

The documentation and process conversion measures necessary to comply with this document shall be completed by 22 February, 2002.

INCH-POUND
MIL-PRF-19500/696
22 November 2001

PERFORMANCE SPECIFICATION

SEMICONDUCTOR DEVICE, FIELD EFFECT TRANSISTOR, PLASTIC, N-CHANNEL, SILICON TYPE 2N7537, 2N7537A, JAN, JANTX

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 two plastic N-channel, enhancement-mode, MOSFET, power transistors. Two levels of product assurance are provided for each device type as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figure 1, TO-220AB.

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

Types	P_T (1) $T_C = +25^\circ\text{C}$	V_{DS}	V_{DG}	V_{GS}	I_{D1} $T_C = +25^\circ\text{C}$ (2)	I_{D2} $T_C = +100^\circ\text{C}$ (2)	I_S	I_{DM} (3)	T_{OP} and T_{STG}	V_{ISO} 70,000 ft. altitude	$R_{\theta JC}$
	<u>W</u>	<u>V dc</u>	<u>V dc</u>	<u>V dc</u>	<u>A dc</u>	<u>A dc</u>	<u>A dc</u>	<u>A dc</u>	<u>°C</u>	<u>V dc</u>	<u>°C/W</u>
2N7537	125	500	500	± 30	8.0	5.1	8.0	32	-55 to	500	1.0
2N7537A	125	500	500	± 30	8.0	5.1	8.0	32	+150	500	1.0

(1) Derate linearly 1.0 W/°C for $T_C > +25^\circ\text{C}$;

(2)

$$I_D = \sqrt{\frac{T_{J \max} - T_C}{(R_{\theta JC}) \times (r_{Dson} \text{ at } T_{J \max})}}$$

(3) $I_{DM} = 4 \times I_{D1}$ as calculated in footnote (2).

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

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1.4 Primary electrical characteristics at T_C = +25°C.

Type	Min V _{(BR)DSS} V _{GS} = 0	V _{GS(TH)} V _{DS} ≥ V _{GS}		Max I _{DSS1} V _{GS} = 0 V _{DS} = 100	Max r _{DS(ON)} (1) V _{GS} = 10 V dc		E _{AS} at I _{D1}	I _{AS}
		V dc			ohm	ohm		
	V dc	Min	Max	μA dc	ohm	ohm	mJ	A
2N7537	500	2.0	4.0	25	0.85	2.125	510	8.0
2N7537A	500	2.0	4.0	25	0.85	2.125	510	8.0

(1) Pulsed (see 4.5.1).

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 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 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

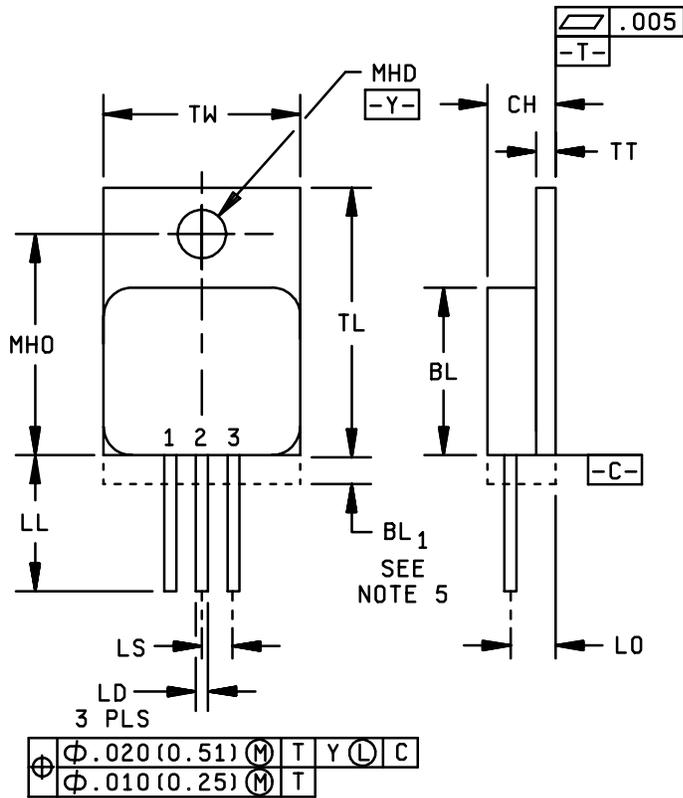
MIL-PRF-19500 - Semiconductor Devices, General Specification for.

STANDARD

DEPARTMENT OF DEFENSE

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

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Document Automation and Production Services (DAPS), Building 4D (DPM-DODSSP), 700 Robbins Avenue, Philadelphia, PA 19111-5094.)



Ltr	Inches		Millimeters	
	Min	Max	Min	Max
BL	.240	.255	6.10	6.47
BL ₁	.140	.160	3.55	4.06
CH	.165	.185	4.20	4.69
LD	.045	.055	1.15	1.40
LL	.530	.555	13.47	14.09
LO	.104	.115	2.64	2.92
LS	.100 BSC		2.54 BSC	
MHD	.139	.149	3.54	3.78
MHO	.584	.600	12.22	12.37
TL	.584	.6	13.49	15.24
TT	.048	.052	1.22	1.32
TW	.405	.415	10.29	10.54
Term 1	Gate			
Term 2	Drain			
Term 3	Source			

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. The US Government preferred system of measurement is the metric SI system. However, this item was originally designed using inch-pound units of measurement. In the event of a conflict between the metric and inch-pound units, the inch-pound units shall take precedence.
4. All terminals are isolated from the case.
5. This area is for the lead feed-thru eyelets (configuration is optional, but will not extend beyond this zone).

FIGURE 1. Physical dimensions for TO-220AB (2N7537 and 2N7537A).

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

JESD22-A101	Steady State Temperature Humidity Bias Life Test.
JESD22-A102	Accelerated Moisture Resistance - Unabashed Autoclave.
JESD22-A112	A Moisture-Induced Stress Sensitivity for Plastic Surface Mount Devices.

(Applications for copies should be addressed to the Electronics Industries Alliance, 2500 Wilson Boulevard, Arlington, VA 22201-3834.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents may also be available in or through libraries or other informational services.)

2.4 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 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 requirements for acquiring the product described herein shall consist of this document and MIL-PRF-19500.

3.2 Qualification. Devices furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturer's list (QML) before contract award (see 4.2 and 6.3).

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

I_{AS} - Rated avalanche current, nonrepetitive.

3.4 Interface and physical dimensions. Interface and physical dimensions shall be as specified in MIL-PRF-19500, and on figure 1.

3.4.1 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).

3.4.2 Internal construction. Multiple chip construction is not permitted to meet the requirements of this specification.

3.5 Electrostatic discharge protection. The devices covered by this specification require electrostatic discharge protection.

3.5.1 Handling. MOS devices must be handled with certain precautions to avoid damage due to the accumulation of static charge. However, the following handling practices are recommended (see 3.5).

- a. Devices should be handled on benches with conductive handling devices.
- b. Ground test equipment, tools, and personnel handling devices.
- c. Do not handle devices by the leads.
- d. Store devices in conductive foam or carriers.
- e. Avoid use of plastic, rubber, or silk in MOS areas.
- f. Maintain relative humidity above 50 percent if practical.
- g. Care should be exercised during test and troubleshooting to apply not more than maximum rated voltage to any lead.
- h. Gate must be terminated to source, $R \leq 100 \text{ k}$, whenever bias voltage is to be applied drain to source.

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

3.7 Electrical test requirements. The electrical test requirements shall be group A as specified herein.

3.8 Marking. Marking shall be in accordance with MIL-PRF-19500, except as specified herein.

3.8.1 JAN brand. The "J" denotes the JAN brand. Refer to the certificate of conformance or unit packaging for quality assurance level.

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 MIL-PRF-19500 and as specified herein.

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4.3 **Screening (JANTX).** For appendix D qualified suppliers, screening shall be in accordance with table 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. For appendix C qualified suppliers (QML), refer to QM plan for screening requirements.

Screen (see table IV of MIL-PRF-19500)	Measurement
	JANTX Level
1a	Not applicable
1b	Not required
2	Not required
3a	Required
3b	Not required
(1) 3c	Thermal impedance (see 4.5.3)
4	Not required
5	Not applicable
6	Not required
7a	Not applicable
7b	Not applicable
8	Not applicable
9	Not required
10	Required, $V_{GS} = 16$ V dc
11	Subgroup 2 of table I herein
12	Required
13a	Subgroup 2 of table I herein $\Delta I_{GSSF1} = \pm 20$ nA dc or ± 100 percent of initial value, whichever is greater. $\Delta I_{GSSR1} = \pm 20$ nA dc or ± 100 percent of initial value, whichever is greater. $\Delta I_{DSS1} = \pm 10$ μ A dc or ± 100 percent of initial value, whichever is greater. $\Delta r_{DS(on)1} = \pm 20$ percent of initial value $\Delta V_{GS(TH)1} = \pm 20$ percent of initial value
13b	Not applicable
14a	Not applicable
14b	Not applicable
15	Not applicable
16	Not applicable

(1) Thermal impedance shall be performed any time after screen 3a.

4.4 Conformance inspection. For appendix D qualified suppliers, conformance inspection shall be in accordance with MIL-PRF-19500, and as specified herein. For appendix C qualified suppliers (QML), refer to QM plan for "On-Going Reliability Monitor Requirements".

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with MIL-PRF-19500 and table I herein. Electrical measurements (end-points) for JAN and JANTX shall be as specified table III, herein.

4.4.2 Group B inspection, JAN and JANTX. Group B inspection shall be conducted in accordance with the conditions specified in 4.4.2.1 for JAN and JANTX and as follows. Electrical measurements (end-points) for JAN and JANTX shall be as specified table III, herein. Separate samples may be used for each step.

<u>Step</u>	<u>Method</u>	<u>Condition</u>
1	2026 1022	Solderability. Resistance to solvents (not required for laser marked devices).
2	1051 1056	Temp. cycle: Condition G, 25 cycles. Thermal shock: 10 cycles, condition A. Electrical measurements, including thermal impedance.
3	1042	Intermittent operation life: Condition D, 2000 cycles. The heating cycle shall be 30 seconds minimum. Electrical measurements, including thermal impedance.
4	2075	Decap internal visual.
5	JESD22-A102	Autoclave: Condition C, 96 hours, n = 15, c = 0.

4.4.2.1 Group B sample selection. Samples for subgroups in group B shall be in accordance with MIL-PRF-19500 and as specified herein. Separate samples may be used for each step. In the event of a group B failure, the manufacturer may pull a new sample at double size from either the failed assembly lot or from another assembly lot from the same wafer lot. If the new "assembly lot" option is exercised, the failed assembly lot shall be scrapped.

4.4.3 Group C inspection. Group C inspection shall be as specified in 4.4.3.1 and shall include tests which are performed periodically. Electrical measurements (end-points) for JAN and JANTX shall be as specified table III, herein. Separate samples may be used for each step. For rules on resubmission for failed steps, see MIL-PRF-19500.

4.4.3.1 Group C inspection, table VII (JAN, and JANTX) of MIL-PRF-19500. Separate samples may be used for each step.

<u>Step</u>	<u>Method</u>	<u>Condition</u>
1	2066	Physical dimensions: In accordance with figure 1 herein.
2	1056	Thermal shock: condition B. Electrical measurements.
3	JESD22-A102	Autoclave: Condition C, 96 hours.
4	JESD22-A101	Moisture resistance (85/85 biased): 50V.
5	3161	Thermal resistance: $R_{\theta JC(max)} = 1.0^{\circ}C/W$.
6	1042	Steady-state operation life: Condition D, 6,000 cycles. The heating cycle shall be 30 seconds minimum.

4.4.3.2 Group C sample selection. Samples for subgroups in group C shall be in accordance with MIL-PRF-19500.

4.4.4 Group E inspection. Group E inspection shall be performed for qualification or re-qualification only. The tests specified in table II herein must be performed to maintain qualification. Separate samples may be used for each subgroup.

4.5 Method 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 section 4 of MIL-STD-750.

4.5.2 Thermal resistance. Thermal resistance measurements shall be performed in accordance with method 3161 of MIL-STD-750. The maximum limit of $R_{\theta JC(max)} = 1.0^{\circ}C/W$. The following parameter measurements shall apply:

- a. Drain heating current (I_H)3.3 A.
- b. Heating time (t_H)Steady-state (see method 3161 of MIL-STD-750 for definition).
- c. Drain-source heating voltage (V_H)25 V.
- d. Measuring current (I_M)10 mA.
- e. Measurement time delay (t_{MD})30 μ s to 60 μ s.
- f. Sample window time (t_{SW})10 μ s maximum.

4.5.3 Thermal impedance ($Z_{\theta JC}$ measurements). The $Z_{\theta JC}$ measurements shall be performed in accordance with method 3161 of MIL-STD-750. The maximum limit (not to exceed figure 2, thermal impedance curves and the group A, subgroup 2 limits) for $Z_{\theta JC}$ in screening (appendix E, 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. This procedure may be used in lieu of an in-line procedure.

- a. Drain heating current (I_H) 3.3 A.
- b. Heating time (t_H) 30 ms.
- c. Drain-source heating voltage (V_H) 25 V.
- d. Measuring current (I_M) 10 mA.
- e. Measurement time delay (t_{MD}) 30 μ s to 60 μ s.
- f. Sample window time (t_{SW}) 10 μ s maximum.

4.5.4 Single pulse avalanche energy (E_{AS}).

- a. Peak current (I_{AS}) $I_{AS(max)}$.
- b. Peak gate voltage (V_{GS}) 10 V.
- c. Gate to source resistor (R_{GS}) $25\Omega \leq R_{GS} \leq 200\Omega$.
- d. Initial case temperature (T_C) $+25^\circ\text{C} +10^\circ\text{C}, -5^\circ\text{C}$.
- e. Inductance (L) $\left[\frac{2E_{AS}}{(I_{DI})^2} \right] \left[\frac{(V_{BR} - V_{DD})}{V_{BR}} \right] \text{mH minimum}$.
- f. Number of pulses to be applied 1 pulse minimum.
- g. Supply voltage (V_{DD}) 50 V.

4.5.5 Gate stress test.

- a. $V_{GS} = 35 \text{ V minimum}$.
- b. $t = 250 \mu\text{s minimum}$.

TABLE I. Group A inspection.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 1</u>						
Visual and mechanical inspection	2071					
<u>Subgroup 2</u>						
Breakdown voltage, drain to source	3407	$V_{GS} = 0$ V dc, $I_D = 0.25$ mA dc, bias condition C	$V_{(BR)DSS}$	500		V dc
Gate to source voltage (threshold)	3403	$V_{DS} \geq V_{GS}$ $I_D = 0.25$ mA dc	$V_{GS(TH)1}$	2.0	4.0	V dc
Gate current	3411	$V_{GS} = +30$ V dc and -30 V dc, bias condition C, $V_{DS} = 0$	$I_{GSS(TH)1}$		± 100	nA dc
Drain current	3413	$V_{GS} = 0$ V dc, bias condition C, $V_{DS} = 500$ V dc	I_{DSS1}		25	μ A dc
Static drain to source on-state resistance	3421	$V_{GS} = 10$ V dc, condition A, pulsed (see 4.5.1) $I_D = 4.8$ A dc	$r_{DS(on)1}$		0.85	ohm
Forward voltage	4011	Pulsed (see 4.5.1), $I_D = I_{D1}$, $V_{GS} = 0$ V dc	V_{SD}		2.0	V dc
<u>Subgroup 3</u>						
High-temperature operation		$T_C = T_J = +125^\circ\text{C}$				
Gate current	3411	$V_{GS} = +30$ V dc and -30 V dc, bias condition C, $V_{DS} = 0$	I_{GSS2}		± 200	nA dc
Drain current	3413	$V_{GS} = 0$ V dc, bias condition C, $V_{DS} = 80$ percent of rated V_{DS}	I_{DSS2}		0.25	mA dc
Static drain to source on-state resistance	3421	$V_{GS} = 10$ V dc, pulsed (see 4.5.1), $I_D = 4.8$ A dc	$r_{DS(on)3}$		1.92	ohm
Gate to source voltage (thresholds)	3403	$V_{DS} \geq V_{GS}$, $I_D = 0.25$ mA dc	$V_{GS(TH)2}$	1.0		V dc
Low-temperature operation:		$T_C = T_J = -55^\circ\text{C}$				
Gate to source voltage (threshold)	3403	$V_{DS} \geq V_{GS}$, $I_D = 0.25$ mA dc	$V_{GS(TH)3}$		5.0	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>						
Forward transconductance 2N7537 2N7537A	3475	$I_D = 4.8 \text{ A dc}$ $V_{DD} \geq 15 \text{ V}$ (see 4.5.1)	g_{FS}	4.9 3.7		S S
Switching time test	3472	$I_D = I_{D1}$, $V_{GS} = 10 \text{ V dc}$, $R_G = 9.1\Omega$, $V_{DD} = 250 \text{ V dc}$				
Turn-on delay time			$t_{d(on)}$		28	ns
Rise time			t_r		45	ns
Turn-off delay time			$t_{d(off)}$			
2N7537					98	ns
2N7537A					52	ns
Fall time			t_f		40	ns
<u>Subgroup 5</u>						
Safe operating area test (high voltage)	3474	See figure 3; $t_p = 10 \text{ ms}$ minimum, $V_{DS} = 200 \text{ V dc}$				
Electrical measurements		See table III.				
<u>Subgroup 6</u>						
Not applicable						
<u>Subgroup 7</u>						
Gate charge	3471	Condition B				
On-state gate charge 2N7537 2N7537A			$Q_{G(on)}$		63 38	nC nC
Gate to source charge 2N7537 2N7537A			Q_{GS}		9.3 9	nC nC
Gate to drain charge 2N7537 2N7537A			Q_{GD}		32 18	nC nC
Reverse recovery time	3473	$d/d_t \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq 30 \text{ V}$, $I_D = I_{D1}$	t_{rr}			
2N7537					970	ns
2N7537A					633	ns

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

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

Inspection	MIL-STD-750 (unless otherwise noted)		Qualification
	Method	Conditions	
<u>Subgroup 1</u>			
Temperature cycling (air to air)	1051	Test condition G, 500cycles	n = 77, c = 0
Electrical measurements		See table III.	
<u>Subgroup 2</u> ^{1/}			n = 77, c = 0
Steady state operation life	1042	1,000 hours, condition B. VGS = 16 V dc	
Electrical measurements		See table III.	
<u>Subgroup 2a</u> ^{1/}			n = 77, c = 0
HTRB	1042	1,000 hours, condition A.	
Electrical measurements		See table III.	
<u>Subgroup 3</u>			
Not applicable			
<u>Subgroup 4</u>			n = 77, c = 0
Moisture resistance	JESD22-A101 ^{2/}	1,000 hours	
Electrical measurements		See table III.	
<u>Subgroup 4a</u>			n = 77, c = 0
Autoclave	JESD22-A102 ^{2/}	96 hours	
Electrical measurements		See table III.	
<u>Subgroup 4b</u>			n = 10, c = 0
Thermal resistance	3161	See figure 2. RTHJC <= 1.0°C/W.	
<u>Subgroup 5</u>			n = 12, c = 0
Barometric pressure (reduced)	1001	VDS = 500 V dc; I (ISO) < 0.25 mA dc	
<u>Subgroup 6</u>			n = 12, c = 0
ESD	JESD22-A112 MM & HBM ^{2/}		

^{1/} Subgroups 2, 2a and 4, 4a and 4b do not need to be performed sequentially.

^{2/} Non-government standard document, see 2.3.

TABLE III. Electrical measurements (end-points).

Inspection	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
Thermal impedance ^{1/}	3161	See 4.5.3	$Z_{\theta JC}$		0.53	°C/W
Breakdown voltage, drain to source	3407	$V_{GS} = 0$ V dc, $I_D = 0.25$ mA dc, bias condition C	$V_{(BR)DSS}$	500		V dc
Gate to source voltage (threshold)	3403	$V_{DS} \geq V_{GS}$ $I_D = 0.25$ mA dc	$V_{GS(TH)1}$	2.0	4.0	V dc
Gate current	3411	$V_{GS} = +30$ V dc and -30 V dc, bias condition C, $V_{DS} = 0$	$I_{GSS(TH)1}$		± 100	nA dc
Drain current	3413	$V_{GS} = 0$ V dc, bias condition C, $V_{DS} = 500$ V dc	I_{DSS1}		25	μ A dc
Static drain to source on-state resistance	3421	$V_{GS} = 10$ V dc, condition A, pulsed (see 4.5.1) $I_D = 4.8$ A dc	$r_{DS(on)1}$		0.85	ohm
Forward voltage	4011	Pulsed (see 4.5.1), $I_D = I_{D1}$, $V_{GS} = 0$ V dc	V_{SD}		2.0	V dc

^{1/} Thermal impedance is required only for: Group B, subgroups 2 and 3; group C, subgroup 6; and group E, subgroup 1.

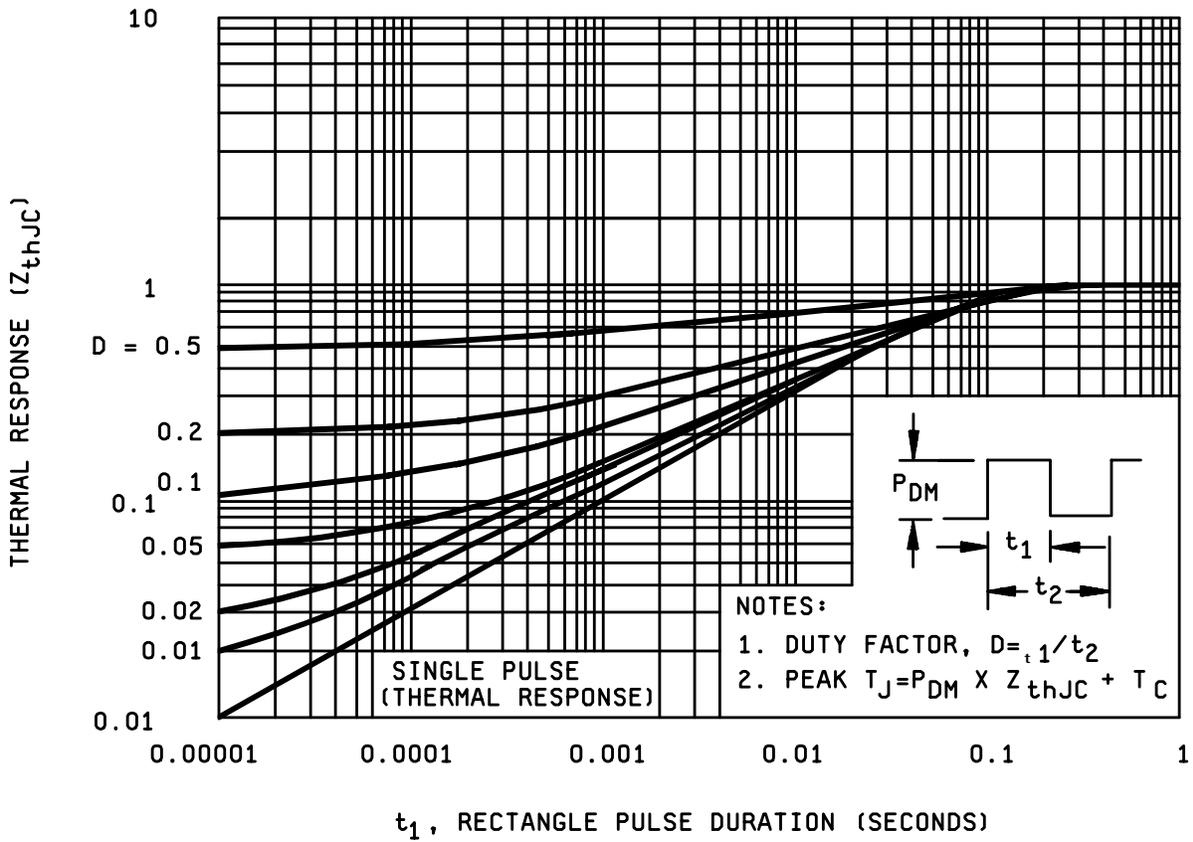


FIGURE 2. Maximum effective transient thermal impedance, junction-to-case.

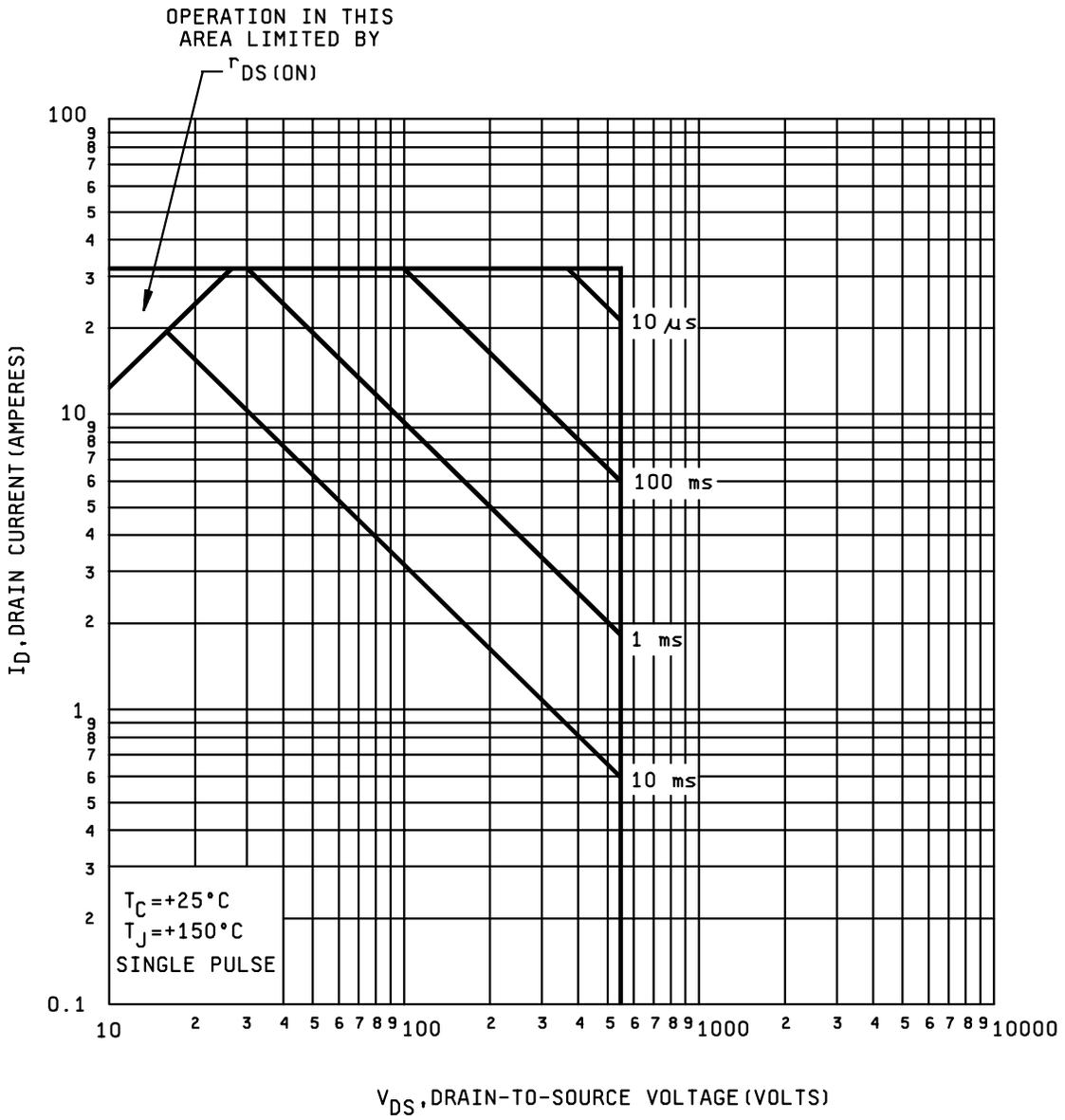


FIGURE 3. Maximum safe operating area.

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 personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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.)

6.1 Intended use. The notes specified in MIL-PRF-19500 are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).
- c. Packaging requirements (see 5.1).
- d. Lead finish (see 3.4.1).

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) 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 Defense Supply Center, Columbus, ATTN: DSCC/VQE, P.O. Box 3990, Columbus, OH 43216-5000.

Custodians:
Army - CR
Navy - NW
Air Force - 11
NASA - NA
DLA - CC

Preparing activity:
DLA - CC

(Project 5961-2496)

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.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-PRF-19500/696	2. DOCUMENT DATE 22 November 2001

3. DOCUMENT TITLE SEMICONDUCTOR DEVICE, FIELD EFFECT TRANSISTOR, PLASTIC, N-CHANNEL, SILICON TYPE 2N7537, 2N7537A, JAN, JANTX.

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) COMMERCIAL DSN FAX EMAIL	7. DATE SUBMITTED

8. PREPARING ACTIVITY

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c. ADDRESS Defense Supply Center Columbus, ATTN: DSCC-VAC, P. O. Box 3990, Columbus, OH 43216-5000	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Standardization Program Office (DLSC-LM) 8725 John J. Kingman, Suite 2533, Fort Belvoir, VA 22060-6221 Telephone (703) 767-6888 DSN 427-6888