

The documentation and process conversion measures necessary to comply with this revision shall be completed by 30 January 2004.
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INCH-POUND
MIL-PRF-19500/495D
30 October 2003
SUPERSEDING
MIL-PRF-19500/495C
10 August 1998

PERFORMANCE SPECIFICATION

SEMICONDUCTOR DEVICE, UNITIZED, DUAL-TRANSISTOR, NPN, SILICON,
TYPES 2N5793, 2N5794, AND 2N5794U, JAN, JANTX, AND JANTXV

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

1. SCOPE

1.1 Scope. This specification covers the performance requirements for unitized, dual transistors which contain a pair of electrically isolated unmatched NPN, silicon transistors in one package. Three levels of product assurance are provided for each device type as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figures 1 (similar to TO-99) and 2 (surface mount).

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

P_T (1) $T_A = +25^\circ\text{C}$		I_C	V_{CBO}	V_{CEO}	V_{EBO}	$R_{\theta JA}$		T_J and T_{STG}
One section	Total device					One section	Total device	
<u>W</u>	<u>W</u>	<u>mA dc</u>	<u>V dc</u>	<u>V dc</u>	<u>V dc</u>	<u>°C/W</u>	<u>°C/W</u>	<u>°C</u>
0.5	0.6	600	75	40	6.0	350	290	-65 to +200

(1) For $T_A \geq 25^\circ\text{C}$, derate linearly 2.86 mW/°C one section, 3.43 mW/°C total.

	C_{obo}	$ h_{fe} $	Switching	
	$V_{CB} = 10 \text{ V dc}$ $I_E = 0$ $100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	$V_{CE} = 20 \text{ V dc}$ $I_C = 20 \text{ mA dc}$ $f = 100 \text{ MHz}$	t_{on}	t_{off}
	<u>ρF</u>		<u>ns</u>	<u>ns</u>
Minimum		2.0		
Maximum	8.0	10.0	45	310

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.

1.4 Primary electrical characteristics. $T_A = +25^\circ\text{C}$, unless otherwise specified.

	h_{FE1}		h_{FE4} (1)		$V_{CE(sat)1}$ (1)	$V_{CE(sat)2}$ (1)	$V_{BE(sat)1}$ (1)	
Limits	$V_{CE} = 10\text{ V dc}$ $I_C = 100\ \mu\text{A dc}$		$V_{CE} = 10\text{ V dc}$ $I_C = 150\text{ mA dc}$		$I_C = 150\text{ mA dc}$ $I_B = 15\text{ mA dc}$	$I_C = 300\text{ mA dc}$ $I_B = 30\text{ mA dc}$	$I_C = 150\text{ mA dc}$ $I_B = 15\text{ mA dc}$	
	Min	Max	Min	Max	Max	Max	Min	Max
					$\frac{V}{dc}$	$\frac{V}{dc}$	$\frac{V}{dc}$	$\frac{V}{dc}$
2N5793	20		40	120	0.3	0.9	0.6	1.2
2N5794	35		100	300	0.3	0.9	0.6	1.2
2N5794U	35		100	300	0.3	0.9	0.6	1.2

(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.

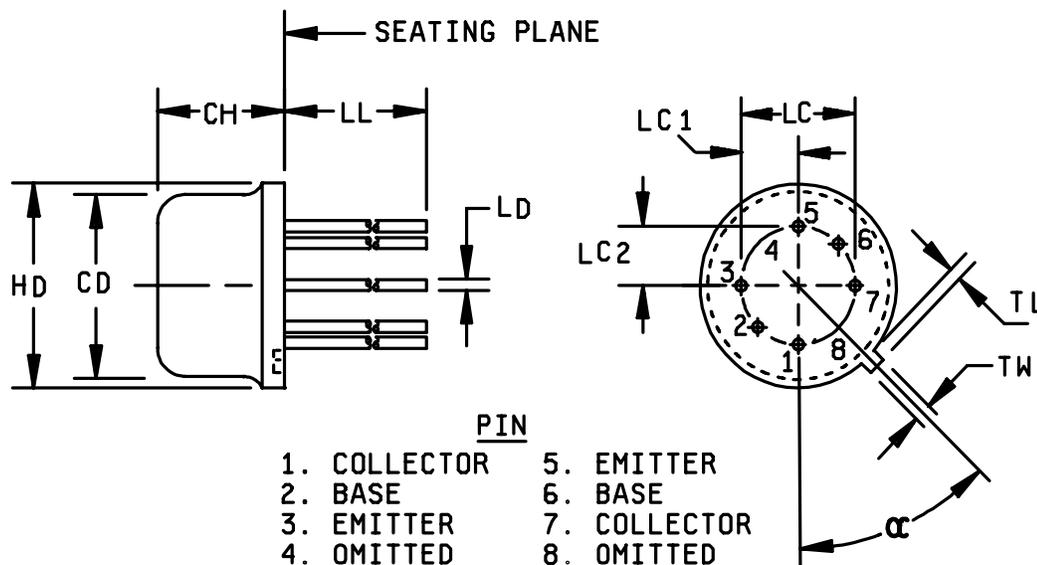
STANDARD

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.)

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 take precedence. Nothing in this document, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

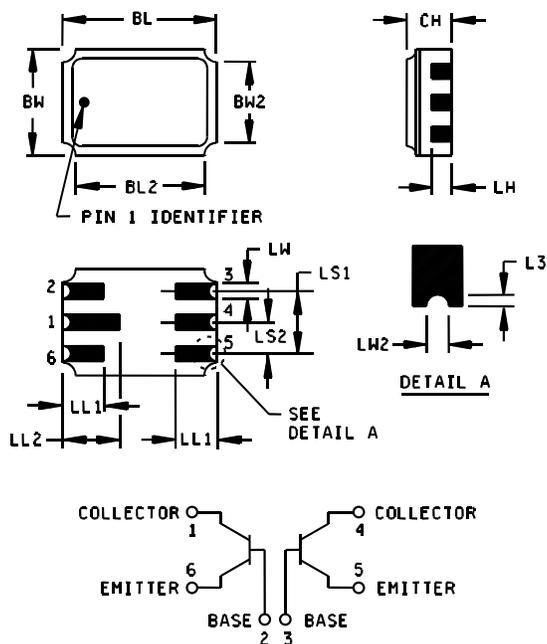


Dimensions					
Symbol	Inches		Millimeters		Note
	Min	Max	Min	Max	
CD	.305	.335	7.75	8.51	
CH	.150	.185	3.81	4.70	
HD	.335	.370	8.51	9.40	
LD	.016	.021	0.41	0.53	
LL	.500		12.70		
LC	.200 BSC		5.08 BSC		4
LC1	.100 BSC		2.54 BSC		
LC2	.100 BSC		2.54 BSC		
TL	.029	.045	0.74	1.14	3
TW	.028	.034	0.71	0.86	
α	45° TP		45° TP		6

NOTES:

- * 1. Dimensions are in inches.
- * 2. Millimeters are given for general information only.
- 3. Measured from maximum diameter of the product.
- 4. Leads having maximum diameter .019 inch (.483 mm) measured in gaging plan .054 inch (1.37 mm) + .001 inch (.025 mm) - .000 inch (.000 mm) below the seating plane of the product shall be within .007 inch (.178 mm) of their true position relative to a maximum width tab.
- 5. The product may be measured by direct methods or by gauge.
- 6. Tab centerline.
- * 7. In accordance with ASME Y14.5M, diameters are equivalent to ϕ x symbology.

FIGURE 1. Physical dimensions (2N5793 and 2N5794) (similar to TO-99).



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BL	.240	.250	6.10	6.35
BL ₂		.250		6.35
BW	.165	.175	4.19	4.45
BW ₂		.175		4.45
CH	.058	.100	1.47	2.54
L ₃	.003	.007	0.08	0.18
LH	.026	.039	0.66	0.99

Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
LL ₁	.060	.070	1.52	1.78
LL ₂	.082	.098	2.08	2.49
LS ₁	.095	.105	1.14	1.40
LS ₂	.045	.055	2.41	2.67
LW	.022	.028	0.56	0.71
LW ₂	.006	.022	0.15	0.56

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Dimension "CH" controls the overall package thickness.
4. The corner shape (square, notch, radius, etc.) may vary at the manufacturer's option from that shown on the drawing.
5. Dimensions "LW₂" minimum and "L₃" minimum and the appropriate castellation length define an unobstructed three-dimensional space traversing all of the ceramic layers in which a castellation was designed. (Castellations are required on bottom two layers, optional on top ceramic layer.) Dimension "LW₂" maximum and "L₃" maximum define the maximum width and depth of the castellation at any point on its surface. Measurement of these dimensions may be made prior to solder dipping.
6. Lead 4 = no connection.
7. In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

*

FIGURE 2. Physical dimensions, 2N5794U.

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 figures 1 (similar to TO-99), and 2 (surface mount) herein.

3.4.1 Lead finish. Lead finish shall be solderable as defined in 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 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in 1.3, 1.4, and table I.

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

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

* 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 and table I and II).

4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-19500 and as specified herein.

* 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 associated specification that did not request the performance of table II tests, the tests specified in table II herein shall be performed by the first inspection lot of this revision to maintain qualification.

4.3 Screening (JANTX and JANTXV levels only). 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.

Screen (see table IV of MIL-PRF-19500)	Measurement
	JANTX and JANTXV levels
3c	Thermal impedance (see 4.3.2)
9	Not applicable
10	48 hours minimum
11	I_{CBO2} and h_{FE4}
12	Burn-in (see 4.3.1), 80 hours minimum
13	Subgroup 2 of table I herein; $\Delta I_{CBO2} = 100$ percent of initial value or 5 nA dc; whichever is greater. $\Delta h_{FE4} = \pm 15$ percent of initial value.
14	Required

4.3.1 Burn-in conditions. Burn-in conditions are as follows: T_A = room ambient as defined in the general requirements of 4.5 of MIL-STD-750; $V_{CB} = 10 - 30$ V dc; $P_T = 300$ mW each section (600 mW total device).

4.3.2 Thermal impedance ($Z_{\theta JX}$ measurements). The $Z_{\theta JX}$ measurements shall be performed in accordance with method 3131 of MIL-STD-750.

- a. I_M measurement current -----5 mA.
- b. I_H forward heating current -----200 mA (min).
- c. t_H heating time -----25 - 30 ms.
- d. t_{md} measurement delay time -----60 μ s max.
- e. V_{CE} collector-emitter voltage -----10 V dc minimum

The maximum limit for $Z_{\theta JX}$ under these test conditions are $Z_{\theta JX} (max) = 72^\circ C/W$.

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500, and as specified herein. If alternate screening is being performed in accordance with MIL-PRF-19500, a sample of screened devices shall be submitted to and pass the requirements of group A1 and A2 inspection only (table VIb, group B, subgroup 1 is not required to be performed again if group B has already been satisfied in accordance with 4.4.2).

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with 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 as follows. Electrical measurements (end-points) and delta requirements shall be after each step below and shall be in accordance with table I, subgroup 2, 4.4.2.1, and 4.5.2 herein.

* 4.4.2.1 Group B inspection, (JAN, JANTX, and JANTXV). Separate samples may be used for each step. In the event of a lot failure, the resubmission requirements of MIL-PRF-19500 shall apply. In addition, all catastrophic failures during conformance inspection shall be analyzed to the extent possible to identify root cause and corrective action. Whenever a failure is identified as wafer lot and/or wafer processing related, the entire wafer lot and related devices assembled from the wafer lot shall be rejected unless an appropriate determined corrective action to eliminate the failure mode has been implemented and the devices from the wafer lot are screened to eliminate the failure mode.

<u>Step</u>	<u>Method</u>	<u>Condition</u>
1	1039	Steady-state life: Test condition B, 1,000 hours minimum, $V_{CB} = 10$ V dc, power shall be applied to achieve $T_J = +150^\circ\text{C}$ minimum using a minimum of $P_D = 75$ percent of maximum rated P_T as defined in 1.3. $n = 45$ devices, $c = 0$.
2	1039	HTRB: Test condition A, 48 hours minimum. $n = 45$ devices, $c = 0$.
3	1032	High-temperature life (non-operating), $t = 340$ hours, $T_A = +200^\circ\text{C}$. $n = 22$, $c = 0$.

4.4.2.2 Group B sample selection. Samples selected for group B inspection shall meet all of the following requirements:

- For JAN, JANTX, and JANTXV samples shall be selected randomly from a minimum of three wafers (or from each wafer in the lot) from each wafer lot. See MIL-PRF-19500.
- Must be chosen from an inspection lot that has been submitted to and passed table I, subgroup 2, conformance inspection. When the final lead finish is solder or any plating prone to oxidation at high temperature, the samples for life test (group B for JAN, JANTX, and JANTXV) may be pulled prior to the application of final lead finish.

* 4.4.3 Group C inspection (JAN, JANTX, and JANTXV) of MIL-PRF-19500. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table VII of MIL-PRF-19500, and as follows (JAN, JANTX, and JANTXV) for group C testing. Electrical measurements (end-points) and delta requirements shall be in accordance with table I, subgroup 2 and 4.5.2 herein.

<u>Subgroup</u>	<u>Method</u>	<u>Condition</u>
C2	2036	Test condition E; not applicable for U suffix devices.
C5	3131	$R_{\theta JA}$, see 1.3.
C6		Not applicable

4.4.3.1 Group C sample selection. Samples for subgroups in group C shall be chosen at random from any inspection lot containing the intended package type and lead finish procured to the same specification which is submitted to and passes table I tests for conformance inspection. Testing of a subgroup using a single device type enclosed in the intended package type shall be considered as complying with the requirements for that subgroup.

* 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 IX of MIL-PRF-19500 and as specified in table II herein. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2, and 4.5.2 herein.

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 Delta requirements. Delta requirements shall be as specified below:

Step	Inspection	MIL-STD-750		Symbol	Limit	Unit
		Method	Conditions			
1	Collector-base cutoff current	3036	Bias condition D, $V_{CB} = 50 \text{ V dc}$	ΔI_{CB02} (1)	100 percent of initial value or 8 nA dc, whichever is greater.	
2	Forward current transfer ratio	3076	$V_{CE} = 10 \text{ V dc};$ $I_C = 150 \text{ mA dc};$ pulsed, see 4.5.1	Δh_{FE4} (1)	± 25 percent change from initial reading.	

(1) Devices which exceed the table I limits for this test shall not be accepted.

TABLE I. Group A inspection.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 1 2/</u>						
Visual and mechanical examination <u>3/</u>	2071	n = 45 devices, c = 0				
Solderability <u>3/</u>	2026	n = 15 leads, c = 0				
Resistance to solvents <u>3/ 4/</u>	1022	n = 15 devices, c = 0				
Temperature cycling <u>3/</u>	1051	Test condition C, 25 cycles. n = 22 devices, c = 0				
Hermetic seal Fine leak Gross leak	1071	n = 22 devices, c = 0				
Electrical measurements		Table I, subgroup 2				
Bond strength <u>3/</u>	2037	Precondition T _A = +250°C at t = 24 hours or T _A = 300°C at t = 2 hours, n = 11 wires, c = 0				
Decap internal visual (design verification)	2075	n = 1 device, c = 0				
<u>Subgroup 2</u>						
Collector to base cutoff current	3036	Bias condition D, V _{CB} = 75 V dc	I _{CB01}		10	μA dc
Breakdown voltage, collector to emitter	3011	Bias condition D; I _C = 10 mA dc; pulsed (see 4.5.1)	V _{(BR)CEO}	40		V dc
Emitter to base cutoff current	3061	V _{EB} = 6 V dc	I _{EBO1}		10	μA dc
Collector to base cutoff current	3036	Bias condition D; V _{CB} = 50 V dc	I _{CB02}		10	nA dc
Emitter to base cutoff current	3061	Bias condition D; V _{EB} = 4 V dc	I _{EBO2}		10	nA dc
Forward-current transfer ratio	3076	V _{CE} = 10 V dc; I _C = 0.1 mA dc	h _{FE1}			
2N5793 2N5794, 2N5794U					20 35	
Forward-current transfer ratio	3076	V _{CE} = 10 V dc; I _C = 1.0 mA dc	h _{FE2}			
2N5793 2N5794, 2N5794U					25 50	

See footnotes at end of table.

TABLE I. Group A inspection - Continued.

Inspection 1/	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 2</u> - Continued						
Forward-current transfer ratio 2N5793 2N5794, 2N5794U	3076	$V_{CE} = 10 \text{ V dc}; I_C = 10 \text{ mA dc};$ pulsed (see 4.5.1)	h_{FE3}			
Forward-current transfer ratio 2N5793 2N5794, 2N5794U	3076	$V_{CE} = 10 \text{ V dc}; I_C = 150 \text{ mA dc};$ pulsed (see 4.5.1)	h_{FE4}	40 100	120 300	
Forward-current transfer ratio 2N5793 2N5794, 2N5794U	3076	$V_{CE} = 10 \text{ V dc}; I_C = 300 \text{ mA dc};$ pulsed (see 4.5.1)	h_{FE5}	25 40		
Forward-current transfer ratio 2N5793 2N5794, 2N5794U	3076	$V_{CE} = 1.0 \text{ V dc}; I_C = 150 \text{ mA dc};$ pulsed (see 4.5.1)	h_{FE6}	20 50		
Collector-emitter saturation voltage	3071	$I_C = 150 \text{ mA dc}; I_B = 15 \text{ mA dc}$ pulsed (see 4.5.1)	$V_{CE(sat)1}$		0.3	V dc
Collector-emitter saturation voltage	3071	$I_C = 300 \text{ mA dc}; I_B = 30 \text{ mA dc};$ pulsed (see 4.5.1)	$V_{CE(sat)2}$		0.9	V dc
Base-emitter saturation voltage	3066	Test condition A; $I_C = 150 \text{ mA dc};$ $I_B = 15 \text{ mA dc};$ pulsed (see 4.5.1)	$V_{BE(sat)1}$	0.6	1.2	V dc
Base-emitter saturation voltage	3066	Test condition A; $I_C = 300 \text{ mA dc};$ $I_B = 30 \text{ mA dc};$ pulsed (see 4.5.1)	$V_{BE(sat)2}$		1.8	V dc
<u>Subgroup 3</u>						
High temperature operation		$T_A = +150^\circ\text{C}$				
Collector to base cutoff current	3036	Bias condition D; $V_{CB} = 50 \text{ V dc}$	I_{CBO3}		10	$\mu\text{A dc}$
Low temperature operation		$T_A = -55^\circ\text{C}$				
Forward-current transfer ratio 2N5793 2N5794, 2N5794U	3076	$V_{CE} = 10 \text{ V dc}; I_C = 150 \text{ mA dc}$	h_{FE7}	16 40		

See footnotes at end of table.

TABLE I. Group A inspection - Continued.

Inspection ^{1/}	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 4</u>						
Magnitude of small-signal short-circuit forward current transfer ratio	3306	$V_{CE} = 20 \text{ V dc}; I_C = 20 \text{ mA dc}; f = 100 \text{ MHz}$	$ h_{fe} $	2	10	
Open circuit output capacitance	3236	$V_{CB} = 10 \text{ V dc}; I_E = 0; 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	C_{obo}		8	pF
Input capacitance (output open-circuited)	3240	$V_{EB} = 0.5 \text{ V dc}; I_C = 0; 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	C_{ibo}		33	pF
Pulse response	3251	Test condition A, (see figure 3)				
Saturated turn-on time		$V_{CC} = 30 \text{ V dc}; I_C = 150 \text{ mA dc}; I_{B1} = 15 \text{ mA dc}, V_{BE(OFF)} = 0.5 \text{ V dc}$	t_{on}		45	ns
Saturated turn-off time		$V_{CC} = 30 \text{ V dc}; I_C = 150 \text{ mA dc}; I_{B1} = I_{B2} = 15 \text{ mA dc}$	t_{off}		310	ns
<u>Subgroups 5 and 6</u>						
Not required						

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

^{2/} For resubmission of failed subgroup 1, double the sample size of the failed test or sequence of tests. A failure in table I, subgroup 1 shall not require retest of the entire subgroup. Only the failed test shall be rerun upon submission.

^{3/} Separate samples may be used.

^{4/} Not required for laser marked devices.

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

Inspection	MIL-STD-750		Qualification
	Method	Conditions	
<u>Subgroup 1</u>			45 devices c = 0
Temperature cycling (air to air)	1051	Test condition C, 500 cycles	
Hermetic seal	1071		
Fine leak Gross leak			
Electrical measurements		See table I, subgroup 2 and 4.5.2 herein.	45 devices c = 0
<u>Subgroup 2</u>			
Intermittent life	1037	V _{CB} = 10 V dc, 6,000 cycles	
Electrical measurements		See table I, subgroup 2 and 4.5.2 herein.	
<u>Subgroup 3</u>			3 devices c = 0
Destructive physical analysis (DPA)	2102		
<u>Subgroup 4</u>			15 devices, c = 0
Thermal impedance, thermal resistance curves	3131	Each supplier shall submit their (typical) design thermal impedance curves. In addition, test conditions and Z _{θJX} limit shall be provided to the qualifying activity in the qualification report	Sample size N/A
<u>Subgroup 5</u>			
Not applicable			
<u>Subgroup 6</u>			3 devices c = 0
ESD	1020		
<u>Subgroup 7</u>			
Not applicable			
<u>Subgroup 8</u>			45 devices c = 0
Reverse stability	1033	Condition A for devices ≥ 400 V, condition B for devices < 400 V.	

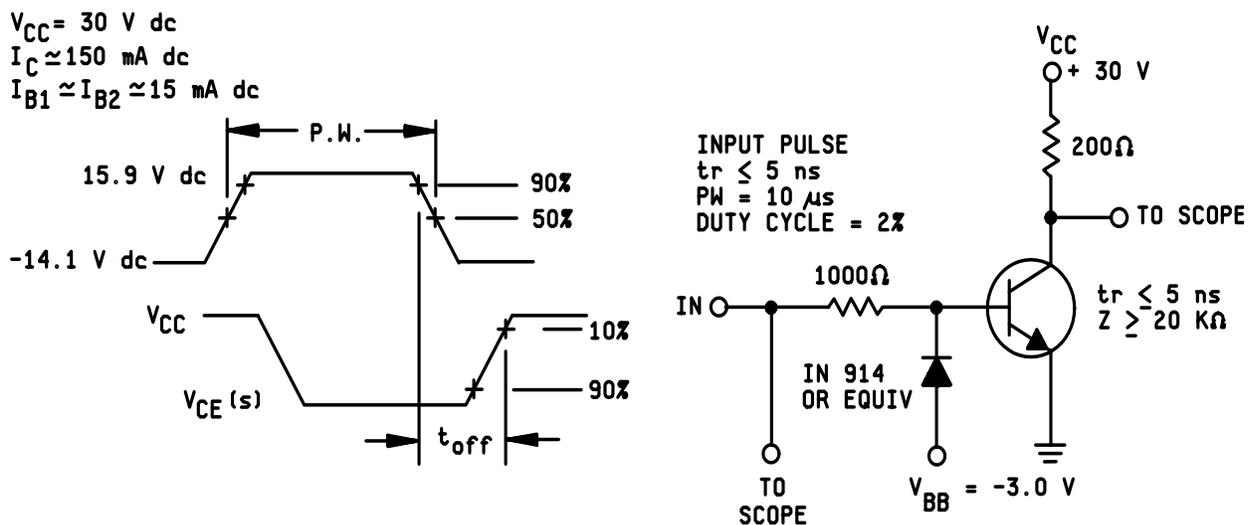
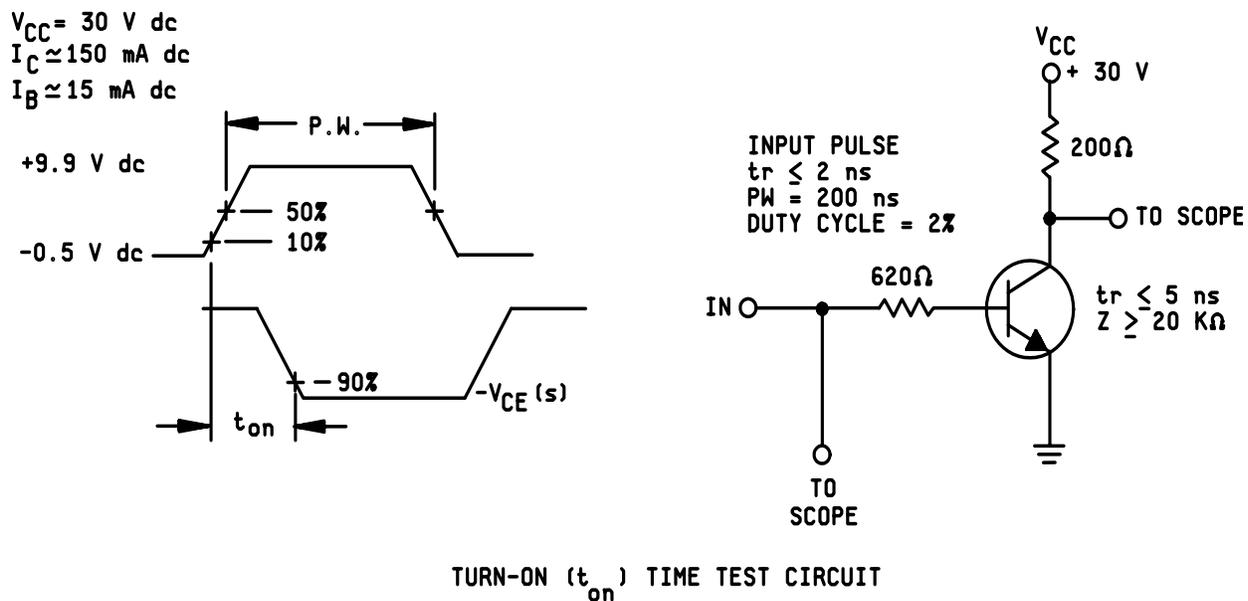


FIGURE 3. Turn-off time test circuits.

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).
- e. Type designation and quality assurance level.

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.

6.4 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
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5961-2797)

Review activities:
Army - MI
Air Force - 19

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-19500/495D	2. DOCUMENT DATE 30 October 2003
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3. **DOCUMENT TITLE** SEMICONDUCTOR DEVICE, UNITIZED, DUAL-TRANSISTOR, NPN, SILICON, TYPES 2N5793, 2N5794, AND 2N5794U, 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) COMMERCIAL DSN FAX EMAIL	7. DATE SUBMITTED

8. PREPARING ACTIVITY

a. Point of Contact Alan Barone	b. TELEPHONE Commercial DSN FAX EMAIL 614-692-0510 850-0510 614-692-6939 alan.barone@dla.mil		
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		