The documentation and process conversion measures necessary to comply with this document shall be completed by 2 July 2002.

INCH-POUND

MIL-PRF-19500/511E
2 April 2002
SUPERSEDING
MIL-PRF-19500/511D
19 January 2001

PERFORMANCE SPECIFICATION

SEMICONDUCTOR DEVICE, TRANSISTOR, PNP, SILICON, SWITCHING
TYPE 2N4261, 2N4261UB, JAN, JANTX, JANTXV AND JANS, JANHC AND JANKC

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 PNP silicon, switching transistors. Four levels of product assurance are provided for each encapsulated device type and two levels for unencapsulated dice as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figure 1 (TO-72), figure 2 (UB) and figure 3 (JANHC, JANKC).

1.3 Maximum ratings.

P_T T_A = +25°C (1)	V_{CBO}	V_{CEO}	V_{EBO}	I_C	T_J	T_J and T_{STG}	$R_{\Theta JA}$
mW	V dc	V dc	V dc	mA dc	°C	°C	°C/mW
200	15	15	4.5	30	200	-65 to +200	0.860

(1) Derate linearly 1.14 mW/°C above T_A = +25°C.

1.4 Primary electrical characteristics at T_A = +25°C, unless otherwise specified.

	h_{FE1} (1)	h_{FE2} (1)	h_{FE3} (1)	$\|h_{fe2}\|$	$r_b' C_c$	Switching	
	V_{CE} = 1.0 V dc I_C = 1 mA dc	V_{CE} = 1.0 V dc I_C = 10 mA dc	V_{CE} = 1.0 V dc I_C = 30 mA dc	V_{CE} = 10 V dc I_C = 10 mA dc f = 100 MHz	V_{CE} = 4.0 V dc I_C = 5 mA dc f = 31.8 MHz	t_{on}	t_{off}
					ps	ns	ns
Min	25	30	20	20			
Max		150			60	2.5	3.5

See note on next page.

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.

AMSC N/A FSC 5961

1.4 Primary electrical characteristics at T_A = +25°C, unless otherwise specified - Continued.

	$V_{CE(sat)1}$ I_C = 1 mA dc I_B = 0.1 mA dc	$V_{CE(sat)2}$ I_C = 10 mA dc I_B = 1.0 mA dc	V_{BE1} I_C = 1 mA dc V_{CE} = 1 V dc	V_{BE2} I_C = 10 mA dc V_{CE} = 1 V dc	C_{obo} V_{CB} = 4 V dc I_E = 0 100 kHz ≤ f ≤ 1 MHz
	V dc	V dc	V dc	V dc	PF
Min					
Max	0.15	0.35	0.8	1.0	2.5

(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.)

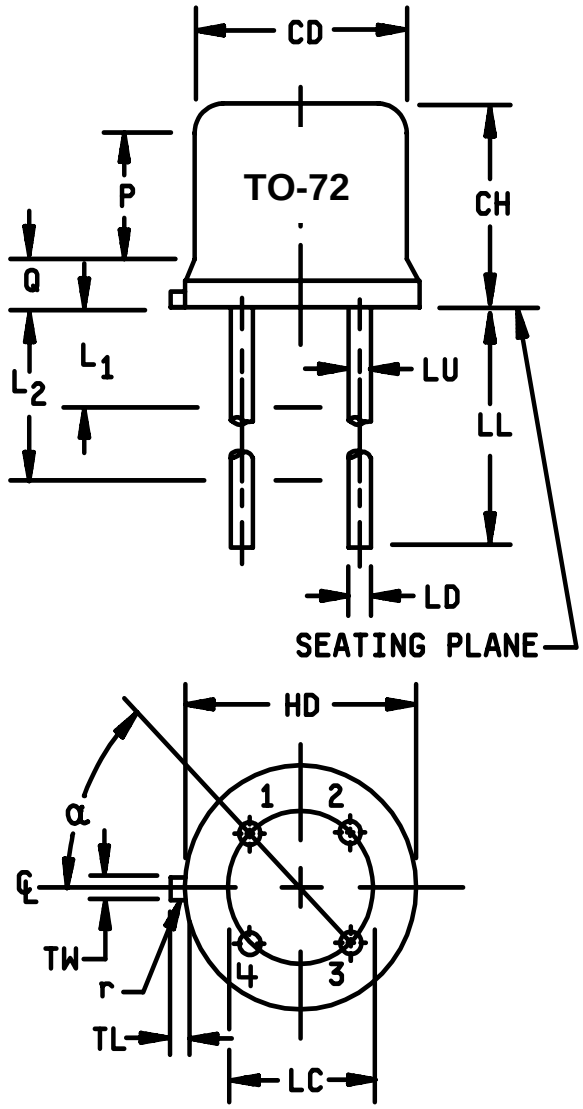
2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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).

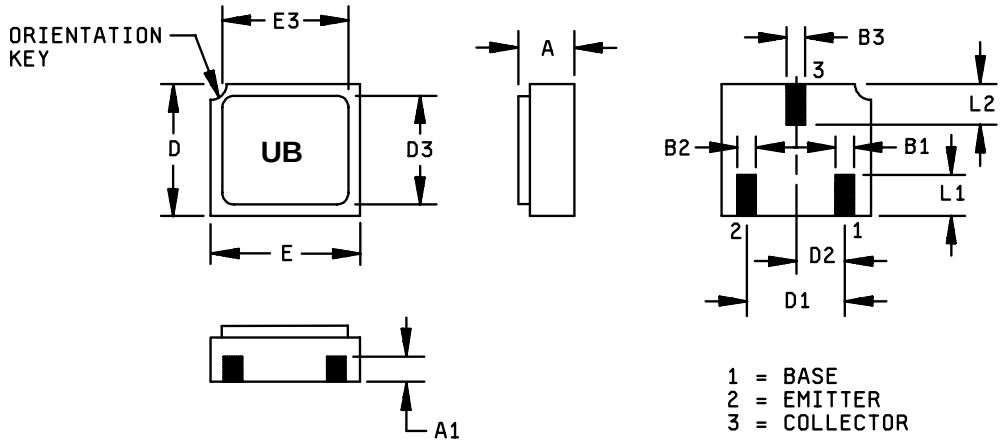
Symbol	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD	.178	.195	4.52	4.95	5
CH	.170	.210	4.32	5.33	
HD	.209	.230	5.31	5.84	5
LC	.100 TP		2.54 TP		7,8
LD	.016	.021	.406	.533	7,8
LL	.500	.750	12.70	19.05	7,8
LU	.016	.019	.41	.48	
L1		.050		1 .27	
L2	.250		6.35		
P	.100		2.54		
Q		.040		1.02	5
TL	.028	.048	.71	1.22	
TW	.036	.046	.91	1.17	
r		.007		.18	
α	45° TP				



NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only.
3. Beyond r (radius) maximum, TH shall be held for a minimum length of .011 (0.28 mm).
4. Dimension TL measured from maximum HD.
5. Body contour optional within zone defined by HD, CD, and Q.
6. Leads at gauge plane .054 +.001 -.000 inch (1.37 +0.03 -0.00 mm) below seating plane shall be within .007 inch (0.18mm) radius of true position (TP) at maximum material condition (MMC) relative to tab at MMC. The device may be measured by direct methods or by the gauge and gauging procedure shown in figure 2.
7. Dimension LU applies between L_1 and L_2. Dimension LD applies between L_2 and LL minimum. Diameter is uncontrolled in L_1 and beyond LL minimum.
8. All four leads.
9. Dimension r (radius) applies to both inside corners of tab.
10. In accordance with ANSI Y14.5M, diameters are equivalent to Φx symbology.
11. Lead 1 = emitter, lead 2 = base, lead 3 = collector, lead 4 = case (electrically connected).

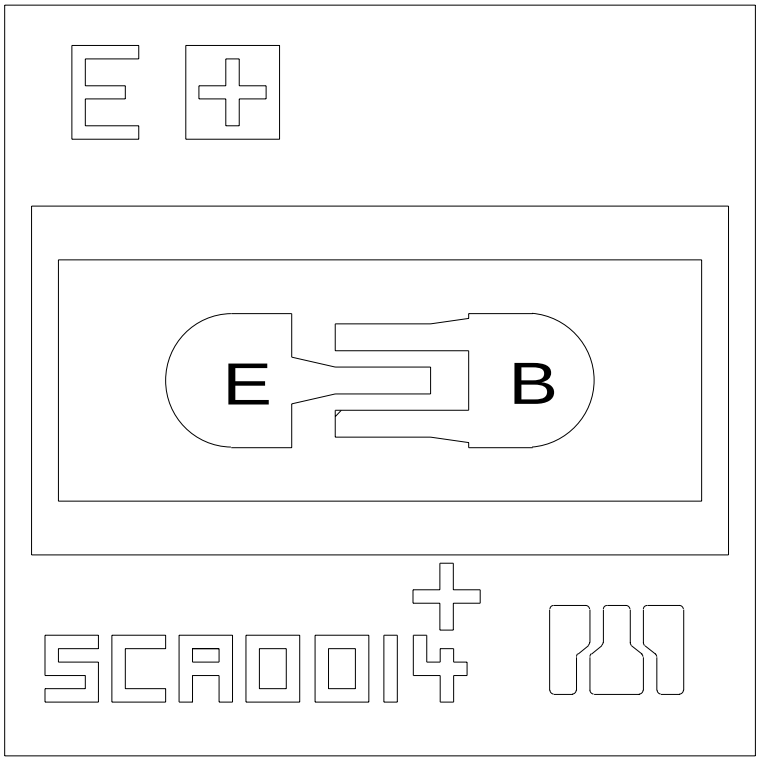
FIGURE 1. Physical dimensions for 2N4261 (T0-72).



Symbol	Dimensions				Note
	Inches		Millimeters		
	Min	Max	Min	Max	
A	.046	.056	0.97	1.42	
A1	.017	.035	0.43	0.89	
B1	.016	.024	0.41	0.61	
B2	.016	.024	0.41	0.61	
B3	.016	.024	0.41	0.61	
D	.085	.108	2.41	2.74	
D1	.071	.079	1.81	2.01	
D2	.035	.039	0.89	0.99	
D3	.085	.108	2.41	2.74	
E	.115	.128	2.82	3.25	
E3		.128		3.25	
L1	.022	.038	0.56	0.96	
L2	.022	.038	0.56	0.96	

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 2. Physical dimensions for 2N4261UB, surface mount.



Die size----------.016 x .016 inch (0.406 mm x 0.406mm).
Die thickness---.008 ±.0016 inch (0.203 mm ±0.406mm).
Base pad--------.0021 x.0021 inch (0.053 mm x 0.053 mm).
Emitter pad-----.0021 x.0021 inch (0.053 mm x 0.053 mm).
Back metal-----Gold, 6500 ± 1950 Ang.
Top metal------Aluminum, 14500 ± 2500 Ang.
Back side------Collector.
Glassivation---SiO_2, 7500 ± 1500 Ang.

FIGURE 3. JANHC and JANKC (A-version) die dimensions.

3.3 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-19500 and as follows:

g_s ..... Noise source conductance.
P_o..... Oscillator, power output.
R_{BE}..... External resistance, base to emitter.

3.4 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-19500 and figure 1 (TO-72), figure 2 (UB), and figure 3 (JANHC and JANKC) herein.

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 contract or purchase order (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 herein.

3.6 Electrical test requirements. The electrical test requirements shall be the subgroups in table I herein.

3.7 Marking. Marking shall be in accordance with MIL-PRF-19500. At the option of the manufacturer, marking may be omitted from the body of the UB package, but shall be retained on the initial container.

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). See table I.

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

* 4.2.1 JANHC and JANKC qualification. JANHC and JANKC qualification inspection shall be in accordance with MIL-PRF-19500.

* 4.2.2 Group E qualification. Group E qualification shall be performed herein for qualification or requalification only. In case qualification was awarded to a prior revision of the associated specification that did not request the performance of Group E tests, the tests specified in Group E herein shall be performed by the first inspection lot to this revision to maintain qualification.

4.3 Screening (JANS, 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)	Measurements	
	JANS	JANTX, JANTXV levels
*3c	Thermal impedance, method 3131 of MIL-STD-750.	Thermal impedance, method 3131 of MIL-STD-750.
9	I_{CEX2} and h_{FE2}	Not applicable
11	I_{CEX2} and h_{FE2}; ΔI_{CEX2} = 100 percent of initial value or 1 nA dc, whichever is greater. $\Delta h_{FE2} = \pm$ 15 percent of initial value.	I_{CEX2} and h_{FE2}
12	See 4.3.1.	See 4.3.1.
13	Subgroup 2 and 3 of table I herein; ΔI_{CEX2} = 100 percent of initial value or 1 nA dc, whichever is greater. $\Delta h_{FE2} = \pm$ 25 percent of initial value.	Subgroup 2 of table I herein; ΔI_{CEX2} = 100 percent of initial value or 2 nA dc, whichever is greater. $\Delta h_{FE2} = \pm$ 25 percent of initial value.

4.3.1 Power burn-in conditions. Power burn-in conditions are as follows: T_A = room ambient in accordance with the general requirements of MIL-STD-750 (see 4.5). V_{CB} = 10 V dc, P_T = 200 mW.

4.3.2 Screening (JANHC and JANKC). Screening of JANHC and JANKC die shall be in accordance with MIL-PRF-19500, “Discrete Semiconductor Die/Chip Lot Acceptance”. Burn-in duration for the JANKC level follows JANS requirements; the JANHC follows JANTX requirements.

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. Electrical measurements (end-points) shall be in accordance with table I herein.

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the tests and conditions specified for subgroup testing in table VIa (JANS) and 4.4.2.2 (JAN, JANTX, and JANTXV) herein. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2 herein.

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

	Subgroup	Method	Condition
*	B4	1037	V_{CB} = 10 V dc, 2,000 cycles.
*	B5	1027	V_{CB} = 10 V dc; 1,000 hours maximum rated power shall be applied and ambient temperature adjusted to achieve T_J = +150°C minimum. n = 45, c = 0.

4.4.2.2 Group B inspection, (JAN, JANTX and JANTXV). 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.

Step	Method	Conditions
1	1027	Steady-state life: Test condition B, 340 hours, V_{CB} = 10 V dc; maximum rated power shall be applied and ambient temperature adjusted to achieve T_J = +150°C minimum n = 45 devices, c = 0. For small lots, n = 12 devices, c = 0.
2	1027	The steady-state life test of step 1 shall be extended to 1,000 hours for each die design. Samples shall be selected from a wafer lot every twelve months of wafer production. Group B, step 2 shall not be required more than once for any single wafer lot. n = 45, c = 0.
3	1032	High temperature life (non-operating), t = 340 hours, T_A = +200°C. n = 22, c = 0.

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

a. 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. For JANS samples shall be selected from each inspection lot. See MIL-PRF-19500.

b. Must be chosen from an inspection lot that has been submitted to and passed group A, 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 (subgroups B4 and B5 for JANS, and group B for JAN, JANTX and JANTXV) may be pulled prior to the application of final lead finish.

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the tests and conditions specified for subgroup testing in table VII of MIL-PRF-19500 and herein. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2 herein.

	Subgroup	Method	Condition
	C2	2036	Test condition E; n/a for UB.
*	C5	3131	See 1.3 $R_{\theta JA}$
	C6	1026	V_{CB} = 10 V dc; P_T = 200 mW, time = 1,000 hrs, adjust T_A to achieve T_j = +150°C minimum. Not applicable to JAN, JANTX, JANTXV levels.

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 group A tests for conformance inspection. When the final lead finish is solder or any plating prone to oxidation at high temperature, the samples for C6 life test may be pulled prior to the application of final lead finish. 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 herein. Electrical measurements (end-points) shall be in accordance with table I, group A, subgroup 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 Collector base time constant. This parameter may be determined by applying an RF signal voltage of 0.5 volt (rms) across the collector base terminals, and measuring the ac voltage drop (V_{eb}) with a high impedance RF voltmeter across the emitter base terminals. With f = 31.8 MHz used for the 0.5 volt signal, the following computation applies: $r_b' C_c$: (ps) = 10 x Veb (millivolts).

4.5.3 Base cutoff current. This parameter shall be measured using method 3041 of MIL-STD-750, bias condition A. The value of the base to emitter cutoff current shall be read on the current meter inserted in the base circuit.

TABLE I. Group A inspection.

Inspection 1/	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Min	Max	
Subgroup 1 2/						
Visual and mechanical examination 3/	2071	n = 45 devices, c = 0				
Solderability 3/ 4/	2026	n = 15 leads, c = 0				
Resistance to solvents 3/ 4/ 5/	1022	n = 15 devices, c = 0				
Temp cycling 3/ 4/	1051	Test condition C, 25 cycles. n = 22 devices, c = 0				
Heremetic seal 4/ Fine leak Gross leak	1071	n = 22 devices, c = 0				
Electrical measurements 4/		Group A, subgroup 2				
Bond strength 3/ 4/	2037	Precondition T_A = +250°C at t = 24 hrs or T_A = +300°C at t = 2 hrs n = 11 wires, c = 0				
Subgroup 2						
Collector to emitter breakdown voltage	3011	Bias condition D, I_C = 10 mA dc;	$V_{(BR)CEO}$	15		V dc
Collector to base cutoff current	3036	Bias Condition D, V_{CBO}= 15 V	I_{CBO}		10	µA dc
Emitter-base cutoff current	3061	Bias condition D, V_{EB} = 4.5 V dc	I_{EBO}		10	µA dc
Collector to emitter cutoff current	3041	Bias condition A; V_{BE} = 0.4 V dc V_{CE} = 10 V dc	I_{CEX1}		50	nA dc
Collector to emitter cutoff current	3041	Bias condition A; V_{BE} = 2.0 V dc V_{CE} = 10 V dc	I_{CEX2}		5.0	nA dc
Base cutoff current		V_{BE} = 2.0 V dc; V_{CE} = 10 V dc, see 4.5.3	I_{BEX}		5.0	nA dc
Forward-current transfer ratio	3076	V_{CE} = 1.0 V dc; I_C = 1.0 mA dc; pulsed (see 4.5.1)	h_{FE1}	25		
Forward-current transfer ratio	3076	V_{CE} = 1.0 V dc; I_C = 10 mA dc; pulsed (see 4.5.1)	h_{FE2}	30	150	
Forward-current transfer ratio	3076	V_{CE} = 1.0 V dc; I_C = 30 mA dc; pulsed (see 4.5.1)	h_{FE3}	20		

See footnotes at end of table.

TABLE I. Group A inspection - Continued.

Inspection 1/	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Min	Max	
Subgroup 2 - Continued.						
Base to emitter voltage (non-saturated)	3066	Test condition B; V_{CE} = 1.0 V dc; I_C = 1.0 mA dc	V_{BE1}		0.8	V dc
Base to emitter voltage (non-saturated)	3066	Test condition B; V_{CE} = 1.0 V dc; I_C = 10 mA dc	V_{BE2}		1.0	V dc
Collector to emitter saturated voltage	3071	I_C = 1.0 mA dc; I_B = 0.1 mA dc	$V_{CE(sat)1}$		0.15	V dc
Collector to emitter saturated voltage	3071	I_C = 10 mA dc; I_B = 1.0 mA dc; pulsed (see 4.5.1)	$V_{CE(sat)2}$		0.35	V dc
Subgroup 3						
High-temperature operation:		T_A = +150°C				
Collector to emitter cutoff current	3041	Bias condition A; V_{BE} = 2.0 V dc V_{CE} = 10 V dc	I_{CEX3}		5.0	µA dc
Low-temperature operation :		T_A = -55°C				
Forward-current transfer ratio	3076	V_{CE} = 1.0 V dc I_C = 10 mA dc; pulsed (see 4.5.1)	h_{FE4}	15		
Subgroup 4						
Magnitude of common emitter small-signal short-circuit forward- current transfer ratio	3306	V_{CE} = 4.0 V dc; I_C = 5.0 mA dc; f = 100 MHz	$\|h_{fe1}\|$	15		
Magnitude of common emitter small-signal short-circuit forward- current transfer ratio	3306	V_{CE} = 10 V dc; I_C = 10 mA dc; f = 100 MHz	$\|h_{fe2}\|$	20		
Open capacitance (open circuit)	3236	V_{CB} = 4.0 V dc; I_E = 0; 100 kHz ≤ f ≤ 1.0 MHz	C_{obo}		2.5	pF
Input capacitance (output open circuit)	3240	V_{EB} = 0.5 V dc; I_C = 0; 100 kHz ≤ f ≤ 1.0 MHz	C_{ibo}		2.5	pF
Collector-base time constant		V_{CE} = 4.0 V dc; I_C = 5.0 mA dc; f = 31.8 MHz; see 4.5.2 and figure 4	$r'_{b'} C_{c1}$		60	ps
Collector-base time constant		V_{CE} = 4.0 V dc; I_C = 10 mA dc; f = 31.8 MHz; see 4.5.2 and figure 4	$r'_{b'} C_{c2}$		50	ps

See footnotes at end of table.

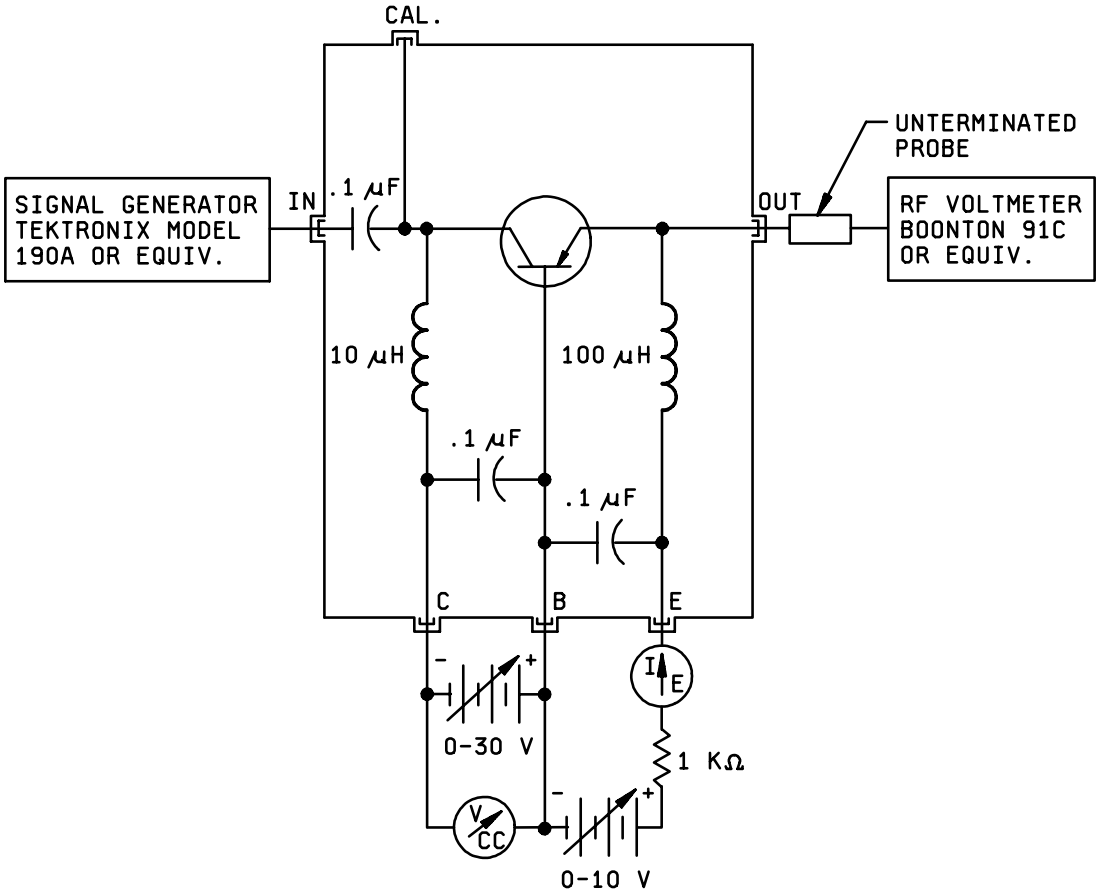
TABLE I. Group A inspection - Continued.

Inspection 1/	MIL-STD-750		Symbol	Limit		Unit
	Method	Conditions		Min	Max	
Subgroup 4 - Continued.						
Pulse response:	3251	Test condition B, except test circuit and pulse requirements in accordance with figure 5 herein.				
Turn-on time		V_{CC} = 17 V dc; I_C = 10 mA dc;	t_{on}		2.5	ns
Turn-off time		V_{CC} = 17 V dc; I_C = 10 mA dc;	t_{off}		3.5	ns
Subgroups 5, 6 and 7						
Not applicable						

1/ For sampling plan (unless otherwise specified) see MIL-PRF-19500.
2/ For resubmission of failed subgroup A1, double the sample size of the failed test or sequence of tests. A failure in group A, 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 JANS devices.
5/ Not required for laser marked devices.

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

Inspection	MIL-STD-750		Qualification
	Method	Conditions	
Subgroup 1			45 devices c = 0
Temperature cycling (air to air)	1051	Test condition C, 500 cycles.	
Hermetric seal	1071		
Fine leak Gross leak			
Electrical measurements		See group A, subgroup 2 and 4.5.3 herein.	
Subgroup 2			45 devices c = 0
Intermittent life	1037	Intermittent operation life: V_{CB} = 10 V dc; 6,000 cycles.	
Electrical measurements		See group A, subgroup 2 and 4.5.3 herein.	
Subgroup 3, 4, 5, 6, and 7			
Not applicable			
Subgroup 8			45 devices c = 0
Reverse stability	1033	Condition A ≥ 400 V Condition B < 400 V	

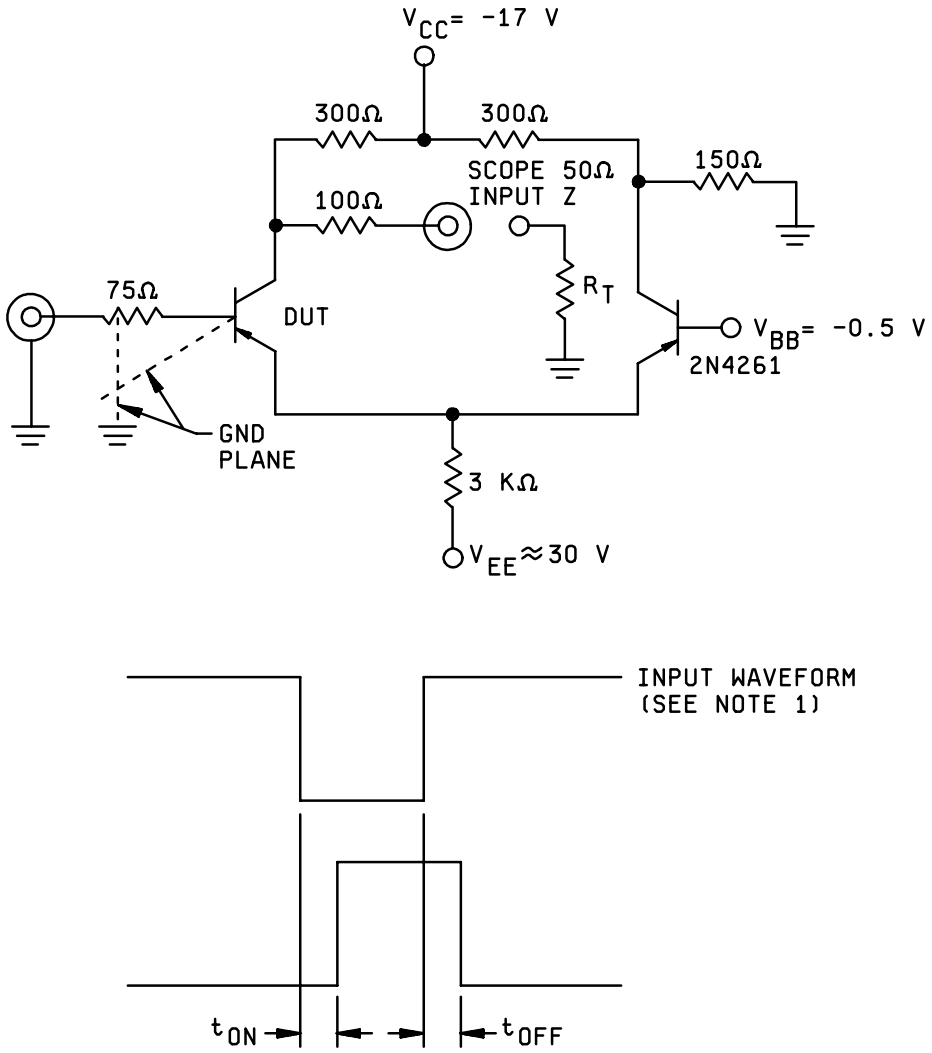


Procedure:

1. Set signal generator to 31.8 MHz and connect to “in” connector on test jig.
2. Connect low voltage dc power supplies as shown. A 1 k ohm resistor should be placed in series with the emitter power supply to prevent damage to transistors being tested.
3. Place transistor to be tested in socket. Set collector supply for V_{CE} = 4.0 V dc, and emitter supply for I_C as specified.
4. Connect RF voltmeter with unterminated probe adapter to “CAL” connector on test jig. Adjust signal generator until RF voltage is 0.5 volts. (Note: Decade switching of voltmeter should be accurate from 1 mV to 3 volts. If not, input voltage may be set using voltage dividers, utilizing lower scales of the RF voltmeter. If this is done, the voltage dividers should be left in place when the voltmeter is removed, as they constitute a load on the input of the circuit.
5. Remove RF voltmeter from “CAL” connector to “OUT” connector. Meter will now read $r_b' C_c$ as follows:

Meter range full scale	$r_b' C_c$ range
0.003 volts	10 to 30 ps
0.01 volts	30 to 100 ps
0.03 volts	100 to 300 ps

FIGURE 4. Collector base time constant test circuit (an equivalent circuit may be used).



NOTES:
1. The input waveform is supplied by a pulse generator with the following characteristics: Z_{OUT} = 50 ohms; PW = 30 ns; duty cycle ≤ 2 percent.
2. Resistors shall be noninductive types.
3. The dc power supplies may require additional bypassing in order to minimize ringing.

FIGURE 5. Switching time test circuit and waveforms.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements should 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 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.

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 2.2.1).

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.

6.4. Suppliers of JANHC and JANKC die. The qualified JANHC and JANKC suppliers with the applicable letter version (example JANHCA2N4261) will be identified on the QPL.

Die ordering information	
PIN	Manufacturer
	34156
2N4261	JANHCA2N4261, JANKCA2N4261

* 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
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5961-2555)

Review activities:
Air Force - 19, 71, 99

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-19500/511E	2. DOCUMENT DATE 2 April 2002

3. **DOCUMENT TITLE** SEMICONDUCTOR DEVICE, TRANSISTOR, PNP, SILICON, SWITCHING TYPE 2N4261, 2N4261UB, JAN, JANTX, JANTXV AND JANS, JANHC AND JANKC

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 614-692-0510	DSN 850-0510	FAX 614-692-6939	EMAIL alan.barone@dscc.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			