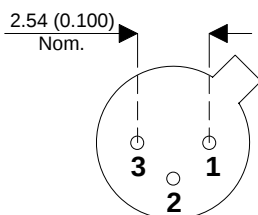
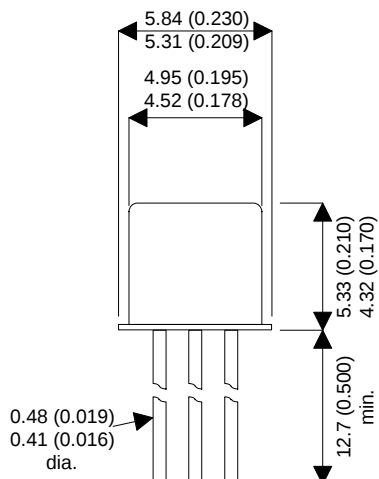


MECHANICAL DATA

Dimensions in mm (inches)



TO-18 METAL PACKAGE

Underside View

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

HIGH SPEED MEDIUM POWER PNP SWITCHING TRANSISTOR

FEATURES

- SILICON PLANAR EPITAXIAL PNP TRANSISTOR
- HIGH SPEED SATURATED SWITCHING
- ALSO AVAILABLE IN CERAMIC SURFACE MOUNT PACKAGE

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

V_{CBO}	Collector - Base Voltage	-60V
V_{CEO}	Collector - Emitter Voltage	-60V
V_{EBO}	Emitter - Base Voltage	-5V
I_C	Collector Current	600mA
P_D	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	400mW
	Derate above 25°C	2.28mW / $^\circ\text{C}$
P_D	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	1.8W
	Derate above 25°C	10.3mW / $^\circ\text{C}$
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-65 to +200 $^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS							
$V_{(BR)CEO}^1$	Collector – Emitter Breakdown Voltage	$I_C = 10\text{mA}$	$I_B = 0$	60			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	$I_C = 10\mu\text{A}$	$I_E = 0$	60			V
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$	$I_C = 0$	5			V
I_{CEX}	Collector Cut-off Current	$V_{CE} = 30\text{V}$	$V_{BE} = 0.5\text{V}$			50	nA
I_{CBO}	Collector Cut-off Current	$I_E = 0$	$V_{CB} = 50\text{V}$			0.01	μA
			$T_A = 150^\circ\text{C}$			10	
I_B	Base Current	$V_{CE} = 60\text{V}$	$V_{BE} = 0.5\text{V}$			50	nA
ON CHARACTERISTICS							
$V_{CE(sat)}^1$	Collector – Emitter Saturation Voltage	$I_C = 150\text{mA}$	$I_B = 15\text{mA}$			0.4	V
		$I_C = 500\text{mA}$	$I_B = 50\text{mA}$			1.6	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	$I_C = 150\text{mA}$	$I_B = 15\text{mA}^1$	0.6		1.3	V
		$I_C = 500\text{mA}$	$I_C = 50\text{mA}$			2.6	
h_{FE}	DC Current Gain	$I_C = 0.1\text{mA}$	$V_{CE} = 10\text{V}$	75			—
		$I_C = 1\text{mA}$	$V_{CE} = 10\text{V}$	100			
		$I_C = 10\text{mA}$	$V_{CE} = 10\text{V}$	100			
		$I_C = 150\text{mA}$	$V_{CE} = 10\text{V}^1$	100		300	
		$I_C = 500\text{mA}$	$V_{CE} = 10\text{V}^1$	50			
SMALL SIGNAL CHARACTERISTICS							
f_T	Transition Frequency ²	$I_C = 50\text{mA}$ $f = 100\text{MHz}$	$V_{CE} = 20\text{V}$	200			MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}$ $f = 100\text{kHz}$	$I_E = 0$			8	pF
C_{ib}	Input Capacitance	$V_{BE} = 2\text{V}$ $f = 100\text{kHz}$	$I_C = 0$			30	pF
SWITCHING CHARACTERISTICS							
t_{on}	Turn-On Time	$V_{CC} = 30\text{V}$			26	45	ns
t_d	Delay Time	$I_C = 150\text{mA}$			6	10	
t_r	Rise Time	$I_{B1} = 15\text{mA}$			20	40	
t_{off}	Turn-Off Time	$V_{CC} = 6\text{V}$			70	100	ns
t_s	Storage Time	$I_C = 150\text{mA}$			50	80	
t_f	Fall Time	$I_{B1} = I_{B2} = 15\text{mA}$			20	30	

NOTES:

- 1) Pulse test: $t_p \leq 300\mu\text{s}$, $\delta \leq 2\%$
- 2) f_T is defined as the frequency at which h_{FE} extrapolates to unity.