The documentation and process conversion measures necessary to comply with this revision shall be completed by 4 August 2007.

INCH-POUND

MIL-PRF-19500/408H
4 May 2007
SUPERSEDING
MIL-PRF-19500/408G
21 July 2005

PERFORMANCE SPECIFICATION SHEET

SEMICONDUCTOR DEVICE, TRANSISTOR, NPN, SILICON, HIGH-POWER,
TYPES 2N3715 AND 2N3716, JAN, JANTX, JANTXV, AND JANS

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 NPN, silicon, high-power transistors. Four levels of product assurance are provided for each device type as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figure 1, similar to TO-3.

1.3 Maximum ratings. Unless otherwise specified, T_C = +25°C.

Types	P_T (1) T_A = +25°C	P_T (2) T_C = +25°C	$R_{\theta JC}$ (3)	V_{CBO}	V_{CEO}	V_{EBO}	I_B	I_C	T_J and T_{STG}
	W	W	°C/W	V dc	V dc	V dc	A dc	A dc	°C
2N3715	5.0	117	1.5	80	60	7.0	4.0	10	-65 to +200
2N3716	5.0	117	1.5	100	80	7.0	4.0	10	-65 to +200

(1) Derate linearly 28.57 mW/°C above T_A = +25°C.
(2) See figure 2 for temperature-power derating curves.
(3) See figure 3, transient thermal impedance graph.

1.4 Primary electrical characteristics. Unless otherwise specified, T_C = +25°C.

Limit	h_{FE2} (1) V_{CE} = 2.0 V dc I_C = 3.0 A dc	h_{FE4} (1) V_{CE} = 4.0 V dc I_C = 10 A dc	$V_{BE(SAT)1}$ (1) I_C = 5.0 A dc I_B = 0.5 A dc	$V_{CE(SAT)1}$ (1) I_C = 5.0 A dc I_B = 0.5 A dc	C_{obo} V_{CB} = 10 V dc, I_E = 0 f = 1 MHz	$\|h_{fe}\|$ V_{CE} = 10 V dc I_C = 0.5 A dc f = 1 MHz
			V dc	V dc	pF	
Min	30	5.0				4.0
Max	120		1.5	1.0	500	20

(1) Pulsed (see 4.5.1).

Comments, suggestions, or questions on this document should be addressed to Defense Supply Center, Columbus, ATTN: DSCC-VAC, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to Semiconductor@dscc.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil/.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE 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://assist.daps.dla.mil/quicksearch/ or http://assist.daps.dla.mil/ or 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, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General. The individual item requirements shall be as specified in MIL-PRF-19500 and as modified herein.

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

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

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

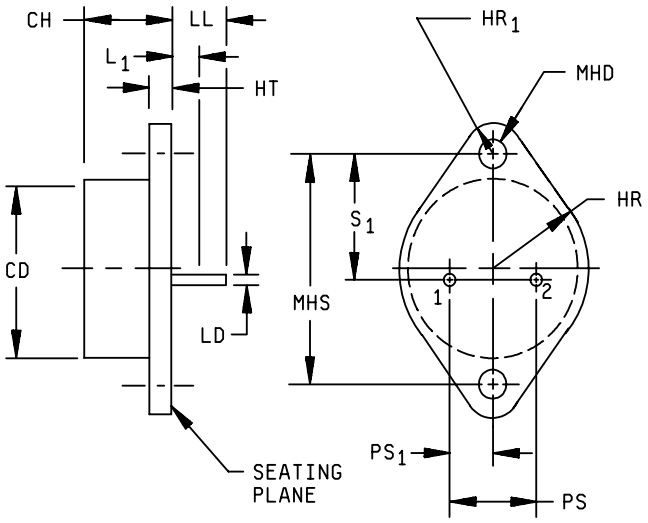
3.4.1 Lead finish. Lead finish shall be solderable in accordance with MIL-PRF-19500, MIL-STD-750, and herein. Where a choice of lead finish is desired, it shall be specified in the acquisition document (see 6.2).

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

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

3.7 Electrical test requirements. The electrical test requirements shall be as specified in table I.

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.



Symbol	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD		.875		22.22	
CH	.270	.380	6.86	9.65	
HT	.060	.135	1.52	3.43	
HR	.495	.525	12.57	13.3	
HR_1	.131	.188	3.33	4.78	
LD	.038	.043	0.97	1.09	7
LL	.312	.500	7.92	12.70	
L_1		.050		1.27	
MHD	.151	.165	3.84	4.19	
MHS	1.177	1.197	29.90	30.40	
PS	.420	.440	10.67	11.18	4
PS_1	.205	.225	5.21	5.72	4
s_1	.655	.675	16.64	17.15	

NOTES:
1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Terminal 1, emitter; terminal 2, base; case, collector.
4. These dimensions should be measured at points .050-.055 inch (1.27-1.40 mm) below seating plane. When gauge is not used, measurement will be made at the seating plane.
5. The seating plane of the header shall be flat within .004 inch (0.10 mm) concave to .004 inch (0.10 mm) convex inside a .930 inch (23.62 mm) diameter circle on the center of the header and flat within .006 inch (0.15 mm) concave to .006 inch (0.15 mm) convex overall.
6. Collector shall be electrically connected to the case.
7. LD applies between L_1 and LL. Lead diameter shall not exceed twice LD within L_1.
8. In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

* FIGURE 1. Physical dimensions of transistor types 2N3715 and 2N3716 (TO-3).

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 and tables I and II).

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

4.2.1 Group E qualification. Group E inspection shall be performed for qualification or re-qualification 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 in the prior revision shall be performed on the first inspection lot of this revision to maintain qualification.

4.3 Screening (JANS, JANTX and JANTXV levels only). Screening shall be in accordance with table E-IV of MIL-PRF-19500 and as specified herein. The following measurements shall be made in accordance with table I herein. Devices that exceed the limits of table I herein shall not be acceptable.

Screen (see table E-IV of MIL-PRF-19500)	Measurement	
	JANS level	JANTX and JANTXV levels
(1) 3c	Thermal impedance (transient), method 3131 of MIL-STD-750 (see 4.3.2).	Thermal impedance (transient), method 3131 of MIL-STD-750 (see 4.3.2).
9	I_{CES1} and h_{FE2}	I_{CES1}
11	I_{CES1} and h_{FE2}; ΔI_{CES1} = 100 percent of initial value or 1 μA dc, whichever is greater. $\Delta h_{FE2} = \pm$ 15 percent of initial value.	I_{CES1} and h_{FE2}; ΔI_{CES1} = 100 percent of initial value or 1 μA dc, whichever is greater.
12	See 4.3.1	See 4.3.1
13	ΔI_{CES1} = 100 percent of initial value or 1 μA dc, whichever is greater; $\Delta h_{FE2} = \pm$ 15 percent of initial value; subgroup 2 of table I herein	ΔI_{CES1} = 100 percent of initial value or 1 μA dc, whichever is greater; $\Delta h_{FE2} = \pm$ 20 percent of initial value; subgroup 2 of table I herein

(1) Shall be performed anytime after temperature cycling, screen 3a; and does not need to be repeated in screening requirements.

4.3.1 Power burn-in conditions. Power burn-in conditions are as follows: T_J = +187.5 ±12.5°C; V_{CE} = 25 ± 5 V dc; T_A = Room ambient as defined in the general requirements of MIL-STD-750.

* 4.3.2 Thermal impedance. The thermal impedance measurements shall be performed in accordance with method 3131 of MIL-STD-750 using the guidelines in that method for determining I_M, I_H, t_H, t_{SW} (and V_H where appropriate). Measurement delay time (t_{MD}) = 70 μs max. See table III, group E, subgroup 4 herein.

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with table E-V of MIL-PRF-19500 and table I herein.

4.4.2 Group B inspection . Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VIA (JANS) and table E-VIB (JAN, JANTX and JANTXV) of MIL-PRF-19500, and as follows. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2. Delta requirements shall be in accordance with the applicable steps of table II herein.

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

Subgroup	Method	Conditions
B4	1037	V_{CB} = 30 V dc, P_T = 4 W at T_A = +25°C ± 3°C, t_{on} = t_{off} = 3 minutes minimum for 2,000 cycles. No heat sink or forced air on the device shall be permitted. A separate sample may be pulled for each test.
B5	1027	V_{CB} = 30 V dc, T_A = +125°C ± 25°C for 96 hours; P_T = 4 W at T_A = +100°C or adjusted as required by the chosen T_A to give an average lot T_J = +225°C. Marking legibility requirement shall not apply.

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

Subgroup	Method	Conditions
B3	1037	$V_{CB} \geq$ 10 V dc; ΔT_J between cycles ≥ 100°C; t_{on} = t_{off} ≥ 1 minute for 2,000 cycles. No heat sink or forced air cooling on the device shall be permitted.
B6	1032	T_A = +200°C.

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VII of MIL-PRF-19500 and as follows. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2. Delta requirements shall be in accordance with the applicable steps of table II herein.

	Subgroup	Method	Conditions
	C2	1056	Test condition B.
	C2	2036	Test condition A, weight = 10 lbs, application time = 15 seconds.
*	C5	3131	See 4.3.2, $R_{\theta JC}$ = 1.5°C/W.
	C6	1037	$V_{CB} \geq$ 10 V dc; ΔT_J between cycles ≥ 100°C, t_{on} = $t_{off} \geq$ 1 minute for 6,000 cycles. No heat sink or forced air cooling on the device shall be permitted.

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

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

4.5.1 Pulse measurements. Conditions for pulse measurement shall be as specified in section 4 of MIL-STD-750.

TABLE I. Group A inspection.

Inspection 1/	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
Subgroup 1						
Visual and mechanical examination	2071					
Subgroup 2						
Thermal impedance 2/	3131	See 4.3.2	$Z_{\theta JC}$			°C/W
Collector-emitter breakdown voltage	3011	Bias condition D; I_C = 10 mA dc; pulsed (see 4.5.1)	$V_{(BR)CEO}$			
2N3715				60		V dc
2N3716				80		V dc
Collector-base cutoff current	3036	Base condition D	I_{CBO}			
2N3715		V_{CB} = 80 V dc			10	μA dc
2N3716		V_{CB} = 100 V dc			10	μA dc
Emitter-base cutoff current	3061	Base condition D; V_{EB} = 7 V dc	I_{EBO}		1.0	mA dc
Collector-emitter cutoff current	3041	Bias condition A	I_{CEX1}			
2N3715		V_{BE} = 1.5 V dc, V_{CE} = 60 V dc			1.0	mA dc
2N3716		V_{BE} = 1.5 V dc, V_{CE} = 80 V dc			1.0	mA dc
Collector-emitter cutoff current	3041	Bias condition C	I_{CES1}			
2N3715		V_{CE} = 60 V dc			1.0	mA dc
2N3716		V_{CE} = 80 V dc			1.0	mA dc
Base-emitter saturated voltage	3066	Test condition A; I_C = 5 A dc; I_B = 0.5 A dc; pulsed (see 4.5.1)	$V_{BE(SAT)1}$		1.5	V dc
Base-emitter saturated voltage	3066	Test condition A; I_C = 10 A dc; I_B = 2 A dc; pulsed (see 4.5.1)	$V_{BE(SAT)2}$		3.0	V dc
Collector-emitter saturated voltage	3071	I_C = 5 A dc; I_B = 0.5 A dc; pulsed (see 4.5.1)	$V_{CE(SAT)1}$		1.0	V dc
Collector-emitter saturated voltage	3071	I_C = 10 A dc; I_B = 2 A dc; pulsed (see 4.5.1)	$V_{CE(SAT)2}$		2.5	V dc
Forward-current transfer ratio	3076	V_{CE} = 2.0 V dc; I_C = 1.0 A dc; pulsed (see 4.5.1)	h_{FE1}	50	150	
Forward current transfer ratio	3076	V_{CE} = 2.0 V dc; I_C = 3.0 A dc; pulsed (see 4.5.1)	h_{FE2}	30	120	

See footnote at end of table.

TABLE I. Group A inspection - Continued.

Inspection 1/	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
Subgroup 2 - Continued						
Forward-current transfer ratio	3076	V_{CE} = 2.0 V dc; I_C = 5 A dc; pulsed (see 4.5.1)	h_{FE3}	10		
Forward-current transfer ratio	3076	V_{CE} = 4.0 V dc; I_C = 10 A dc; pulsed (see 4.5.1)	h_{FE4}	5		
Subgroup 3						
High temperature operation:		T_A = +150°C				
Collector to emitter cutoff current	3041	Bias condition C	I_{CES2}			
2N3715		V_{CE} = 50 V dc			5.0	mA dc
2N3716		V_{CE} = 70 V dc			5.0	mA dc
Low temperature operation:		T_A = -55°C				
Forward-current transfer ratio	3076	V_{CE} = 2.0 V dc; I_C = 3.0 A dc; pulsed (see 4.5.1)	h_{FE5}	12		
Subgroup 4						
Pulse response:	3251	Test condition A, except test circuit and pulse requirement in accordance with figure 4				
Pulse delay time			t_d		0.2	µs
Pulse rise time			t_r		1.3	µs
Pulse storage time			t_s		1.2	µs
Pulse fall time			t_f		1.2	µs
Small-signal short-circuit forward-current transfer ratio	3206	V_{CE} = 10 V dc; I_C = 0.5 A dc; f = 1 kHz	h_{fe}	30	300	
Magnitude of small-signal short-circuit forward current transfer ratio	3306	V_{CE} = 10 V dc; I_C = 0.5 A dc; f = 1 MHz	$\|h_{fe}\|$	4.0	20	
Open circuit output capacitance	3236	V_{CB} = 10 V dc; I_E = 0; f = 1 MHz	C_{obo}		500	pF

See footnote at end of table.

TABLE I. Group A inspection - Continued.

Inspection 1/	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
Subgroup 5						
Safe operating area (continuous dc) Test 1	3051	T_C = +25°C; t ≥ 1 s; 1 cycle; (see figure 5) V_{CE} = 15 V dc; I_C = 10 A dc				
Test 2		V_{CE} = 40 V dc; I_C = 3.75 A dc				
Test 3 2N3715 2N3716		 V_{CE} = 55 V dc; I_C = 0.9 A dc V_{CE} = 65 V dc; I_C = 0.9 A dc				
Safe operating area (clamped inductive)	3053	T_A = +25°C; I_C = 10 A dc; V_{CC} = 15 V dc; (see figures 6 and 7)				
2N3715 2N3716		Clamp voltage = 60 V dc Clamp voltage = 80 V dc				
Test 1		t_p approximately 1.0 ms (vary to obtain I_C); R_{BB1} = 5Ω; V_{BB1} = 8 V dc; R_{BB2} = 4; V_{BB2} = 0; V_{CC} = 15 V dc; I_C = 5 A dc; L = 4 mH; Q ≥ 100 at 1 kHz; .05 ohms, 20 A dc; (Stanford Miller CK-20 or equivalent)				
Test 2		t_p approximately 2.2 ms (vary to obtain I_C); R_{BB1} = 5Ω; V_{BB1} = 8 V dc; R_{BB2} = 4; V_{BB2} = 0; V_{CC} = 15 V dc; I_C = 2.2 A dc; L = 20 mH; Q ≥ 6,000 at 10 kHz; 0.22 ohms, 12.5 A dc; (two Stancor C-2688 in series or equivalent)				
Electrical measurements		See table I, subgroup 2				
Subgroups 6 and 7						
Not applicable						

1/ For sampling plan, see MIL-PRF-19500.
2/ This test required for the following end-point measurements only:
Group B, subgroups 3, 4, and 5 (JANS).
Group B, subgroups 2 and 3 (JAN, JANTX, and JANTXV).
Group C, subgroup 2 and 6.
Group E, subgroup 1.

* TABLE II. Groups B, C, and E delta measurements. 1/ 2/ 3/ 4/

	Step	Inspection	MIL-STD-750		Symbol	Limits		Unit
			Method	Conditions		Min	Max	
	1.	Collector-emitter cutoff current 2N3715 2N3716	3041	Bias condition C V_{CE} = 60 V dc V_{CE} = 80 V dc	ΔI_{CES1} 5/	100 percent of initial value or 1 μA dc, whichever is greater.		
	2	Forward-current transfer ratio	3076	V_{CE} = 2.0 V dc; I_C = 3.0 A dc; pulsed (see 4.5.1)	Δh_{FE2} 5/	± 25 percent change from initial value		
*	3	Collector-emitter (voltage saturated)	3071	I_C = 5 A dc; I_B = 0.5 A dc; pulsed (see 4.5.1)	$\Delta V_{CE(SAT)1}$ 5/	± 50 percent change from initial value.		

1/ The delta measurements for table E-VIA (JANS) of MIL-PRF-19500 are as follows:
   a. Subgroup 4, see table II herein, step 2.
   b. Subgroup 5, see table II, steps 1, 2, and 3.

2/ The delta measurements for table E-VIB (JAN, JANTX, and JANTXV) of MIL-PRF-19500 are as follows: Subgroups 3 and 6, see table II herein, steps 1 and 2.

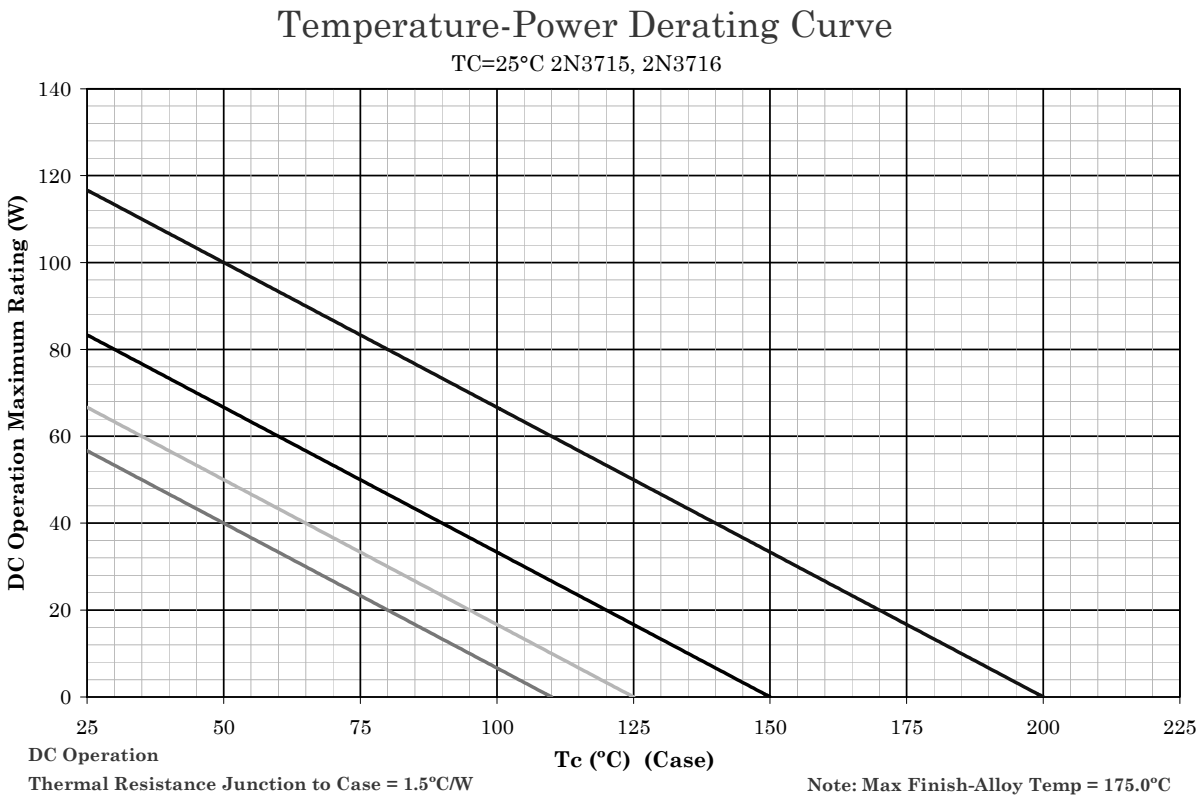
3/ The delta measurements for table E-VII of MIL-PRF-19500 are subgroup 6, see table II herein, all steps for JANS and steps 1 and 2 for JAN, JANTX, and JANTXV.

4/ The delta measurements for table E-IX of MIL-PRF-19500 are as follows: Subgroups 1 and 2, see table II herein, all steps.

5/ Devices which exceed the group A limits for this test shall not be acceptable.

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

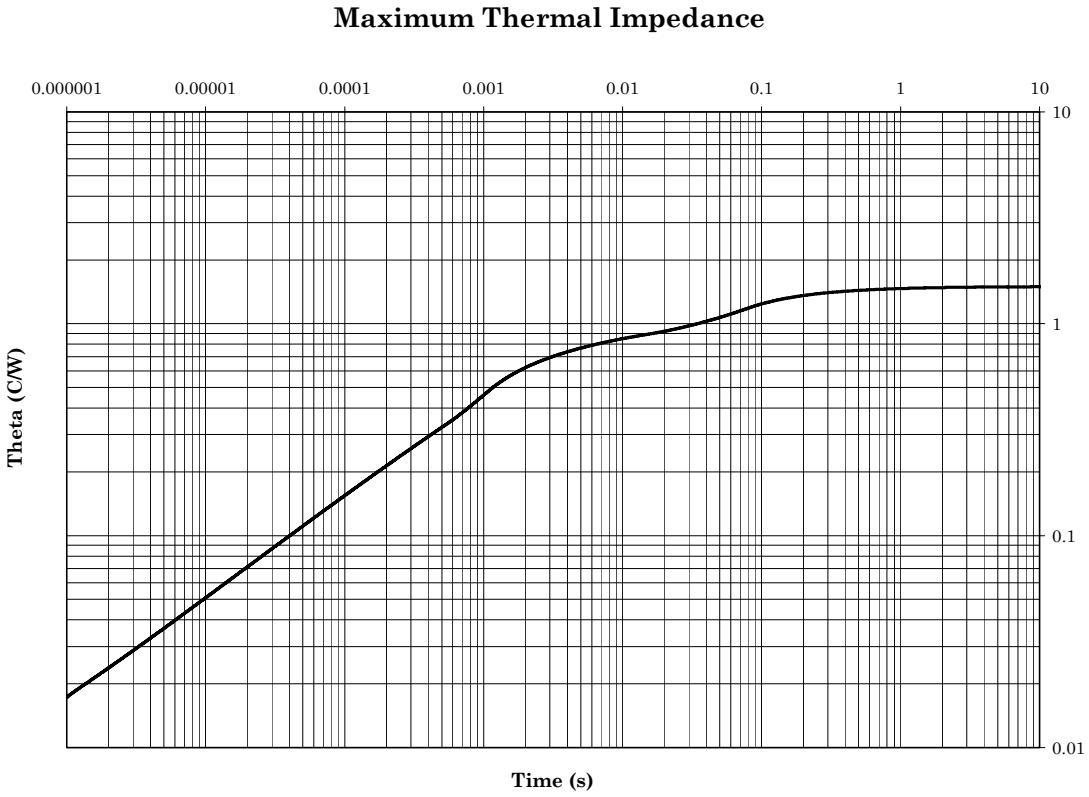
Inspection	MIL-STD-750		Sample plan
	Method	Conditions	
Subgroup 1			45 devices c = 0
Temperature cycling	1051	500 cycles minimum	
Hermetic seal	1071		
Fine leak Gross leak			
Electrical measurements		See table I, subgroup 2 and table II.	
Subgroup 2			45 devices c = 0
Blocking life	1048	Test temperature = +125°C; V_{CB} = 80 percent of rated voltage, T = 1,000 hours.	
Electrical measurements		See table I, subgroup 2 and table II.	
Subgroup 4			sample size N/A
Thermal impedance curves		See MIL-PRF-19500.	
Subgroup 6			3 devices
ESD	1020	Testing not required for class 3 listing. Testing is required for nonsensitive listing to prove capability.	
Subgroup 8			45 devices c = 0
Reverse stability	1033	Condition B	



NOTES:

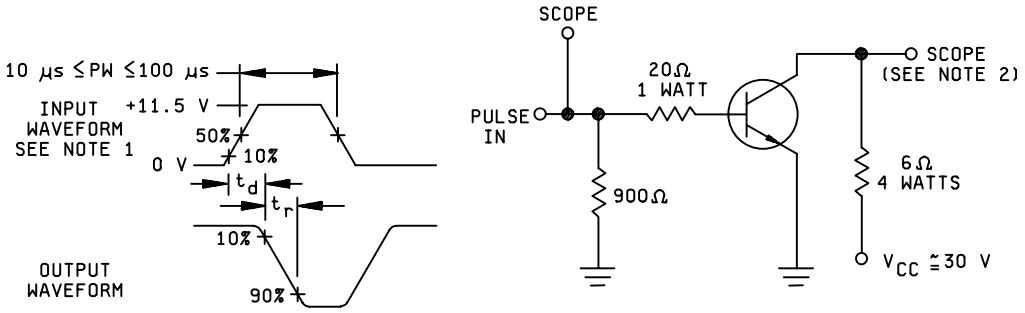
1. All devices are capable of operating at $\leq T_J$ specified on this curve. Any parallel line to this curve will intersect the appropriate power for the desired maximum T_J allowed.
2. Derate design curve constrained by the maximum junction temperature ($T_J \leq +200°C$) and power rating specified. (See 1.3 herein.)
3. Derate design curve chosen at $T_J \leq +150°C$, where the maximum temperature of electrical test is performed.
4. Derate design curves, chosen at $T_J \leq +125°C$ and 110°C to show power rating where most users want to limit T_J in their application.

* FIGURE 2. Temperature derating graphs (TO-3).

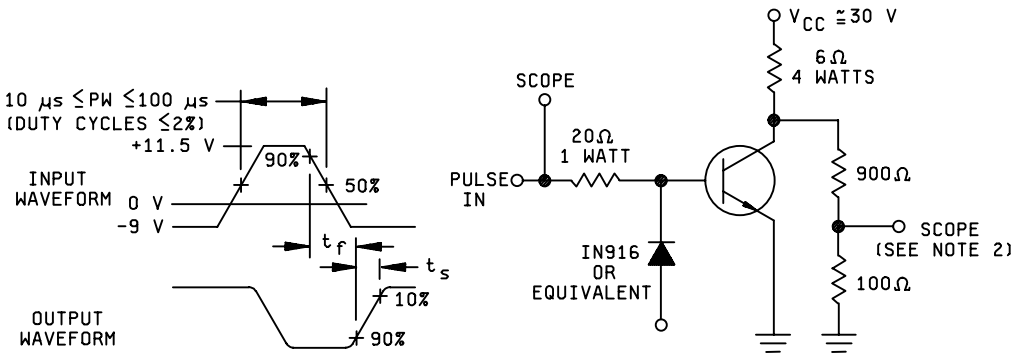


T_C = +25C. Thermal resistance = 1.5°C/W.

FIGURE 3. Transient thermal impedance graph.



TEST CIRCUIT A



TEST CIRCUIT B

NOTES:

1. The input waveform is supplied by a pulse generator with the following characteristics: $t_r \leq 20.0$ ns, $t_f \leq 1$ µs, 10 µs ≤ PW ≤ 100 µs, $Z_{OUT} = 50\Omega$, duty cycle ≤ 2 percent.
2. Output waveforms are monitored on an oscilloscope with the following characteristics: $t_r \leq 5$ ns, $Z_{IN} \geq 100$ kΩ, $C_{IN} \leq 12$ pF.
3. Test circuit A for t_d and t_r; test circuit B for t_s and t_f.

FIGURE 4. Pulse response test circuits.

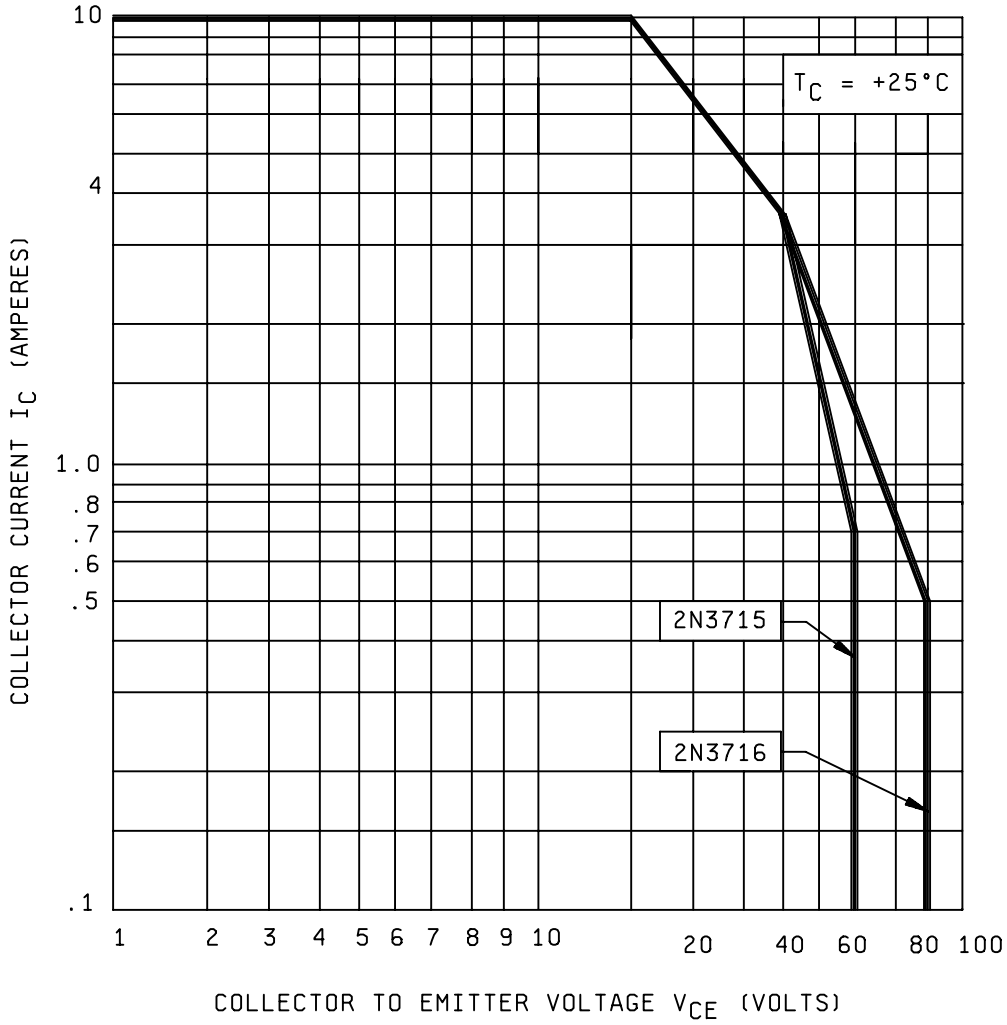


FIGURE 5. Maximum safe operating graph (dc).

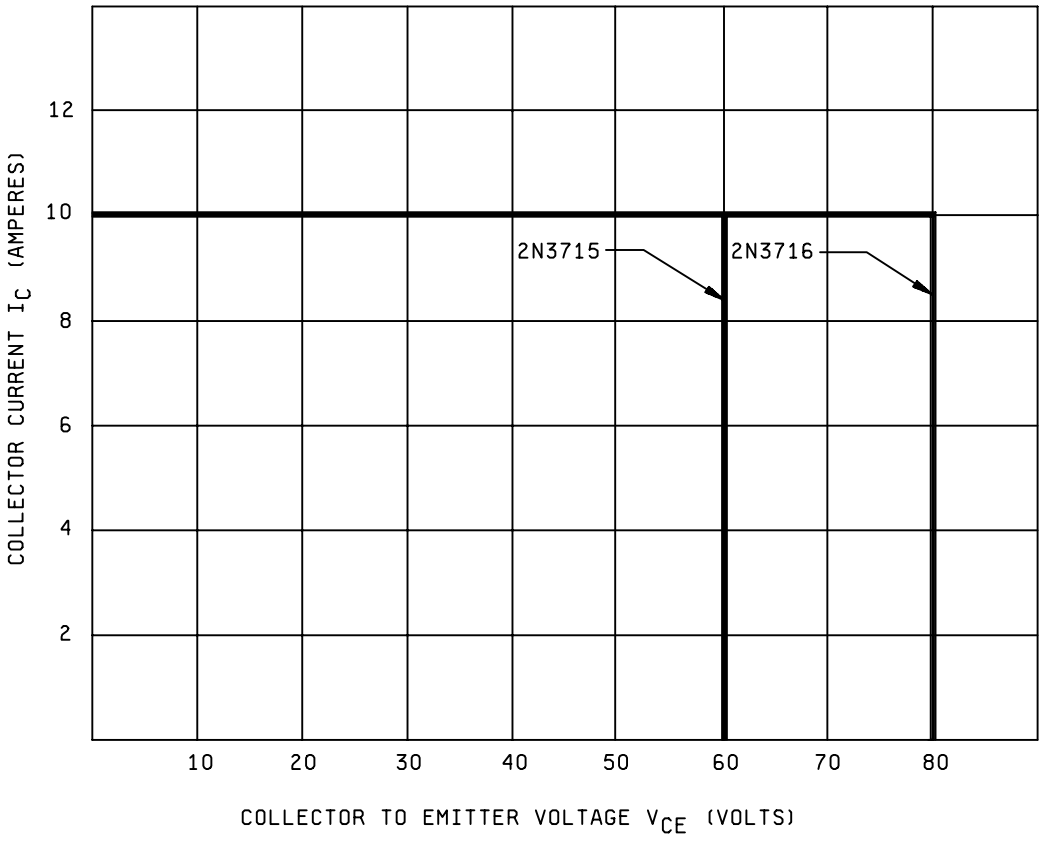
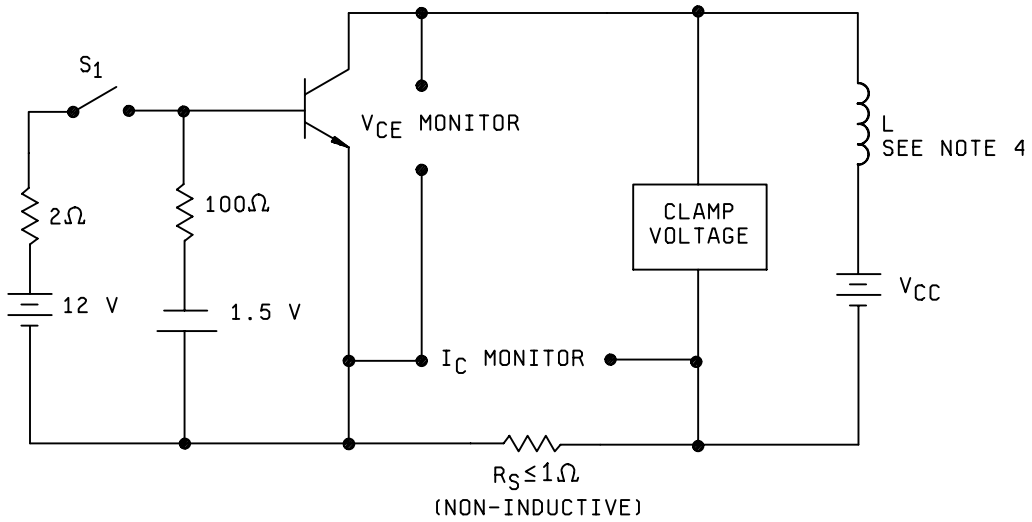


FIGURE 6. Safe operating area for switching between saturation and cutoff (clamped inductive load).



Procedure:

1. With switch S_1 closed, set the specified test conditions.
2. Open S_1. Device fails if clamp voltage not reached.
3. Perform specified end-point tests.
4. L = 4.0 mH, 0.05Ω, 20 A, Q ≥ 100 at 1 kHz, (Sanford Miller CK-20 or equivalent).

FIGURE 7. Clamp inductive sweep test circuit.

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 3.4.1).

d. Product assurance level and type designator.

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified 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 Defense Supply Center, Columbus, ATTN: DSCC/VQE, P.O. Box 3990, Columbus, OH 43218-3990 or e-mail vqe.chief@dla.mil.

6.4 Interchangeability information. MIL-PRF-19500/622 is a TO-254 package version of MIL-PRF-19500/408, which is a TO-3 package version. The military 2N7368 contains the same die as the military 2N3716. The MIL-PRF-19500/622 is preferred over the MIL-PRF-19500/408 whenever interchangeability is not a problem. For new design use 2N7368 instead of 2N3716. The 2N3716 only is inactive for new design.

6.5 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5961-2006-076)

Review activities:
Army - AR, AV, MI
Navy - AS, MC
Air Force - 19, 99

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 http://assist.daps.dla.mil/ .

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