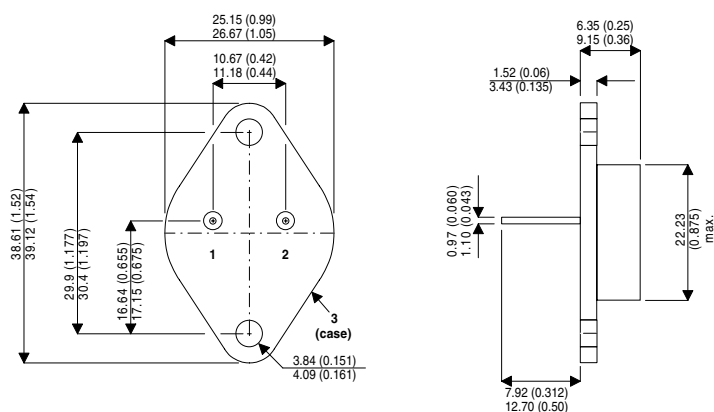


MECHANICAL DATA

Dimensions in mm(inches)



TO-3(TO204AA)

PIN 1 — Base PIN 2 — Emitter Case is Collector

NPN SILICON POWER TRANSISTOR

FEATURES

- LOW SATURATION VOLTAGES
- HIGH RELIABILITY
- HERMETIC PACKAGE

APPLICATIONS

- POWER SWITCHING CIRCUITS
- POWER AMPLIFIER APPLICATIONS

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

V_{CBO}	Collector – Base Voltage ($I_E = 0$)	40V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	40V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	5.0V
I_C	Collector Current Continuous	5A
I_{CM}	Collector Current Peak	10A
I_B	Base Current	1.0A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	87.5W
	Derate above $25^{\circ}C$	0.5 W/ $^{\circ}C$
T_{stg}	Storage Temperature	-65 to $200^{\circ}C$
T_j	Junction Temperature	$200^{\circ}C$

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
$V_{\text{CEO(BR)*}}$ Collector - Emitter Breakdown Voltage	$I_{\text{C}} = 200\text{mA}$	40			V
I_{CEO} Collector Cut-off Current	$V_{\text{CE}} = 40\text{V}$ $I_{\text{B}} = 0$			1.0	mA
I_{CEX} Collector Cut-off Current	$V_{\text{CE}} = 40\text{V}$ $V_{\text{BE}} = 1.5\text{V}$ $T_{\text{CASE}} = 150^{\circ}\text{C}$			0.1 2	mA
I_{CBO} Collector Cut-off Current	$V_{\text{CB}} = 40\text{V}$ $I_{\text{E}} = 0$			0.1	mA
I_{EBO} Emitter Cut-off Current	$V_{\text{BE}} = 5\text{V}$ $I_{\text{C}} = 0$			1.0	mA
$h_{\text{FE}*}$ DC Current Gain	$I_{\text{C}} = 1.0\text{A}$ $V_{\text{CE}} = 2\text{V}$ $I_{\text{C}} = 5\text{A}$ $V_{\text{CE}} = 2\text{V}$	20 7		80	—
$V_{\text{CE(sat)*}}$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 1.0\text{A}$ $I_{\text{B}} = 0.1\text{A}$ $I_{\text{C}} = 5\text{A}$ $I_{\text{B}} = 1.0\text{A}$			0.4 1.5	V
$V_{\text{BE(on)*}}$ Emitter Base on Voltage	$I_{\text{C}} = 1.0\text{A}$ $V_{\text{CE}} = 2\text{V}$			1.2	V
h_{fe} Small Signal Current Gain	$I_{\text{C}} = 0.5\text{A}$ $V_{\text{CE}} = 10\text{V}$ $f = 1.0\text{ kHz}$	20			—
f_{T} Current Gain Bandwidth product	$I_{\text{C}} = 1.0\text{A}$ $V_{\text{CE}} = 10\text{V}$ $f = 1.0\text{ MHz}$	4.0			MHz

THERMAL CHARACTERISTICS

$R_{\theta\text{JC}}$	Thermal Resistance Junction to Case	Max	2.0	$^{\circ}\text{C/W}$
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* Pulse test $t_{\text{p}} = 300\mu\text{s}$, $\delta = 2\%$