

TYPES TIS62A, TIS63A, TIS64A N-P-N SILICON TRANSISTORS

BULLETIN NO. DL-S 7311986, MARCH 1973

SILECT† TRANSISTORS‡ FOR APPLICATION IN AM-FM RECEIVERS AND GENERAL-PURPOSE HIGH-FREQUENCY AMPLIFIERS

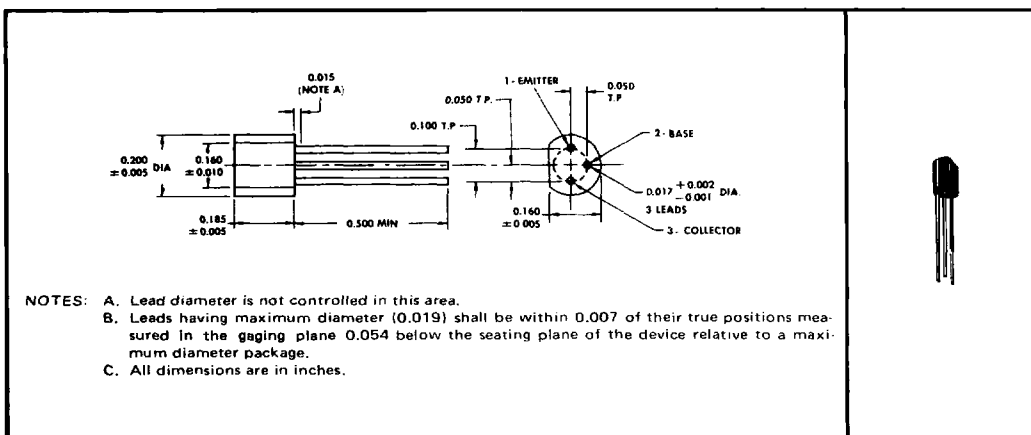
TIS62A Features:

- f_T . . . 500 MHz Min
- Low $r_b'C_C$. . . 20 ps Max
- F . . . 6 dB Max at 100 MHz

Rugged, One-Piece Construction with Standard TO-18 100-mil Pin Circle

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.



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

Collector-Base Voltage	30 V
Collector-Emitter Voltage (See Note 1)	12 V
Emitter-Base Voltage	3 V
Continuous Collector Current	30 mA
Continuous Device Dissipation at (or below) 25°C Free-Air Temperature (See Note 2)	500 mW
Storage Temperature Range	-65°C to 150°C
Lead Temperature 1/16 Inch from Case for 10 Seconds	260°C

- NOTES: 1. This value applies when the base-emitter diode is open-circuited.
2. Derate linearly to 150°C free-air temperature at the rate of 4 mW/°C.

† Trademark of Texas Instruments
‡ U.S. Patent No. 3,439,238

USES CHIP N22

TYPES TIS62A, TIS63A, TIS64A

N-P-N SILICON TRANSISTORS

electrical characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	TIS62A		TIS63A		TIS64A		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
$V_{(BR)CBO}$ Collector-Base Breakdown Voltage	$I_C = 100 \mu A, I_E = 0$	30		30		30		V
$V_{(BR)CEO}$ Collector-Emitter Breakdown Voltage	$I_C = 4 mA, I_B = 0$, See Note 3	12		12		12		V
$V_{(BR)EBO}$ Emitter-Base Breakdown Voltage	$I_E = 100 \mu A, I_C = 0$	3		3		3		V
I_{CBO} Collector Cutoff Current	$V_{CB} = 10 V, I_E = 0$		100		100		100	nA
h_{FE} Static Forward Current Transfer Ratio	$V_{CE} = 10 V, I_C = 4 mA$	30	225	30	225	50	150	
$ h_{fe} $ Small-Signal Common-Emitter Forward Current Transfer Ratio	$V_{CE} = 10 V, I_C = 4 mA, f = 455 kHz$				27			dB
	$V_{CE} = 10 V, I_C = 4 mA, f = 10 MHz$				27			
	$V_{CE} = 10 V, I_C = 4 mA, f = 100 MHz$	5	18	5	18	5	18	
C_{cb} Collector-Base Capacitance	$V_{CB} = 10 V, I_E = 0, f = 1 MHz$, See Note 4	0.4	1.3	0.4	1.3	0.4	1.3	pF
$r_b'c_c$ Collector-Base Time Constant	$V_{CB} = 10 V, I_E = -4 mA, f = 79.8 MHz$		20		20		20	ps

NOTES: 3. This parameter must be measured using pulse techniques. $t_w = 300 \mu s$, duty cycle $\leq 2\%$.

4. C_{cb} measurement employs a three-terminal capacitance bridge incorporating a guard circuit. The emitter is connected to the guard terminal of the bridge.

4

operating characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	TIS62A		UNIT
		TYP	MAX	
F Spot Noise Figure	$V_{CE} = 10 V, I_C = 2 mA, R_G = 300 \Omega, f = 100 MHz$	4	6	dB

THERMAL INFORMATION

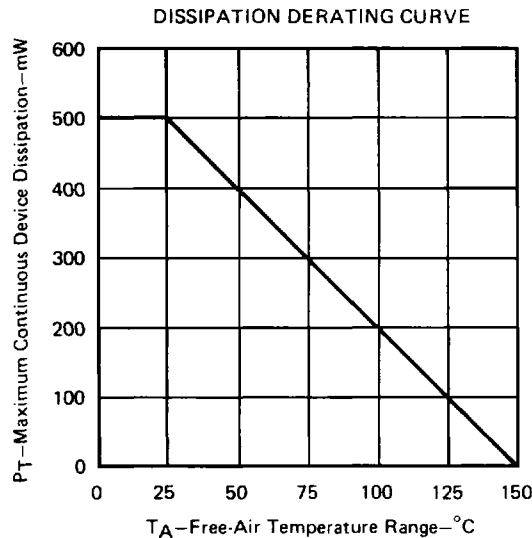


FIGURE 1