The documentation and process conversion measures necessary to comply with this document shall be completed by 25 Month 2017.

INCH-POUND

MIL-PRF-19500/507G
14 September 2017
SUPERSEDING
MIL-PRF-19500/507F
w/AMENDMENT 1
12 September 2013

PERFORMANCE SPECIFICATION SHEET

* SEMICONDUCTOR DEVICE, DIODE, SILICON, BIPOLAR TRANSIENT VOLTAGE SUPPRESSOR, TYPES 1N6036 THROUGH 1N6072 JAN, JANTX, AND JANTXV

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 1500 watt, bi-directional, silicon, transient voltage suppressor diodes. Three levels of product assurance are provided for each device as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figure 1 (DO–13).

1.3 Maximum ratings. Maximum ratings are as shown in maximum test ratings (see 3.6) and as follows:

a. P_{PP} = 1,500 W (see figures 2 and 3) at t_p = 1.0 ms.

b. $P_{M(AV)}$ = 1.0 W (derate at 6.67 mW/°C above T_A = +25°C) (see 6.4).

c. -55°C ≤ T_J ≤ +175°C (ambient), -55°C ≤ T_{STG} ≤ +175°C (ambient).

1.4 Primary electrical characteristics at T_A = +25°C. Primary ratings are as shown in maximum test ratings (see 3.6).

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/.

* 1.5 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-19500, and as specified herein. See 6.5 for PIN construction example and 6.6 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”, and "JANTXV".

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

* 1.5.2.1 First number and first letter symbols. The semiconductors 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 semiconductors covered by this specification sheet are as follows: "6036" through “6072”.

* 1.5.3 Suffix symbols. The suffix symbol "A" indicates that the semiconductor is a modified version of the device type.

* 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.

2.2.1 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

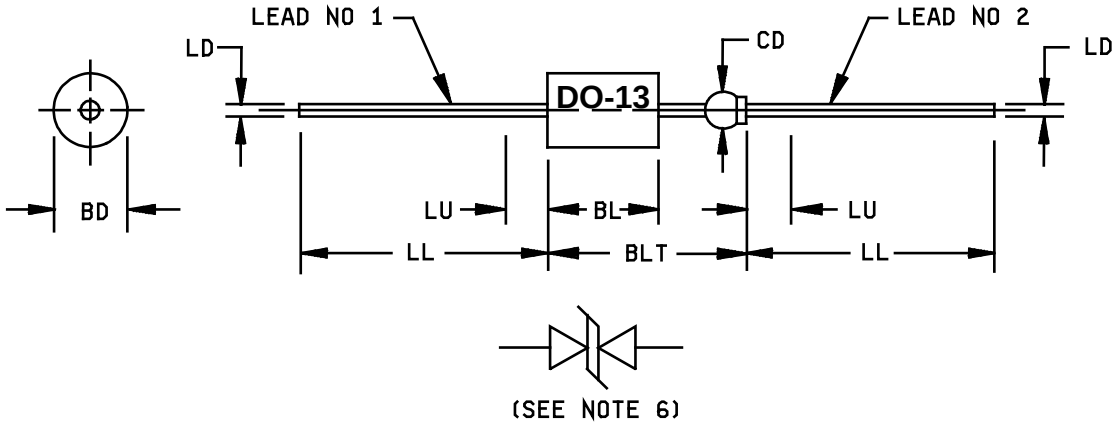
MIL-PRF-19500 - Semiconductor Devices, General Specification for.

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.



Symbol	Dimensions				Notes 1, 2
	Inches		Millimeters		
	Min	Max	Min	Max	
BD	.215	.235	5.46	5.97	
BL	.293	.357	7.44	9.07	3
BLT		.570		14.48	
CD	.045	.100	1.14	2.54	5
LD	.025	.035	0.64	0.89	
LL	1.000	1.625	25.40	41.28	
LU		.188		4.78	4

NOTES:
1. Dimensions are in inches.
2. Millimeter equivalents are given for general information only.
3. The major diameter is essentially constant along its length.
4. Within this zone, diameter may vary to allow for lead finishes and irregularities.
5. Dimension to allow for pinch or seal deformation anywhere along tubulation.
6. Symbol for bidirectional transient suppressor.
7. Lead 1 shall be electrically connected to the case.
8. In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

FIGURE 1. Physical dimensions (DO-13).

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. The interface and physical dimensions shall be as specified in MIL-PRF-19500, and on figure 1 (DO-13) herein.

3.4.1 Metallurgical bonded construction. Metallurgically bonded construction is required. The bonding flow shall have flow points above 260°C.

3.4.2 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).

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

3.6 Electrical performance characteristics. Unless otherwise specified, the electrical performance characteristics are as specified in 1.3, 1.4, and table I. Maximum ratings shall be in accordance with columns 5 thru 8 of table II. Primary electrical characteristics are shown in columns 2 and 4 of table II herein.

3.7 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table I subgroup 2.

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

4. VERIFICATION

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

a. Qualification inspection (see 4.2).

b. Screening (see 4.3).

c. Conformance inspection (see 4.4).

4.1.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-PRF-19500, and as specified herein except lot accumulation shall be 3-months in lieu of 6-weeks.

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 qualification shall be performed herein for qualification or requalification only. In case qualification was awarded to a prior revision of the specification sheet that did not request the performance of table III tests, the tests specified in table III herein that were not performed on the first inspection lot to this revision to maintain qualification.

* 4.3 Screening (JANTX, and JANTXV 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 table I herein shall not be acceptable.

Screen	Measurement
	JANTX and JANTXV levels
3a	$T_{(high)}$ = +175°C
9, 10, 11	Not applicable
12	See 4.3.1
13	Interim electrical, delta, and group A, subgroups 2 and 3, electrical parameters not applicable for this screen (performed in screen 12).
15	For JANTXV devices only - 100 percent Inspection will be in accordance with manufacturer's internal failure criteria

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

* a. Pulse in accordance with 4.5.2.a and table III Group E, in polarity A 10 times (screening and group B) and 50 times (group C) at T_A = +25°C.

* b. Pulse in accordance with 4.5.2.a and table III Group E, in polarity B 10 times (screening and group B) and 50 times (group C) at T_A = +25°C.

c. Read I_D and V_{BR} in polarities A and B at T_A = +25°C, remove defective devices and record the number of failures.

d. Apply the working peak reverse voltage (V_{WM}) (column 4 of table II) in polarity A at T_A = +125°C as follows:

(1) For 48 hours (JANTX and JANTXV).

(2) For 170 hours (JAN, JANTX, and JANTXV) for group B steady-state operation life test.

(3) For 500 hours for group C steady-state operation life test.

e. Read I_D in polarity A at T_A = +25°C. Devices with ΔI_D > 50 percent (100 percent for steady-state operation life) of the initial reading or 1 μA dc, whichever is greater shall be considered defective. Remove defective devices and record the number of failures (see NOTE).

4.3.1 Power burn-in (HTRB) and steady-state operation life test conditions. The test conditions and order of events shall be as follows: Continued

f. Apply the working peak reverse voltage (V_{WM} column 4 of table II) in polarity B at T_A = +125°C as follows:

(1) 48 hours (JANTX and JANTXV).

(2) 170 hours (JAN, JANTX, and JANTXV) for group B steady-state operation life test.

(3) 500 hours for group C steady-state operation life test.

g. Read I_D in polarity B at T_A = +25°C. Devices with ΔI_D > 50 percent (100 percent for steady-state operation life) of the initial reading or 1 μA dc, whichever is greater shall be considered defective. Remove defective devices and record the number of failures (see NOTE).

h. Read V_{BR} in polarities A and B at T_A = +25°C. Devices with ΔV_{BR} > 2 percent (±5 percent for steady-state operation life) of the initial reading shall be considered defective. Remove defective devices and record the number of failures (see NOTE).

i. Read I_D in polarity A at T_A = +25°C, remove defective devices and record the number of failures.

NOTE: For the purpose of this test, the direction in which the device is first pulsed shall be considered polarity A and the reverse direction polarity B.

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 table I, subgroup 2 herein.

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

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

Subgroup	Method	Conditions
B2	1051	-55°C to +175°C.
B2	4066	10 pulses, see 4.5.3.
B3	1027	See 4.3.1, 4.5.1 and 4.5.2.
B5		Not applicable.

NOTE: All electrical measurements and tests shall be performed twice, once in each direction.

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. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps of table IV herein.

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

Subgroup	Method	Conditions
C2	2036	Lead tension: Test condition A; weight = 10 pounds (4.54 kg); t = 15 ±3 s. Lead fatigue: Test condition E; weight = 8 ounces (226.7 g).
C5		Not applicable
C6	1026	See 4.3.1, 4.5.1 and 4.5.2.
C7	1018	n = 3, c = 0 or n = 5, c = 1.
C8		Conditions for temperature coefficient of breakdown voltage are as follows: I_{BR} = column 3 of table II, T_1 = +25°C ±3°C, T_2 = T_1 +100°C; n = 22, c = 0.
C9		Conditions for maximum peak pulse current are as follow: See 4.5.2.b, (20 μs pulse only) 10 pulses; n = 22, c = 0.

NOTE: All electrical measurements and tests shall be performed twice, once in each direction.

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 herein. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2 herein. See table IV 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 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 4.3.1 with the following exceptions: Step 4.3.1.d through 4.3.1.i shall be repeated for an additional 330 hours in each direction for a total of 500 hours in each direction (total = 1,000 hours for group C).

* 4.5.2 Maximum peak pulse current (Ipp). The peak pulse currents specified in column 7 of table II shall be applied while simultaneously maintaining a bias voltage of not less than the applicable voltage specified in column 4 of table II, in the same polarity as the peak pulse current. The clamping voltage (Vc) shall be as specified in 4.5.3. The peak pulse current shall be applied with a current vs time waveform as follows (1 pulse per minute maximum):

a. Pulse current shall reach 100 percent of I_{PP} at t ≤ 10 μs and decay to 50 percent of I_{PP} at t ≥ 1 ms for t_p = 1 ms (see figure 4).

b. Pulse current shall reach 100 percent of I_{PP} at t ≤ 8 μs and decay to 50 percent of I_{PP} at t ≥ 20 μs for (see figure 5).

4.5.3 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. The peak clamping voltage as specified in column 6 of table II shall be applicable to the 1 ms pulse of 4.5.2.a only.

TABLE I. Group A inspection.

Inspection 1/	MIL-STD-750		Symbol	Limits 2/		Unit
	Method	Conditions		Min	Max	
Subgroup 1						
Visual and mechanical examination	2071					
Radiography	2076	For JANTX devices only - Inspection will be in accordance with manufacturer's internal failure criteria, c = 45, n = 0				
Subgroup 2 3/						
Standby current	4016	DC method, $V_R = V_{WM}$, column 4 of table II	I_D		Column 5	µA
Breakdown voltage	4022	$t_p \leq 300$ ms, duty cycle ≤ 2 percent, I_{BR} = column 3 of table II	V_{BR}	Column 2	Column 2	V
Subgroup 3 3/						
Low temperature operation:		$T_A = -55°C$				
Minimum breakdown voltage	4022	$t_p \leq 300$ ms, duty cycle ≤ 2 percent, I_{BR} = column 3 of table II	V_{BR}	Column 10		V
High temperature operation:		$T_A = 125°C$				
Reverse current leakage	4016	DC method, VR = V_{WM}, column 4 of table II	I_{D2}		Column 9	µA
Subgroup 4 3/						
Clamping voltage maximum (pulsed) (see 4.5.3)		t_p = 1.0 ms (see 4.5.2.a), I_{PP} = column 7 of table II	V_C		Column 6	V
Subgroup 5, 6 and 7						
Not applicable						

1/ For sampling plan, see MIL-PRF-19500.
2/ Column references are to table II.
3/ All electrical testing shall be performed twice, once in each direction.

TABLE II. Characteristics and ratings.

Col 1	Col 2		Col 3	Col 4	Col 5	Col 6	Col 7		Col 8	Col 9	Col 10	Col 11
Type	Breakdown voltage V_{BR} at I_{BR}		Test current I_{BR}	Working peak reverse voltage V_{WM}	Maximum standby current I_D	Maximum clamping voltage V_C at I_{PP}	Maximum peak pulse current I_{PP}		Maximum temperature coefficient of V_{BR} $\alpha_{V(BR)}$	Maximum standby current I_D T_A = +125°C	Minimum breakdown voltage at I_{BR} T_A = -55°C	Breakdown current I_{BR} maximum dc current T_A = +25°C
							t_p = 20 µs t_r = 8 µs	t_p = 1 ms t_r = 10 µs				
	Min V	Max V	mA	V	µA	V	A (pk)	A (pk)	%/°C	µA	V	mA
1N6036A	7.13	7.88	10	6.0	1000	11.3	750	132.0	0.061	2000	6.66	125.0
1N6037A	7.79	8.61	10	7.0	500	12.1	700	124.0	0.065	1000	7.24	115.0
1N6038A	8.65	9.55	10	7.5	200	13.4	630	112.0	0.068	400	8.01	104.0
1N6039A	9.50	10.50	1	8.5	50	14.5	585	103.	0.073	200	8.75	95.0
1N6040A	10.50	11.60	1	9.0	10	15.6	545	96.0	0.075	200	9.65	86.0
1N6041A	11.40	12.60	1	10.0	5	16.7	510	90.0	0.078	200	10.40	73.0
1N6042A	12.40	13.70	1	11.0	5	18.2	465	82.0	0.081	200	11.30	70.0
1N6043A	14.30	15.80	1	12.0	5	21.2	400	71.0	0.084	200	13.00	63.0
1N6044A	15.20	16.80	1	13.0	5	22.5	375	67.0	0.086	200	13.70	59.0
1N6045A	17.10	18.90	1	15.0	5	25.2	335	59.5	0.088	200	15.40	53.0
1N6046A	19.00	21.00	1	17.0	5	27.7	305	54.0	0.090	200	17.10	47.0
1N6047A	20.90	23.10	1	18.0	5	30.6	275	49.0	0.092	200	18.80	43.0
1N6048A	22.80	25.20	1	20.0	5	33.2	255	45.0	0.094	200	20.50	39.0
1N6049A	25.70	28.40	1	22.0	5	37.5	225	40.0	0.096	200	23.00	35.0
1N6050A	28.50	31.50	1	25.0	5	41.4	205	36.0	0.097	200	25.50	31.0
1N6051A	31.40	34.70	1	28.0	5	45.7	185	33.0	0.098	200	29.00	28.0
1N6052A	34.20	37.80	1	30.0	5	49.9	170	30.0	0.098	200	30.50	26.0
1N6053A	37.10	41.00	1	33.0	5	53.9	155	28.0	0.100	200	33.10	24.0
1N6054A	40.90	45.20	1	36.0	5	59.3	145	25.3	0.101	200	36.40	22.0
1N6055A	44.70	49.40	1	40.0	5	64.8	130	23.2	0.101	200	39.80	20.0

TABLE II. Characteristics and ratings – Continued.

Col 1	Col 2		Col 3	Col 4	Col 5	Col 6	Col 7		Col 8	Col 9	Col 10	Col 11
Type	Breakdown voltage V_{BR} at I_{BR}		Test current I_{BR}	Working peak reverse voltage V_{WM}	Maximum standby current I_D	Maximum clamping voltage V_C at I_{PP}	Maximum peak pulse current I_{PP}		Maximum temperature coefficient of V_{BR} $\alpha_{V(BR)}$	Maximum standby current I_D T_A = +125°C	Minimum breakdown voltage at I_{BR} T_A = -55°C	Breakdown current I_{BR} maximum dc current T_A = +25°C
							t_p = 20 μs t_r = 8 μs	t_p = 1 ms t_r = 10 μs				
	Min V	Max V	mA	V	μA	V	A (pk)	A (pk)	%/°C	μA	V	mA
1N6056A	48.50	53.60	1	43.0	5	70.1	120	21.4	0.102	200	43.10	18.0
1N6057A	53.20	58.80	1	47.0	5	77.0	110	19.5	0.103	200	47.30	17.0
1N6058A	58.90	65.10	1	53.0	5	85.0	100	17.7	0.104	200	52.30	15.0
1N6059A	64.60	71.40	1	58.0	5	92.0	90	16.3	0.104	200	57.30	14.0
1N6060A	71.30	78.80	1	64.0	5	103.0	82	14.6	0.105	200	63.20	12.0
1N6061A	77.90	86.10	1	70.0	5	113.0	75	13.3	0.105	200	69.00	11.0
1N6062A	86.50	95.50	1	75.0	5	125.0	68	12.0	0.106	200	76.50	10.0
1N6063A	95.00	105.00	1	82.0	5	137.0	62	11.0	0.106	200	84.10	9.5
1N6064A	105.00	116.00	1	94.0	5	152.0	55	9.9	0.107	200	92.80	8.5
1N6065A	114.00	126.00	1	100.0	5	168.0	50	8.9	0.107	200	100.00	7.5
1N6066A	124.00	137.00	1	110.0	5	182.0	47	8.2	0.107	200	109.00	7.0
1N6067A	143.00	158.00	1	128.0	5	213.0	40	7.0	0.108	200	126.00	6.0
1N6068A	162.00	179.00	1	145.0	5	245.0	36	6.1	0.108	200	143.00	5.5
1N6069A	171.00	189.00	1	150.0	5	261.0	34	5.7	0.108	200	151.00	5.2
1N6070A	181.00	200.00	1	160.0	5	278.0	32	5.4	0.108	200	157.00	5.0
1N6071A	190.00	210.00	1	170.0	5	294.0	30	5.1	0.108	200	169.00	4.7
1N6072A	209.00	231.00	1	185.0	5	328.0	25	4.6	0.108	200	184.00	4.3

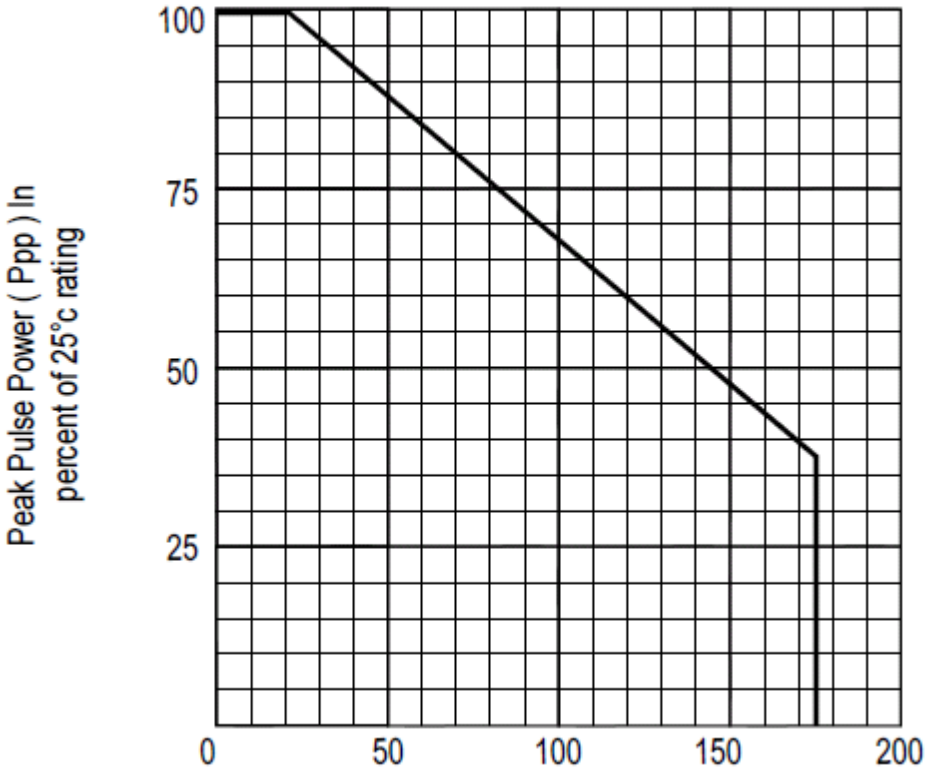
TABLE III. Group E inspection (all quality levels) for qualification only.

Inspection	MIL-STD-750		Sampling plan
	Method	Conditions	
Subgroup 1			n = 45, c = 0
Temperature cycling	1051	Condition C, 500 cycles, -55°C to +175°C.	
Electrical measurements		See table IV. Steps 1, 2, 3, 4, and 5.	
Subgroup 2			n = 22, c = 0
Life test		1,000 hours. See 4.3.1	
Electrical measurements		See table IV, Steps 1, 2, 3, 4, and 5.	
Subgroups 3, 4, and 5			
Not applicable			
Subgroup 7			n = 45, c = 0
Soldering heat	2031		
Subgroup 8			
Peak pulse current		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.	
Electrical measurements		See table IV, steps 1, 2, 3, 4, and 5.	

TABLE IV. Groups B, C, and E electrical measurements. 1/ 2/ 3/ 4/ 5/

Step	Inspection	MIL-STD-750		Symbol	Limits 6/		Unit
		Method	Conditions		Min	Max	
1.	Standby current	4016	DC method, $V_R = V_{WM}$ column 4 of table II	I_D		Column 5	µA
2.	Breakdown voltage	4022	$t_p \leq 300$ ms, duty cycle ≤ 2 percent, I_{BR} = column 3 of table II	V_{BR}	Column 2	Column 2	V
3.	Standby current	4016	DC method; $V_R = V_{WM}$ column 4 of table II	ΔI_D 6/		100 percent of initial reading or 20 percent of column 5 of table II, whichever is greater.	
4.	Breakdown voltage	4022	$t_p \leq 300$ ms, duty cycle ≤ 2 percent, I_{BR} = column 3 of table II	ΔV_{BR} 6/		± 5 percent of initial value	
5.	Clamping voltage		t_p = 1.0 ms (see 4.5.2.a); I_{PP} = column 7 of table II	V_C		Column 6	V

1/ All electrical testing shall be performed twice, once in each direction.
2/ The electrical measurements for group B, table E-VIB (JAN, JANTX and JANTXV) of MIL-PRF-19500 are as follows:
   a. Subgroup 2, see table IV herein, steps 1 and 2.
   b. Subgroup 6 see table IV herein, steps 1, 2, 3 and 4.
3/ The electrical measurements for group C, table E-VII of MIL-PRF-19500 are as follows:
   a. Subgroup 2 and 3, see table IV herein, steps 1 and 2 for JAN,JANTX, and JANTXV.
   b. Subgroup 9, see table IV herein, steps 1 and 2 for all levels.
4/ Column references are to table II.
* 5/ The electrical measurements for table E-IX of MIL-PRF-19500 are as follows: Subgroups 1, 2 and 8, see table IV herein, steps 1, 2, 3, 4, and 5.
6/ Devices which exceed the group A limits for this test shall not be accepted.



* FIGURE 2. Derating curve.

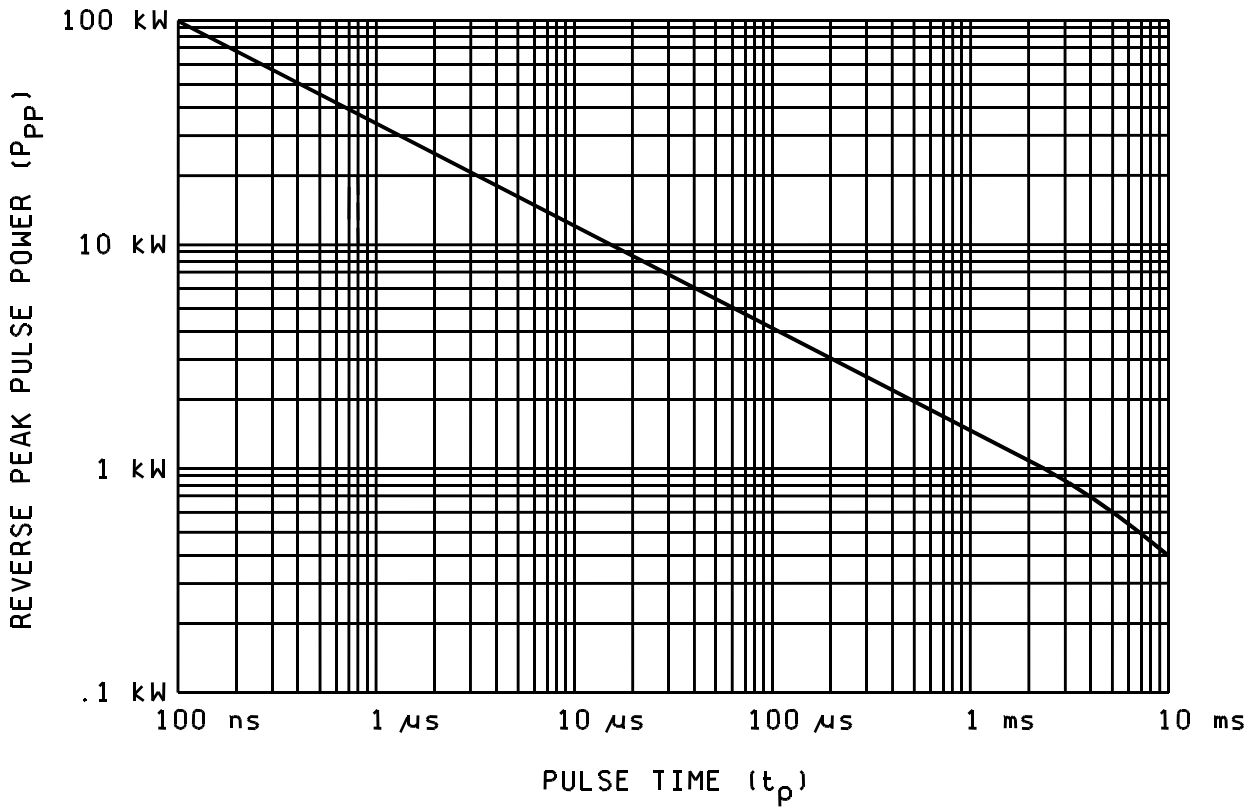
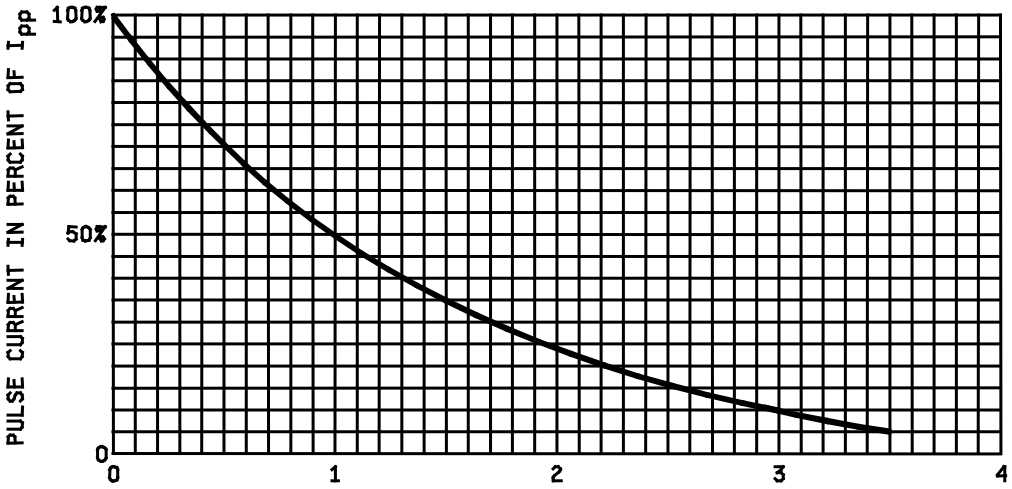
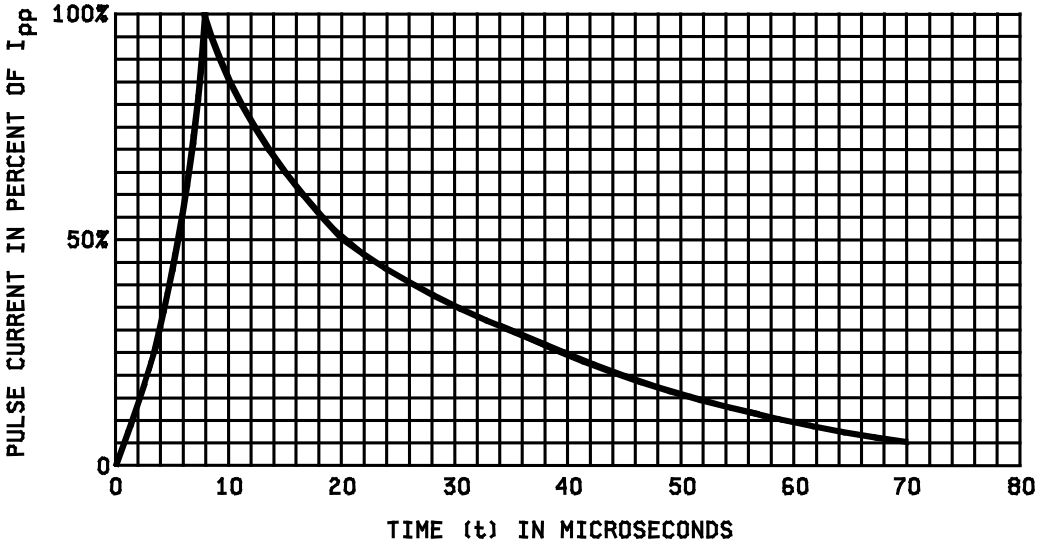


FIGURE 3. Peak pulse power versus pulse time.



NOTE: Pulse time duration is defined as that point where the pulse current decays to 50 percent of I_{PP}. (Rise time to 100 percent of I_{PP} = 10 μs).

FIGURE 4. Current impulse waveform (see 4.5.2.a).



NOTE: Pulse time duration is defined as that point where the pulse current decays to 50 percent of I_{PP}. (Rise time to 100 percent of I_{PP} = 8 μs).

FIGURE 5. Current impulse waveform (see 4.5.2.b).

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).

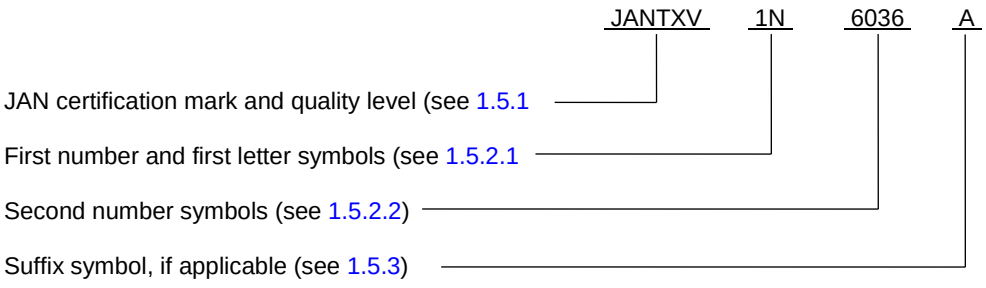
* d. The complete Part or Identifying Number (PIN), see title and section 1.

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://assist.dla.mil.

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

* 6.5 PIN construction example.

* 6.5.1 Encapsulated devices The PINs for encapsulated devices are constructed using the following form.



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

PINs for types 1N6036A through 1N6072A.		
JAN1N6036A	JANTX1N6036A	JANTXV1N6036A
JAN1N6037A	JANTX1N6037A	JANTXV1N6037A
JAN1N6038A	JANTX1N6038A	JANTXV1N6038A
JAN1N6039A	JANTX1N6039A	JANTXV1N6039A
JAN1N6040A	JANTX1N6040A	JANTXV1N6040A
JAN1N6041A	JANTX1N6041A	JANTXV1N6041A
JAN1N6042A	JANTX1N6042A	JANTXV1N6042A
JAN1N6043A	JANTX1N6043A	JANTXV1N6043A
JAN1N6044A	JANTX1N6044A	JANTXV1N6044A
JAN1N6045A	JANTX1N6045A	JANTXV1N6045A
JAN1N6046A	JANTX1N6046A	JANTXV1N6046A
JAN1N6047A	JANTX1N6047A	JANTXV1N6047A
JAN1N6048A	JANTX1N6048A	JANTXV1N6048A
JAN1N6049A	JANTX1N6049A	JANTXV1N6049A
JAN1N6050A	JANTX1N6050A	JANTXV1N6050A
JAN1N6051A	JANTX1N6051A	JANTXV1N6051A
JAN1N6052A	JANTX1N6052A	JANTXV1N6052A
JAN1N6053A	JANTX1N6053A	JANTXV1N6053A
JAN1N6054A	JANTX1N6054A	JANTXV1N6054A
JAN1N6055A	JANTX1N6055A	JANTXV1N6055A
JAN1N6056A	JANTX1N6056A	JANTXV1N6056A
JAN1N6057A	JANTX1N6057A	JANTXV1N6057A
JAN1N6058A	JANTX1N6058A	JANTXV1N6058A
JAN1N6059A	JANTX1N6059A	JANTXV1N6059A
JAN1N6060A	JANTX1N6060A	JANTXV1N6060A
JAN1N6061A	JANTX1N6061A	JANTXV1N6061A
JAN1N6062A	JANTX1N6062A	JANTXV1N6062A
JAN1N6063A	JANTX1N6063A	JANTXV1N6063A
JAN1N6064A	JANTX1N6064A	JANTXV1N6064A
JAN1N6065A	JANTX1N6065A	JANTXV1N6065A
JAN1N6066A	JANTX1N6066A	JANTXV1N6066A
JAN1N6067A	JANTX1N6067A	JANTXV1N6067A
JAN1N6068A	JANTX1N6068A	JANTXV1N6068A
JAN1N6069A	JANTX1N6069A	JANTXV1N6069A
JAN1N6070A	JANTX1N6070A	JANTXV1N6070A
JAN1N6071A	JANTX1N6071A	JANTXV1N6071A
JAN1N6072A	JANTX1N6072A	JANTXV1N6072A

* 6.7 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 previous issue.

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

Review activities:
Army - MI
Air Force - 19, 99

Preparing activity:
DLA - CC

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* 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/.