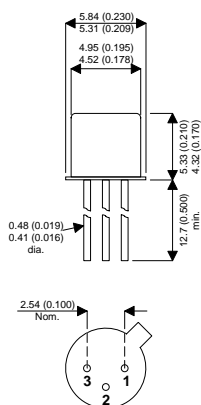


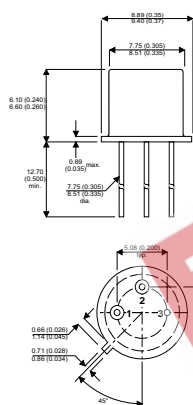
MECHANICAL DATA

Dimensions in mm (inches)



TO18 METAL PACKAGE

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector



TO5 METAL PACKAGE

PIN 1 – Emitter PIN 2 – Base PIN 3 – Collector

PNP SILICON PLANAR EPITAXIAL TRANSISTORS

FEATURES

- SILICON PLANAR EPITAXIAL PNP TRANSISTOR

APPLICATIONS:

These PNP silicon planar epitaxial transistors are designed for digital and analog applications at current levels up to 0.5 amps.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

		2N3503	2N3502
Maximum Voltages		2N3505	2N3504
V_{CBO}	Collector – Base Voltage	- 60V	-45V
V_{CEO}	Collector – Emitter Voltage	-60V	-45V
V_{EBO}	Emitter – Base Voltage	-5V	-5V
Maximum Power Dissipation		2N3502	2N3504
P_D	Total Dissipation @ 25°C Case Temperature	2N3503	2N3505
P_D	Total Dissipation @ 25°C Free Air Temperature	3 W	1.3 W
		0.7 W	0.4 W
T_J	Storage Temperature	-65°C to +200°C	
	Operating Junction Temperature		

ELECTRICAL CHARACTERISTICS (25°C free air temperature unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
BV _{CBO} Collector to Base Breakdown Voltage	I _C = 10μA I _E = 0	2N3503 / 2N3505	-60		V	
		2N3502 / 2N3504	-45			
BV _{EBO} Emmitter to Base Breakdown Voltage	I _E = 10μA I _C = 0	-5			V	
V _{CEO} Collector-Emitter Sustaining Voltage	I _C = 10mA I _B = 0	2N3503 / 2N3505	-60		V	
		2N3502 / 2N3504	-45			
I _{CES} Collector Cutoff Current	V _{CE} = -50V V _{BE} = 0	2N3503 / 2N3505		0.07	10	nA
	V _{CE} = -30V V _{BE} = 0	2N3502 / 2N3504		0.05	10	
I _{CBO} ⁽¹⁵⁰⁾ Collector Reverse Current	I _E = 0 t = 150°C	V _{CB} = -50V	2N3503 / 2N3505		10	μA
		V _{CB} = -30V	2N3502 / 2N3504		10	
h _{FE} DC Current Gain	I _C = 10mA V _{CE} = -10V		140	270		—
	I _C = 50mA V _{CE} = -1.0V		115	160	300	
	I _C = 1.0mA V _{CE} = -10 V		135	200		
	I _C = 150mA V _{CE} = -10V		100	150	300	
	I _C = 10μA V _{CE} = -10V		80	120		
	I _C = 500mA V _{CE} = -10 V I _C = 50mA V _{CE} = -1.0V	t = -55°C	50	70		
V _{CE(sat)} Collector Saturation Voltage	I _C = 50mA I _B = 2.5mA		-0.08	-0.25	V	
	I _C = 150mA I _B = 15mA		-0.18	-0.4		
	I _C = 500mA I _B = 50mA		-0.5	-1.6		
V _{BE(sat)} Base Saturation Voltage	I _C = 50mA I _B = 2.5mA		-0.9	-1.0	V	
	I _C = 150mA I _B = 15mA		-1.0	-1.3		
	I _C = 500mA I _B = 50mA			-2.0		
F _T Transition Frequency	I _C = 50mA V _{CE} = -20V f = 100MHz	2	2.50		—	
C _{ob} Output Capacitance	V _{CB} = -10V I _E = 0		4.5	8.0	pf	
t _{on} Turn On Time	I _C = 300mA I _{B1} = 30mA I _{B2} = -30mA		30	40	ns	
t _{off} Turn Off Time			65	100		