. Group E inspection shall be conducted in accordance with MIL-S-19500 and table III herein.

4.3 Screening (JANS, JANTX, AND JANTXV levels only). Screening shall be in accordance with table II of MIL-S-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 (see table II of MIL-S-19500)	Measurement	
	JANS Level	JANTX and JANTXV levels
3C 1/	Thermal impedance (see 4.5.4)	Thermal impedance (see 4.5.4)
9	I_{R1} and V_{F1}	Not applicable
10	Method 1038, condition A	Method 1038, condition A,
11	I_{R1} and V_{F1} ; $\Delta I_{R1} \leq 100$ percent of initial reading or 250 nA dc, whichever is greater; $\Delta V_{F1} \leq \pm 0.1$ V dc.	I_{R1} and V_{F2}
12	See 4.3.1	Method 1038, condition B
13 2/	Subgroup 2 and 3 of table I herein; $\Delta I_{R1} \leq 100$ percent of initial value or 250 nA dc, whichever is greater; $\Delta V_{F1} \leq \pm 0.1$ V dc. Scope display evaluation (see 4.5.1).	Subgroup 2 of table I herein; $\Delta I_{R1} \leq 100$ percent of initial value or 250 nA dc, whichever is greater; $\Delta V_{F2} \leq \pm 0.1$ V dc. Scope display evaluation (see 4.5.1).

1/ Thermal impedance shall be performed any time after sealing provided temperature cycling is performed in accordance with MIL-S-19500, screen 3 prior to this thermal test.

2/ Z_{eJX} is not required in screen 13, if already previously performed.

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4.3.1 Power burn-in conditions. Power burn-in conditions are as follows (see 4.5.2):

Type	V_{RWM}	I_O	f
1N5415	50 V dc	3 A dc	50-60 Hz
1N5416	100 V dc	3 A dc	50-60 Hz
1N5417	200 V dc	3 A dc	50-60 Hz
1N5418	400 V dc	3 A dc	50-60 Hz
1N5419	500 V dc	3 A dc	50-60 Hz
1N5420	600 V dc	3 A dc	50-60 Hz

NOTE: T_A = room ambient as defined in the general requirements of MIL-STD-750, (see 4.5).

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-S-19500.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with MIL-S-19500, and table I herein. The following test conditions shall be used for $Z_{\theta JX}$: $Z_{\theta JX} = 1.5^\circ\text{C/W}$.

- I_H 5 A minimum.
- t_H 10 μs .
- I_H 1 mA to 10 mA.
- t_{HD} 100 μs maximum.

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in table IVa (JANS) and table IVb (JAN, JANTX, and JANTXV) of MIL-S-19500. Electrical measurements (end-points) shall be in accordance with table I, group A, subgroup 2 herein; except, $Z_{\theta JX}$ need not to be performed. See subgroup conditions for delta limits when applicable.

4.4.2.1 Group B inspection, table IVa (JANS) of MIL-S-19500.

Subgroup	Method	Condition
3	----	Peak reverse power: See figure 5 and (see 4.5.3), $P_{RM} = 1,000$ (minimum) watts.
3	4066	$I_{FSM} = 80$ A(pk); 10 surges of 8.3 μs each at 1 minute intervals, superimposed on $I_O = 2$ A dc; $V_{RWM} =$ rated (see 1.3). $T_A = 100^\circ\text{C}$; test each device type subplot.
4	1036	$I_O = 3$ A dc; $T_A =$ room ambient as defined in the general requirements of MIL-STD-750, (see 4.5); f = 50-60 Hz; $V_B =$ rated V_{RWM} (see 1.3 and 4.5.2); $t_{on} = t_{off}$ 3 minutes minimum for 2,000 cycles.
5	1027	$T_A = 150^\circ$ minimum, $I_O = 3$ A (min), or adjust T_A or I_O as required to achieve a lot, $T_J = +275^\circ\text{C}$, $+0$, -35°C . Delta limits: $\Delta I_{R1} \leq 100$ percent of initial value or 250 Na dc, whichever is greater.

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

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
2	----	Peak reverse power: See figure 5 and (see 4.5.4), $P_{RM} = 1,000$ (minimum) watts.
2	4066	Required on each subplot; $I_{FSM} = 80$ A(pk); 10 surges of 8.3 ms each at 1 minute intervals, superimposed on $I_O = 2$ A dc; $V_{RWM} =$ rated V_{RWM} (see 1.3). $T_A = 100^\circ\text{C}$; test each device type subplot.
3	1027	$I_O = 3$ A dc; $T_A =$ room ambient as defined in the general requirements of MIL-STD-750, (see 4.5); $f = 50-60$ Hz; $V_R =$ rated V_{RWM} (see 1.3 and 4.5.2). Delta limits: $\Delta I_{R1} \leq 100$ percent of initial value or 250 mA dc, whichever is greater.
5	----	Not applicable.
6	1032	$T_A = +175^\circ\text{C}$, $t = 340$ hours.

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table V of MIL-S-19500. Electrical measurements (end points) shall be in accordance with table I, group A, subgroup 2 herein; except, I_{OJX} need not to be performed. See subgroup conditions for delta limits when applicable.

4.4.3.1 Group C inspection, table V of MIL-S-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
2	2036	Tension: Test condition A; weight = 20 pounds; $t = 30$ seconds. Lead fatigue: Test condition E; weight 2 pounds. NOTE: Both tension and lead fatigue are not applicable for US devices. Delta limits: $\Delta V_{E1} \leq \pm 0.1$ V dc; $\Delta I_{R1} \leq 100$ percent of initial value or 250 mA dc, whichever is greater.
3	----	Not applicable.
6	1026	$I_O = 3$ A dc; $T_A =$ room ambient as defined in the general requirements of MIL-STD-750, (see 4.5); $f = 50-60$ Hz; $V_R =$ rated V_{RWM} (see 1.3 and 4.5.2).

4.4.4 Group D inspection. Radiation hardness assured JANS and JANTXV devices shall include the group D tests specified in table II. These tests shall be performed as required in accordance with MIL-S-19500 and MIL-STD-750, method 1019 for total ionizing dose or method 1017 for neutron fluence as applicable.

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

4.5.1 Scope-display evaluation. The reverse breakdown characteristics shall be viewed on an oscilloscope with display calibration factors of 5 to 20 μA per division and 50 to 100 V per division. Reverse current over the knee shall be at 50 μA . Each device shall exhibit a sharp knee characteristic and any discontinuity or dynamic instability of the trace shall be cause for rejection. See MIL-STD-750C, method 4023.

4.5.2 Burn-in and steady-state operation 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.

4.5.2.1 Alternate Mounting Conditions. At the option of the manufacturer, any mounting configuration may be utilized providing the following conditions are met:

- a. $I_0(\text{min}) = I_0$ rated at 55°C (see 1.3). $V_R = \text{rated } V_{RUM}$. $f = 50\text{--}60$ Hz.
- b. For leaded devices and US devices with temporary leads. $T_A = \text{room ambient as defined in MIL-STD-750}$. For US devices without temporary leads, $T_{EC} = +75^\circ\text{C}$ minimum.
- c. Increase T_A , T_{EC} , or I_0 as required to give a minimum T_j of $+145^\circ\text{C}$.

4.5.3 Peak reverse power test. This test shall be measured in the circuit of figure 5, or equivalent. A 20 microsecond half-sine waveform of current shall be used and peak reverse power shall be determined by the product of peak reverse voltage and peak reverse current.

4.5.4 Thermal impedance ($Z_{\theta JX}$ measurements). The $Z_{\theta JX}$ measurements shall be performed in accordance with MIL-STD-750, method 3101.

4.5.4.1 Thermal impedance ($Z_{\theta JX}$ measurements) for initial qualification or requalification. The $Z_{\theta JX}$ measurements shall be performed in accordance with MIL-STD-750, method 3101 (read and record date $Z_{\theta JX}$). $Z_{\theta JX}$ shall be supplied on one lot (500 devices minimum and a thermal response curve shall be submitted). Twenty-two of these samples shall be serialized and provided to the qualifying activity for correlation prior to shipment of parts. Measurements conditions shall be in accordance with 4.4.1.

4.5.5 Thermal resistance. Thermal resistance measurement shall be performed in accordance with MIL-STD-750, method 3101 or 4081. Read and record data in accordance with group E herein and shall be included in the qualification report. Forced moving air or draft shall not be permitted across the devices during test. The maximum limit for $R_{\theta JL}$ under these test condition shall be $R_{\theta JL(\text{max})} = 20^\circ\text{C/W}$ for $L = .375$; $R_{\theta JL(\text{max})} = 10^\circ\text{C/W}$ for $L = 0$ (US version). The following conditions shall apply:

I_H	3 A.
t_H	25 seconds minimum.
I_M	1 mA to 10 mA.
t_{HD}	70 μs maximum.

LS = Lead spacing = 3/8 inch as defined on figure 3 below:

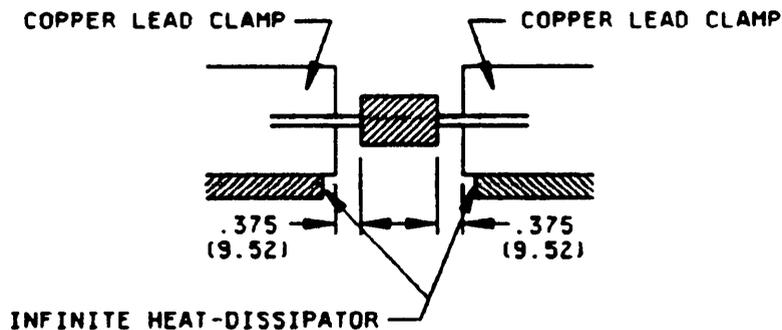


FIGURE 3. Mounting arrangement.

TABLE I. Group A inspection.

Inspection 1/ <u>Subgroup 1</u>	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
Visual and mechanical inspection	2071					
<u>Subgroup 2</u>						
Thermal impedance	3101	See 4.4.1	Z_{eJX}		1.5	$^{\circ}C/W$
Forward voltage	4011	$I_F = 1.5$ A dc	V_{F1}	0.5	1.2	V dc
Forward voltage	4011	$I_F = 9$ A dc (pulsed); $t_D = 300$ μs ; 2% maximum duty cycle	V_{F2}	0.6	1.5	V (pk)
Reverse current	4016	DC method; $V_R =$ rated (see 1.3)	I_{R1}	---	1.0	μA dc
Breakdown voltage	4021	$I_R = 50$ μA dc	$V_{(BR)1}$			
1N5415				50	---	V dc
1N5416				100	---	V dc
1N5417				200	---	V dc
1N5418				400	---	V dc
1N5419				500	---	V dc
1N5420				600	---	V dc
<u>Subgroup 3</u>						
High temperature operation:		$T_A = +100^{\circ}C$				
Reverse current	4016	DC method; $V_R =$ rated (see 1.3)	I_{R2}		20	μA dc
Low temperature operation:		$T_A = -55^{\circ}C$				
Forward-voltage	4011	$I_F = 0.5$ A dc	V_{F3}	0.5	1.4	V dc
Breakdown voltage	4021	$I_R = 50$ μA dc	$V_{(BR)2}$			
1N5415				50	---	V dc
1N5416				100	---	V dc
1N5417				200	---	V dc
1N5418				400	---	V dc
1N5419				500	---	V dc
1N5420				600	---	V dc

See footnote at end of table.

TABLE I. Group A inspection - Continued.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 4</u>						
Reverse recovery time	4031	Condition B1	t_{rr}			
1N5415				---	150	ns
1N5416				---	150	ns
1N5417				---	150	ns
1N5418				---	150	ns
1N5419				---	250	ns
1N5420				---	400	ns
Capacitance	4001	$V_b = 4 \text{ V dc};$ $100 \text{ Khz} \leq f \leq 1 \text{ Mhz}$	C			
1N5415				---	550	pF
1N5416				---	430	pF
1N5417				---	250	pF
1N5418				---	165	pF
1N5419				---	140	pF
1N5420				---	120	pF
<u>Subgroups 5, 6, and 7</u>						
Not applicable						

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

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TABLE II. Group D inspection and end-point limits for radiation hardness assured JANS and JANTXV devices only.

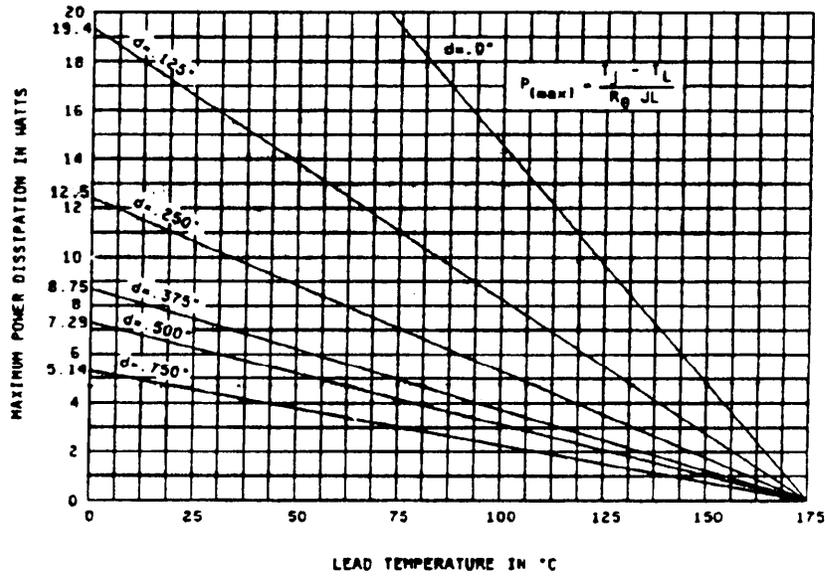
Inspection 1/	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
Subgroup 1						
Neutron irradiation	1017					
Electrical measurements		$I_F = 9 \text{ A dc, pulsed}$	V_F			
Forward voltage	4011	$t_D = 300 \mu\text{s};$ 2% maximum duty cycle				
M, D, R, H						
1N5415, 1N5416, 1N5417, 1N5418, 1N5419, 1N5420				0.6 0.6 0.6	1.6 1.7 1.8	V(pk) V(pk) V(pk)
Reverse current, M, D, R, H	4016	DC method:	I_R			
1N5415		$V_R = 50 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5416		$V_R = 100 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5417		$V_R = 200 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5418		$V_R = 400 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5419		$V_R = 500 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5420		$V_R = 600 \text{ V dc}$			1.0	$\mu\text{A dc}$
Subgroup 2						
Total dose irradiation	1019					
Electrical measurements		$I_F = 9 \text{ A dc pulsed}$	V_F			
Forward voltage	4011	$t_D = 300 \mu\text{s};$ 2% maximum duty cycle				
M, D, R, H						
1N5415, 1N5416, 1N5417, 1N5418, 1N5419, 1N5420				0.6 0.6 0.6	1.6 1.7 1.8	V(pk) V(pk) V(pk)
Reverse current M, D, R, H	4016	DC method:	I_R			
1N5415		$V_R = 50 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5416		$V_R = 100 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5417		$V_R = 200 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5418		$V_R = 400 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5419		$V_R = 500 \text{ V dc}$			1.0	$\mu\text{A dc}$
1N5420		$V_R = 600 \text{ V dc}$			1.0	$\mu\text{A dc}$

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

TABLE III. Group E inspection (all quality levels) for qualification only.

Inspection	MIL-STD-750		Sampling plan ^{1/}
	Method	Conditions	
<u>Subgroup 1</u>			5
Temperature cycling	1051	500 cycles; condition C	
Electrical measurement		See table I, group A, subgroup 2	
<u>Subgroup 2</u>			5
Steady-state dc blocking life	1038	1,000 hours, condition A.	
Electrical measurement		See table I, group A, subgroup 2	
<u>Subgroup 3</u>			
Not applicable			
<u>Subgroup 4</u>			10 devices c = 0
Thermal resistance	3101 or 4081	See 4.5.5	
<u>Subgroup 5</u>			10 devices c = 0
Barometric pressure	1001	Pressure = 8.0 mm	

^{1/} For sampling plans not specified, see MIL-S-19500.



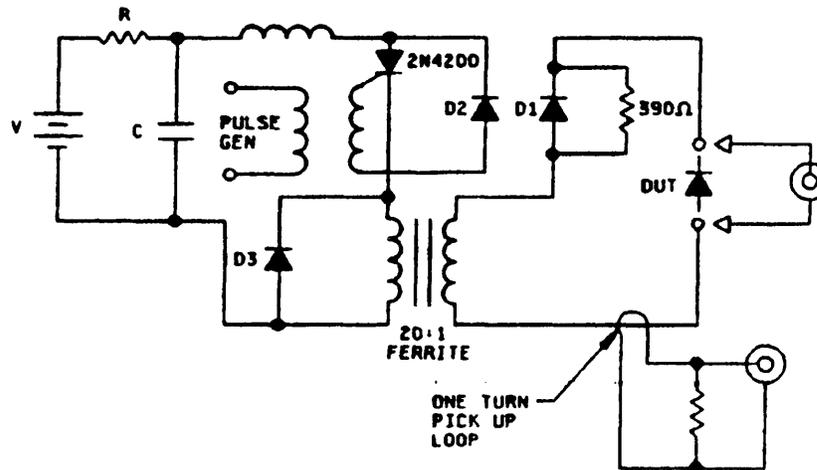
Maximum lead temperature in °C (T_l) at point "L" from body (for maximum operating junction temperature with equal two-lead conditions).

d	$R_{\theta JL}$
Inches	°C/W
.000 (.00)	4
.125 (3.18)	9
.250 (6.35)	14
.375 (9.53)	20
.500 (12.70)	24
.750 (19.05)	34

NOTES:

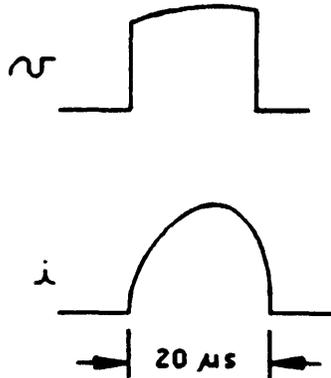
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 4. Maximum power in watts vs lead temperature.



NOTES:

- L = 13T H22 on 1" diameter form (air core).
- C = 1 to 10 μ fd to give 20 μ s pulse width.
- V = Adjustable to 200 volts for power desired in DUT.
- D1 = 3 kV; 600 Ma (1N3647 or equivalent).
- D2, D3 = 600 V; 3A (1N5552 or equivalent).
- * Values not stated are determined at the time of test.



TYPICAL WAVEFORMS

FIGURE 5. Peak reverse power measurement circuit and waveform.

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5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-S-19500.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Notes. The notes specified in MIL-S-19500 are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Issue of DODISS to be cited in the solicitation.
- b. Lead finish as specified (see 3.3.1).
- c. Product assurance level and type designation.

6.3 Replacement data.

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

CONCLUDING MATERIAL

Custodians:

Army - ER
Navy - EC
Air Force - 17
NASA - NA

Review activities:

Army - AR, AV, MI, SH
Navy - AS, CG, MC
Air Force - 19, 80, 85, 99
DLA - ES

Preparing activity:

Army - ER

Agent:

DLA - ES

(Project 5961-1570)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
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3. DOCUMENT TITLE SEMICONDUCTOR DEVICE, DIODE, SILICON, POWER RECTIFIER, FAST RECOVERY 1N5415 THROUGH 1N5420, 1N5415US THROUGH 1N5420US, JAN, JANTX, JANTXV			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.) JANS, JANTXVM, JANTXVD, JANTXVR, JANTXVH, JANSM, JANSJ, JANSR, and JANSK			
5. REASON FOR RECOMMENDATION			
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