

The documentation and process conversion measures necessary to comply with this revision shall be completed by 28 June 1997.

INCH POUND

MIL-PRF-19500/231G
28 March 1997
SUPERSEDING
MIL-S-19500/231F
23 September 1993

PERFORMANCE SPECIFICATION SHEET
SEMICONDUCTOR DEVICE, DIODE, SILICON, SWITCHING
TYPES 1N3600, 1N4150-1, AND 1N4150UR-1
JAN, JANTX, AND JANTXV

JANS1N4150-1 is superseded by MIL-S-19500/609
JANS1N6640 (see 6.3 and 6.3.1).

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 performance requirements for silicon, switching diodes. Three levels of product assurance are provided for each device type as specified in MIL-PRF-19500 (see 6.2).

1.2 Physical dimensions. See figures 1 (similar to D0-7, 35) and 2 (D0-213AA).

1.3 Maximum ratings.

| Type | $V_{(BR)}$ | V_{RWM} | I_O 1/ | I_{FSM} | T_{STG}, T_J | $Z_{\theta JX(max)}$ | $R_{\theta UL(max)}$ | $R_{\theta JEC(max)}$ |
|----------|------------------|-----------|---------------------|-----------------|-------------------|----------------------|----------------------|-----------------------|
| | $I_R = 10 \mu A$ | | $T_A = +25^\circ C$ | $t_p = 1 \mu s$ | T_L or T_{EC} | | | 2/ |
| | V dc | V (pk) | mA | A (pk) | °C | °C/W | °C/W | °C/W |
| 1N3600 | 75 | 50 | 200 | 4.0 | -65 to +175 | 70 | 250 | 100 |
| 1N4150-1 | 75 | 50 | 200 | 4.0 | -65 to +175 | 70 | 250 | 100 |

1/ Derate at 2.0 mA dc/°C above $T_L = +75^\circ C$ for axial lead L = 3/8 inches or derate 3.1 mA dc/°C above $T_{EC} = 110^\circ C$ for UR suffix devices.

2/ For UR devices only.

1.4 Primary electrical characteristics at $T_A = +25^\circ C$, unless otherwise indicated.

| | V_{F1} | V_{F2} | V_{F3} | V_{F4} | V_{F5} | I_{R1} at |
|---------|-------------------------|--------------------------|--------------------------------------|---------------------------------------|---------------------------------------|-------------------------|
| Limits | $I_F = 1 \text{ mA dc}$ | $I_F = 10 \text{ mA dc}$ | $I_F = 50 \text{ mA dc}$ (pulsed) | $I_F = 100 \text{ mA dc}$ (pulsed) | $I_F = 200 \text{ mA dc}$ (pulsed) | $V_R = 50 \text{ V dc}$ |
| | V dc | V dc | V dc | V dc | V dc | $\mu A \text{ dc}$ |
| minimum | 0.540 | 0.660 | 0.760 | 0.820 | 0.870 | ----- |
| maximum | 0.620 | 0.740 | 0.860 | 0.920 | 1.000 | 0.1 |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAT, 3990 East Broad St., Columbus, OH 43216-5000, by using the addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

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FSC 5961

1.4 Primary electrical characteristics at $T_A = +25^\circ\text{C}$. unless otherwise indicated - Continued.

| | | | |
|---------|--|---|---|
| | I_{R2} | C | t_{rr1} |
| Limits | $V_R = 50\text{ V dc}$ $T_A = +150^\circ\text{C}$ | $V_R = 0; f = 1\text{ Mhz};$ ac signals = 50 mV(p-p) | $I_F = I_R = 10\text{ to }100\text{ mA dc};$ $R_L = 100\text{ ohms}$ |
| | <u>$\mu\text{A dc}$</u> | <u>μF</u> | <u>ns</u> |
| minimum | ---- | ---- | ---- |
| maximum | 100 | 2.5 | 4 |

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 documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 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

DEPARTMENT OF DEFENSE

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

STANDARD

MILITARY

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

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated specifications or specification sheets), 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

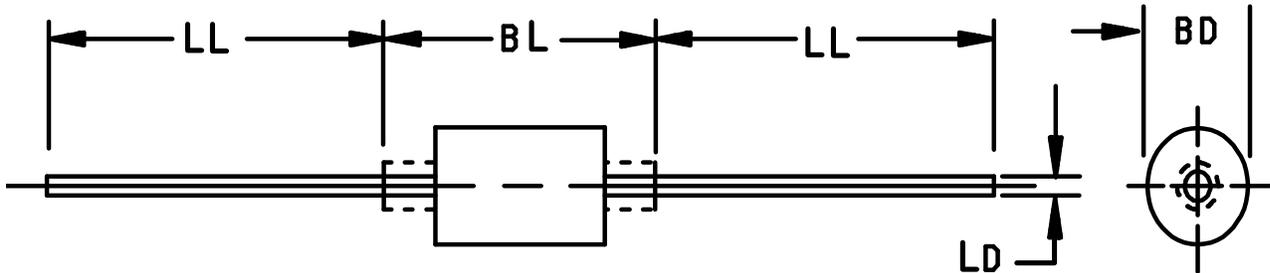
3.1 Associated specification. The individual item requirements shall be in accordance with MIL-PRF-19500 and as specified herein.

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

V_{fr} ----- Forward recovery voltage. Specified maximum forward voltage used to determine forward recovery time.

I_{BR} ----- -Current for testing reverse breakdown voltage.

EC -----Endcap

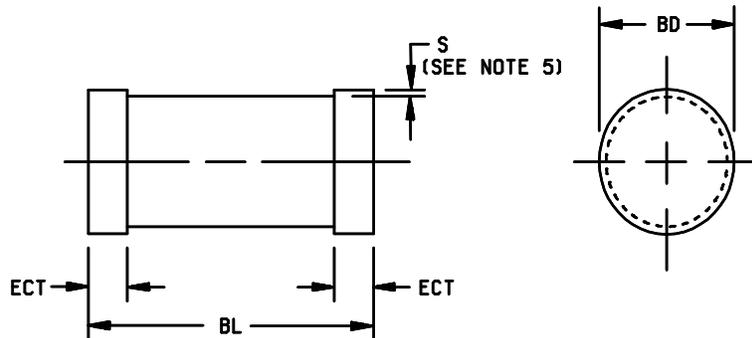


| Type | Symbol | Dimensions | | | | Notes |
|--------|--------|------------|-------|-------------|-------|-------|
| | | Inches | | Millimeters | | |
| | | Min | Max | Min | Max | |
| 1N3600 | BD | 0.056 | 0.107 | 1.42 | 2.72 | 3,4 |
| | BL | 0.140 | 0.300 | 3.56 | 7.62 | |
| | LD | 0.018 | 0.022 | 0.46 | 0.56 | 6 |
| | LL | 1.00 | 1.50 | 25.40 | 38.10 | 4,5 |
| 1N4150 | BD | 0.056 | 0.075 | 1.42 | 1.91 | 3,4 |
| | BL | 0.140 | 0.180 | 3.56 | 4.57 | 5 |
| | LD | 0.018 | 0.022 | 0.46 | 0.56 | 6 |
| | LL | 1.000 | 1.500 | 25.40 | 38.10 | 2 |

NOTES:

1. Metric equivalents are given for general information only.
2. Both leads shall be within the specified limits (see 3.3.1).
3. The maximum diameter of dimension B shall apply over full length of dimension A.
4. The minimum diameter of dimension B shall apply over at least .075 inch (1.91 mm) of dimension A.
5. Ferrule is optional on type 1N3600 and 1N4150-1 for dimension A.
6. The specified lead diameter applies in the zone between .050 inch (1.27 mm) and 1.00 inches (25.4 mm) from the diode body to the end of the lead. Outside of this zone the lead diameter shall not exceed diameter B.

FIGURE 1. Physical dimensions (types 1N3600 and 1N4150-1)



| Symbol | Dimensions | | | |
|--------|------------|------|-------------|------|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| BD | .063 | .067 | 1.60 | 1.70 |
| ECT | .016 | .022 | 0.41 | 0.55 |
| BL | .130 | .146 | 3.30 | 3.70 |
| S | .001 min | | 0.03 min | |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Dimensions are pre-solder dip.
4. In accordance with ANSI Y14.5M, diameters are equivalent to ϕx symbology.
5. Minimum clearance of glass body to mounting surface on all orientations.

FIGURE 2. Physical dimensions and configuration for 1N4150UR-1 (DO-213AA).

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

3.3.1 Lead finish. Lead finish shall be solderable in accordance with MIL-STD-750 and MIL-PRF-19500, and herein. Lead finish may be specified in the contract (see 6.2), without affecting the qualified product status of the device or applicable JAN marking.

3.3.2 Diode construction. All "-1" devices shall be metallurgically bonded double plug construction in accordance with the requirements of category I, II, or III (see MIL-PRF-19500). The UR version devices shall be structurally identical to the leaded devices, except for lead terminations.

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

3.4.1 Marking for UR devices. For UR 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. The polarity of all types shall be indicated with a contrasting color band to denote the cathode end. For UR suffix devices a minimum of three contrasting color dots spaced around the cathode end of the device may be used.

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

3.7 Electrical test requirements. The electrical test requirements shall be the subgroups specified in paragraphs 4.4.2 and 4.4.3.

3.8 Qualification. Devices furnished under this specification shall be products that are authorized by the qualifying activity for listing on the applicable qualified products list before contract award (see 4.2 and 6.2).

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 MIL-PRF-19500, and as specified herein.

4.2.1 Construction verification. Cross sectional photos from 3 devices shall be submitted in the qualification report.

4.2.2 Group E inspection. Group E inspection shall be in accordance with MIL-PRF-19500 and table II herein. Thermal resistance read and record data shall be included in the qualification report.

4.3 Screening (JAN, JANTX, AND JANTXV levels only). Screening shall be in accordance with MIL-PRF-19500 (table IV), 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 IV of MIL-PRF-19500) | Measurement | |
|--|---|---|
| | JAN level | JANTX and JANTXV levels |
| 3a | Temperature cycling per MIL-PRF-19500 "TX level". | Temperature cycling per MIL-PRF-19500. |
| 3c <u>1/</u> | Thermal impedance (see 4.5.5) | Thermal impedance (see 4.5.5) |
| 9 | Not applicable | Not applicable |
| 10 | Not applicable | Method 1038, condition A, t = 48 hours |
| 11 | Not applicable | I_{R1} and V_{F5} |
| 12 | Not applicable | Method 1038, condition B, t = 48 hours (see 4.3.1) |
| 13 <u>2/ 3/</u> | Not applicable | Subgroup 2 of table I herein; $\Delta I_{R1} \leq 100$ percent of initial value or ± 40 nA dc, whichever is greater. $\Delta V_{F5} \leq \pm 0.025$ V (pk). |

1/ Thermal impedance shall be performed any time after screen 3a, temperature cycling.

2/ Z_{EJX} need not be performed at screen 13 if performed prior to screen 13.

3/ PDA $\leq 5\%$.

4.3.1 Power burn-in conditions. Power burn-in conditions are as follows (see 4.5.3):

- MIL-STD-750, method 1038, test condition B, T_A = room ambient as defined in the general requirements of MIL-STD-750, (see 4.5), $f = 50-60$ Hz, $I_O = 200$ mA dc, $V_{RWM} = 50$ V(pk).
- MIL-STD-750, method 1038, test condition B, $T_A = 120^\circ$ C, $I_f = 33.75$ mA dc.
- MIL-STD-750, method 1038, test condition B, $I_f = 180$ mA dc, T_A = room ambient as defined in the general requirements of paragraph 4.5 of MIL-STD-750.

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. Thermal impedance Z_{EJX} conditions are as follows:

$I_H = 300$ mA to 500 mA

$t_H = 10$ ms

$I_M = 1$ mA to 10 mA

$t_{MD} = 100$ μ 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 VIb (JAN, JANTX, and JANTXV) of MIL-PRF-19500. Electrical measurements (end-points) shall be in accordance with the applicable steps and footnotes of table III herein.

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

| <u>Subgroup</u> | <u>Method</u> | <u>Condition</u> |
|-----------------|---------------|---|
| 2 | 4066 | Test condition A, $I_{FSM} = 0.5$ A (pk); $I_D = 0$; 10 surges at 1 per minute (max) surge; duration = 1 s. |
| 3 | 1027 | T_A = room ambient as defined in the general requirements of MIL-STD-750, (see 4.5), $f = 50$ -60 Hz (see 4.5.1); $I_O = 200$ mA. $V_R = V_{RM} = 50$ V (pk). |
| 4 | 2075 | See 4.5.4 herein. |
| 5 | 3101 or 4081 | See 4.5.6 herein. |

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

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

| <u>Subgroup</u> | <u>Method</u> | <u>Condition</u> |
|-----------------|---------------|--|
| 2 | 2036 | Tension: Test condition A; weight 4 pounds; $t = 15 \pm 3$ seconds. Lead fatigue: Test condition E; weight = 16 ounces. |
| 6 | 1026 | T_A = room ambient as defined in the general requirements of MIL-STD-750, (see 4.5), $f = 50$ -60 Hz (see 4.5.1); $I_O = 200$ mA. $V_R = V_{RWM} = 50$ V (pk). |

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

4.5.1 Life tests. AC tests shall be conducted with a half-sine wave of the peak voltage specified herein impressed across the diode in the reverse direction, followed by a half-sine waveform of the average rectified current specified herein. The forward conduction angle of the rectified current shall be not greater than 180° nor less than 150° .

4.5.2 Forward recovery voltage and time. Forward recovery time shall be measured as the time interval between zero time and the point where the pulsed has decreased to 110 percent of the steady-state value of V_F when $I_F =$ as specified in Group A, subgroup 7. The maximum rise time of the response detector shall be 1 ns.

4.5.3 Pulse measurements. Conditions of pulsed measurements shall be specified in section 4 of MIL-STD-750.

4.5.4 Decap internal visual scribe and break for -1 devices (DPA). Scratch glass at cavity area with diamond scribe. Carefully snap open. Using 30X magnification examine the area where die (or bond material) are in contact with the plugs, verify metallurgical bonding area. If the verification of the metallurgical bonding area is in question, an engineering evaluation shall be performed and the devices disposition accordingly.

4.5.5 Thermal impedance ($Z_{\theta JX}$ measurements). The $Z_{\theta JX}$ measurements shall be performed in accordance with MIL-STD-750, method 3101. The maximum limit (not to exceed the Group A, Subgroup 2 limit) for $Z_{\theta JX}$ in screening (table IV of MIL-PRF-19500) shall be derived by each vendor by means of statistical process control. When the process has exhibited control and capability, the capability data shall be used to establish the fixed screening limit. In addition to screening, once a fixed limit has been established, monitor all future sealing lots using a random five piece sample from each lot to be plotted on the applicable X, R chart. If a lot exhibits an out of control condition, the entire lot shall be removed from the line and held for Engineering evaluation and disposition.

4.5.5.1 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.

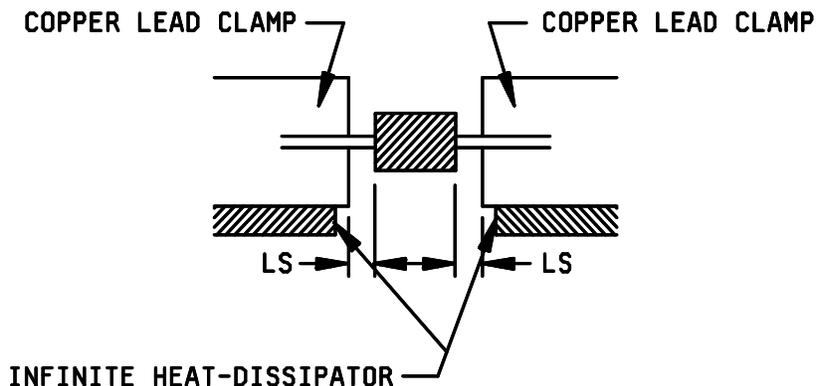
4.5.6 Thermal resistance. Thermal resistance measurement shall be performed in accordance with MIL-STD-750, method 3101 or 4081. Forced moving air or draft shall not be permitted across the devices during test. The maximum limit for $R_{\Theta JL}$ under these test condition shall be $R_{\Theta JL(max)}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

$I_H = 75 \text{ mA to } 300 \text{ mA}$

$t_H = 25 \text{ seconds minimum}$

$I_M = 1 \text{ mA to } 10 \text{ mA}$

$t_{MD} = 70 \mu\text{s maximum}$



LS = Lead spacing = 3/8 inch as defined on figure 3
 LS = 0 for UR versions.

FIGURE 3. Mounting arrangement.

TABLE I. Group A inspection.

| Inspection ^{1/} | 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 4.4.1 | $Z_{\Theta JX}$ | | 70 | °C/W |
| Forward voltage | 4011 | $I_F = 1$ mA dc | V_{F1} | 0.540 | 0.620 | V dc |
| Forward voltage | 4011 | $I_F = 10$ mA dc | V_{F2} | 0.660 | 0.740 | V dc |
| Forward voltage | 4011 | $I_F = 50$ mA dc (pulsed) see 4.5.1 | V_{F3} | 0.760 | 0.860 | V dc |
| Forward voltage | 4011 | $I_F = 100$ mA dc (pulsed) see 4.5.1 | V_{F4} | 0.820 | 0.920 | V dc |
| Forward voltage | 4011 | $I_F = 200$ mA dc (pulsed) see 4.5.1 | V_{F5} | 0.870 | 1.000 | V dc |
| Breakdown voltage | 4021 | $I_{(BR)} = 10$ μ A dc | V_{BR1} | 75 | | V dc |
| Reverse current | 4016 | DC method; $V_R = 50$ V dc | I_{R1} | | 0.10 | μ A dc |
| <u>Subgroup 3</u> | | | | | | |
| High temperature operation | | $T_A = +150^\circ$ C | | | | |
| Reverse current | 4016 | DC method; $V_R = 50$ V dc | I_{R2} | | 100 | μ A dc |
| <u>Subgroup 4</u> | | | | | | |
| Junction capacitance | 4001 | $V_R = 0$ V dc; $f = 1$ MHz; $V_{sig} = 50$ mVp-p maximum | C | | 2.5 | pF |
| Reverse recovery time | 4031 | Test condition A; $I_F = I_{RM} = 10$ to 100 mA dc; $R_L = 100$ ohms; $C \geq 1$ nF; $R \geq 1000 \Omega$; $i_{R(REC)} = 10\% I_{RM}$ | t_{rr1} | | 4 | ns |
| <u>Subgroups 5 and 6</u> | | | | | | |
| Not applicable | | | | | | |
| <u>Subgroup 7</u> | | | | | | |
| Forward recovery voltage and time | 4026 | $I_F = 200$ mA dc; $t_r = 0.4$ ns; (see 4.5.2) | V_{fr} t_{fr} | | 5 10 | V (pk) ns |

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

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

| Inspection 1/ | MIL-STD-750 | | Sampling plan |
|--|--------------------|--|------------------|
| | Method | Conditions | |
| <u>Subgroup 1</u> | | | 45 devices c = 0 |
| Temperature shock (glass strain) | 1056 | 500 cycles | |
| Electrical measurement | | See table III, steps 1, 2, and 3. | |
| <u>Subgroup 2</u> | | | |
| Intermittent operating life | 1037 | 6,000 cycles; $V_{RWM} = 50 \text{ V}$; $I_O = 200 \text{ mA}$ | 45 devices c = 0 |
| Electrical measurement | | See table III, steps 1, 2, and 3. | |
| <u>Subgroup 3</u> | | | |
| Not applicable | | | |
| <u>Subgroup 4</u> | | | 22 devices c = 0 |
| Thermal resistance | 3101 or 4081 | See 4.5.6 | |
| <u>Subgroup 5</u> | | | 45 devices c = 0 |
| Monitored mission temperature cycling | 1055 | | |
| Electrical measurements | | See table III, steps 1, 2, and 3 | |

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

TABLE III. Groups A, B, C, and E electrical measurements. 1/ 2/

| Step | Inspection | MIL-STD-750 | | Symbol | Limits | | Unit |
|------|-------------------|-------------|-------------------------------|-----------------|--------|-------|----------------|
| | | Method | Conditions | | Min | Max | |
| 1 | Forward voltage | 4011 | $I_F = 200$ mA dc (pulsed) | V_{F5} | 0.870 | 1.000 | V dc |
| 2 | Reverse current | 4016 | DC method; $V_R = 50$ V dc | I_{R1} | | 0.10 | μ A dc |
| 3 | Thermal impedance | 3101 | see 4.5.5 | $Z_{\theta JX}$ | | 50 | $^{\circ}$ C/W |

1/ The electrical measurements for table VIb of MIL-PRF-19500 are as follows:
Subgroups 2, 3, and 6, see table III herein, steps 1, 2, and 3.

2/ The electrical measurements for table VII of MIL-PRF-19500 are as follows:
Subgroups 2 and 6, see table III herein, steps 1, 2, and 3.

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 material is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Points' packaging activity within the Military Department or Defense Agency, or within the Military Departments' System Command. Packaging data retrieval is available from the managing Military Departments' or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

5.2 Marking. Unless otherwise specified (see 6.2), marking shall be in accordance with MIL-STD-129.

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-PRF-19500 are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Issue of DODISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.2.1).
- b. Lead finish (see 3.3.1).
- c. Type designation and product assurance level.
- d. Packaging requirements (see 5.1).

6.3 Substitution information. The 1N6640 (MIL-S-19500/609) supersedes the 1N4150-1. The JANS1N6640 supersedes the JANS1N4150-1. Existing stock of JANS1N4150-1 may be used until exhausted.

6.3.1 Cross reference supersession list. JANS level will no longer be built to this specification. Devices in stock are acceptable provided the date code does not exceed the date of implementation of this specification. Devices required for space flight applications are found on MIL-S-19500/609. A PIN for PIN replacement table follows, and these devices are directly interchangeable:

| JANS Nonpreferred PIN | JANS Preferred PIN |
|--------------------------|-----------------------|
| 1N4150-1 | 1N6640 |

6.4 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 Products List QPL-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 purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from Defense Supply Center Columbus, DSCC-VQE, Columbus, OH 43216.

6.5 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.

MIL-PRF-19500/231G

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 17

Preparing activity:

DLA - CC

(Project 5961-3467-01)

Review activities:

Army - AR, AV, MI, SM
Navy - AS, CG, MC
Air Force - 19, 85, 99
NASA - NA

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.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

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I RECOMMEND A CHANGE :

1. DOCUMENT NUMBER
MIL-PRF-19500/231G

2. DOCUMENT DATE
(YYMMDD) 97/03/28

3. DOCUMENT TITLE SEMICONDUCTOR DEVICE, DIODE, SILICON, SWITCHING TYPES 1N3600, 1N4150-1, AND 1N4150UR-1 JAN, JANTX, AND JANTXV

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(If applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME
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(1) Commercial (2) AUTOVON
614-692-0510 850-0510

c. ADDRESS (Include Zip Code)
Defense Supply Center Columbus
ATTN: DSCC-VAT
Columbus, OH 43216-5000

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