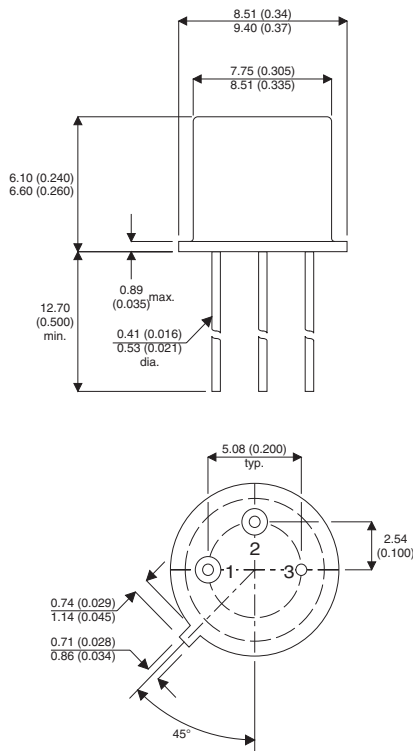


MECHANICAL DATA

Dimensions in mm (inches)



**NPN
SILICON TRANSISTOR**

FEATURES

- SILICON PLANAR EPITAXIAL NPN TRANSISTOR
- SCREENING OPTIONS AVAILABLE

APPLICATIONS:

- General Purpose Amplifier
- Switching Circuits

TO-39(TO205AD) METAL PACKAGE

Underside View

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

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

V_{CBO}	Collector – Base Voltage	60V
V_{CER}	Collector – Emitter Voltage ($I_B = 0$)	40V
V_{EBO}	Emitter – Base Voltage ($I_B = 0$)	5V
P_D	Total Device Dissipation @ $T_A = 25^{\circ}C$	0.6W
P_D	Total Device Dissipation @ $T_C = 25^{\circ}C$	2.0W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-65 to +200°C
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	292°C/W
$R_{\theta JC}$	Thermal Resistance Junction to Case	87.5°C/W

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CBO(BR)*}}$ Collector - Base Breakdown Voltage	$I_{\text{C}} = 100\mu\text{A}$ $I_{\text{B}} = 0\text{A}$	60			V
$V_{\text{CER(BR)*}}$ Collector - Emitter Breakdown Voltage	$I_{\text{C}} = 100\text{mA}$ $R_{\text{BE}} = 10\Omega$	40			V
$V_{\text{EBO(BR)*}}$ Emitter - Base Breakdown Voltage	$I_{\text{E}} = 100\mu\text{A}$ $I_{\text{C}} = 0$	5			V
I_{CBO} Collector Cut-off Current	$V_{\text{CB}} = 30\text{V}$ $V_{\text{BE}} = 0\text{V}$ $T_{\text{C}} = 150^{\circ}\text{C}$			1.0	μA
				100	
$V_{\text{CE(sat)*}}$ Collector - Emitter Saturation Voltage	$I_{\text{C}} = 150\text{mA}$ $I_{\text{B}} = 15\text{mA}$			1.5	V
$V_{\text{BE(sat)*}}$ Base - Emitter Saturation Voltage	$I_{\text{C}} = 150\text{mA}$ $I_{\text{B}} = 15\text{mA}$			1.3	V
h_{FE} DC Current Gain	$V_{\text{CE}} = 10\text{V}$ $I_{\text{C}} = 150\text{mA}$	20		60	-
C_{ob} Output Capacitance	$V_{\text{CB}} = 10\text{V}$ $I_{\text{E}} = 0$ $f = 1.0\text{ MHz}$			35	pF
f_{T} Current Gain Bandwidth Product	$V_{\text{CB}} = 10\text{V}$ $I_{\text{C}} = 50\text{mA}$ $f = 20\text{ MHz}$	40			MHz

(*) Pulse test: $t_{\text{p}} \leq 300\mu\text{s}$, $\delta \leq 1.5\%$