TYPES 2N3702, 2N3703, A8T3702, A8T3703
P-N-P SILICON TRANSISTORS

BULLETIN NO. DL-S 7311772, JANUARY 1973

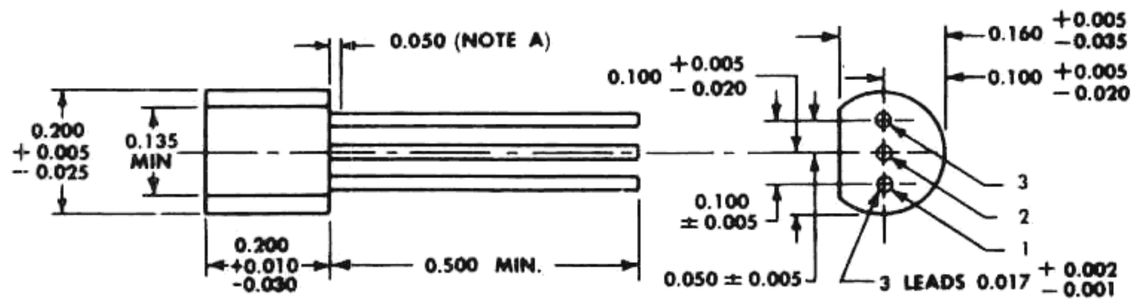
SILECT† TRANSISTORS‡

- For Medium-Power Amplifiers, Class B Audio Outputs, Hi-Fi Drivers
- Also Available in Pin-Circle Versions . . . 2N5447, 2N5448
- For Complementary Use with 2N3704 thru 2N3706 or A8T3704 thru A8T3706

mechanical data

These transistors are encapsulated in a plastic compound specifically designed for this purpose, using a highly mechanized process developed by Texas Instruments. The case will withstand soldering temperatures without deformation. These devices exhibit stable characteristics under high-humidity conditions and are capable of meeting MIL-STD-202C, Method 106B. The transistors are insensitive to light.

*ALL JEDEC TO-92 DIMENSIONS AND NOTES ARE APPLICABLE



NOTES: A. Lead diameter is not controlled in this area.
B. All dimensions are in inches.

DEVICE	LEADS 1	2	3
2N3702, 2N3703	Emitter	Collector	Base
A8T3702, A8T3703	Emitter	Base	Collector

2N3702 2N3703	A8T3702 A8T3703
	
ECB	EBC

absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

	2N3702 A8T3702	2N3703 A8T3703
Collector-Base Voltage	−40 V*	−50 V*
Collector-Emitter Voltage (See Note 1)	−25 V*	−30 V*
Emitter-Base Voltage	−5 V*	−5 V*
Continuous Collector Current	−200 mA*	
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 2)	625 mW§ 360 mW*	
Continuous Device Dissipation at (or below) 25°C Lead Temperature (See Note 3)	1.25 W§ 500 mW*	
Storage Temperature Range	−65°C to 150°C*	
Lead Temperature 1/16 Inch from Case for 10 Seconds	260°C*	

NOTES: 1. These values apply when the base-emitter diode is open-circuited.
2. Derate the 625-mW rating linearly to 150°C free-air temperature at the rate of 5 mW/°C. Derate the 360-mW (JEDEC registered) rating linearly to 150°C free-air temperature at the rate of 2.88 mW/°C.
3. Derate the 1.25-W rating linearly to 150°C lead temperature at the rate of 10 mW/°C. Derate the 500-mW (JEDEC registered) rating linearly to 150°C lead temperature at the rate of 4 mW/°C. Lead temperature is measured on the collector lead 1/16 inch from the case.

*The asterisk identifies JEDEC registered data for the 2N3702 and 2N3703 only. This data sheet contains all applicable registered data in effect at the time of publication.

†Trademark of Texas Instruments

‡U.S. Patent No. 3,439,238

§Texas Instruments guarantees these values in addition to the JEDEC registered values which are also shown.

USES CHIP P20

*electrical characteristics at 25°C free-air temperature

PARAMETER		TEST CONDITIONS	2N3702 A8T3702 MIN	2N3702 A8T3702 MAX	2N3703 A8T3703 MIN	2N3703 A8T3703 MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\ \mu A$, $I_E = 0$	−40		−50		V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10$ mA, $I_B = 0$, See Note 4	−25		−30		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\ \mu A$, $I_C = 0$	−5		−5		V
I_{CBO}	Collector Cutoff Current	$V_{CB} = -20$ V, $I_E = 0$		−100		−100	nA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -3$ V, $I_C = 0$		−100		−100	nA
h_{FE}	Static Forward Current Transfer Ratio	$V_{CE} = -5$ V, $I_C = -50$ mA, See Note 4	60	300	30	150	
V_{BE}	Base-Emitter Voltage	$V_{CE} = -5$ V, $I_C = -50$ mA, See Note 4	−0.6	−1	−0.6	−1	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_B = -5$ mA, $I_C = -50$ mA, See Note 4		−0.25		−0.25	V
f_T	Transition Frequency	$V_{CE} = -5$ V, $I_C = -50$ mA, See Note 5	100		100		MHz
C_{obo}	Common-Base Open-Circuit Output Capacitance	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		12		12	pF

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NOTES: 4. These parameters must be measured using pulse techniques, $t_w = 300\ \mu s$, duty cycle $\leqslant 2\%$.

5. To obtain f_T, the $|h_{fe}|$ response with frequency is extrapolated at the rate of −6 dB per octave from f = 20 MHz to the frequency at which $|h_{fe}| = 1$.

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THERMAL INFORMATION

FREE-AIR TEMPERATURE
DISSIPATION DERATING CURVE

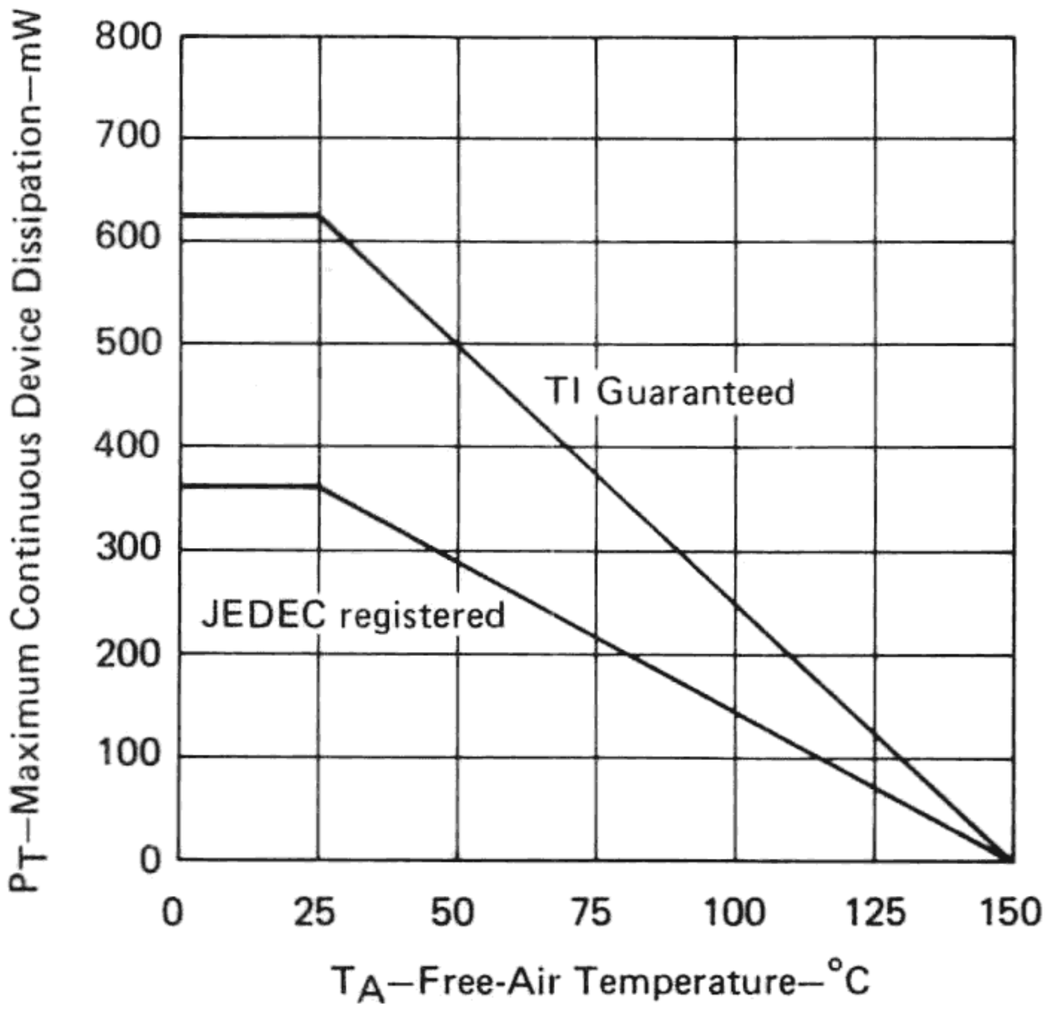

FIGURE 1

LEAD TEMPERATURE
DISSIPATION DERATING CURVE

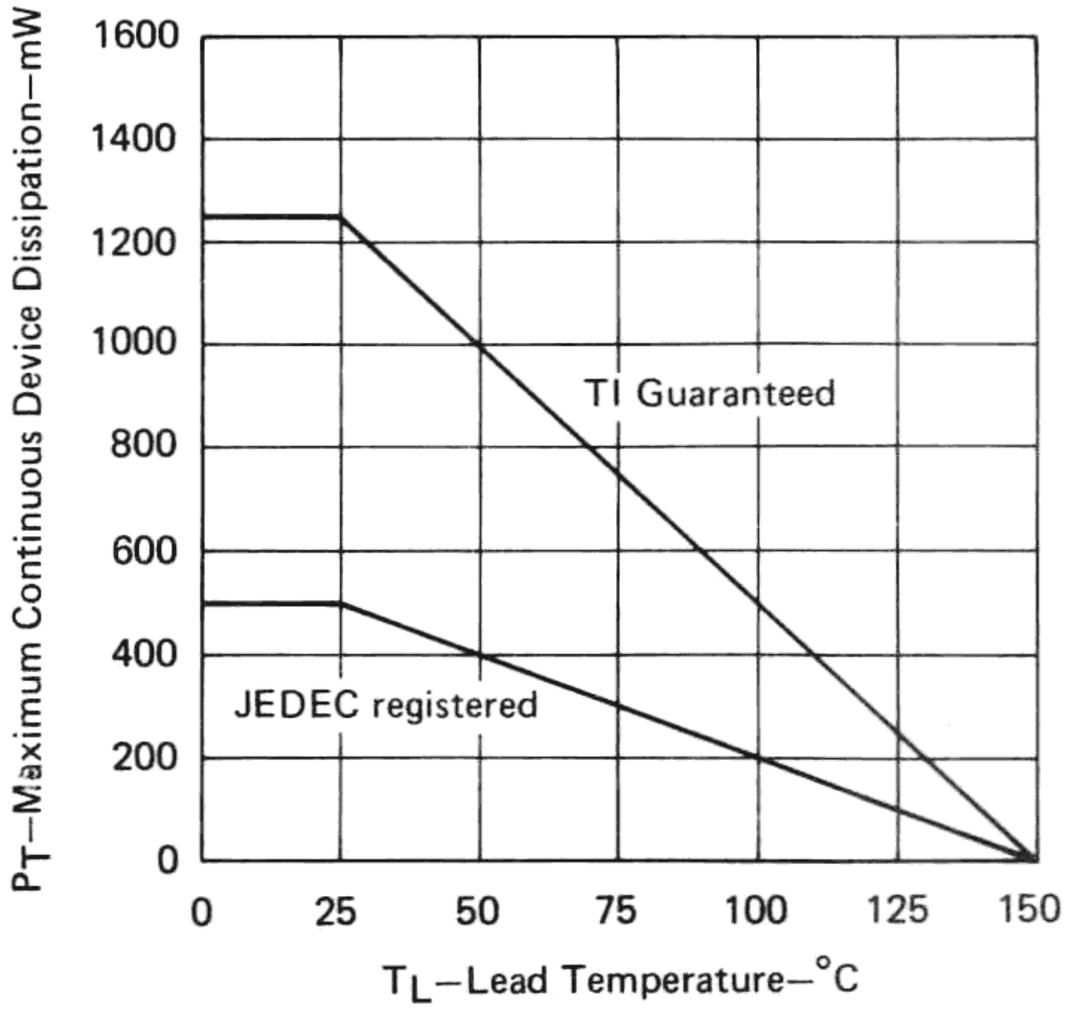

FIGURE 2