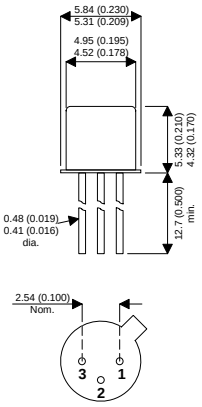
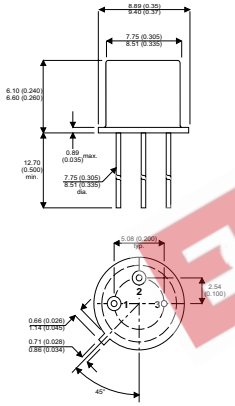
2N3502
2N3503
2N3504
2N3505

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 trasistors are designed for digital and analog applications at current levels up 0.5 amps.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

		2N3503 2N3505	2N3502 2N3504
Maximum Voltages			
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 2N3503**	**2N3504 2N3505**
P_D	Total Dissipation @ 25°C Case Temperature	3 W	1.3 W
P_D	Total Dissipation@ 25°C Free Air Temperature	0.7 W	0.4 W
T_J	Storage Temperature	-65°C to +200°C	
	Operating Junction Temperature	200°C	

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E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

2N3502
2N3503
2N3504
2N3505

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}	Emmiter 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	t = -55°C	50	70		
		I_C = 50mA	V_{CE} = -1.0V		50	100		
$V_{CE(sat)}$	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 = 100MH$_Z$	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	

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