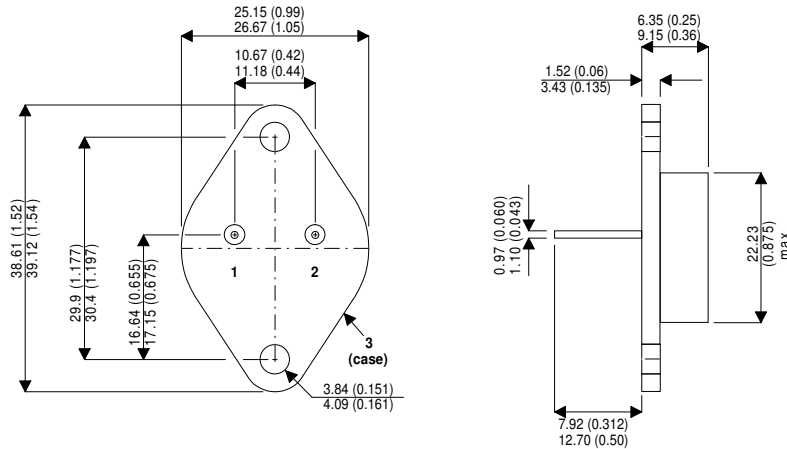


MECHANICAL DATA

Dimensions in mm (inches)



HIGH CURRENT NPN SILICON TRANSISTOR

FEATURES

- HIGH CURRENT FAST SWITCHING
- HIGH RELIABILITY
- SCREENING OPTIONS AVAILABLE

APPLICATIONS

- SWITCHING CIRCUITS
- LARGE SIGNAL/POWER AMPLIFIERS

TO3 (TO204AA)

Pin 1 = Base Pin 2 = Emitter Case = Collector

ABSOLUTE MAXIMUM RATINGS

$T_{CASE} = 25^{\circ}\text{C}$ unless otherwise stated

V_{CBO}	Collector - Base Voltage	200V
V_{CEO}	Collector - Emitter Voltage	140V
V_{EBO}	Emitter - Base Voltage	10V
I_C	Continuous Collector Current	6A
I_B	Base Current	3A
P_{tot}	Total Power Dissipation at $T_{case} = 25^{\circ}\text{C}$ Derate above 25°C	50W 0.29 W/ $^{\circ}\text{C}$
T_J	Junction Temperature	200 $^{\circ}\text{C}$
T_{stg}	Storage Temperature	-65 to 200 $^{\circ}\text{C}$

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.

THERMAL CHARACTERISTICS

	Max	Unit
$R_{thj-case}$ Thermal resistance to case	3.5	°C/W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO} Collector Cut-Off Current	$V_{CE} = 140V$ $I_B = 0$			1.0	mA
I_{CES} Collector Cut-Off Current	$V_{CE} = 180V$ $V_{BE} = 0$			1.0	
I_{EBO} Emitter Cut-Off Current	$V_{EB} = 10V$ $I_C = 0$			1.0	
$V_{(BR)CEO}^*$ Collector-Emitter Breakdown Voltage	$I_C = 50mA$ $I_B = 0$	140			V
$V_{(BR)CBO}^*$ Collector-Base Breakdown Voltage	$I_C = 3mA$	200			
$V_{CE(sat)}^*$ Collector-Emitter Saturation Voltage	$I_C = 2.0A$ $I_B = 0.25A$			0.6	
$V_{BE(sat)}^*$ Base-Emitter Saturation Voltage	$I_C = 2.0A$ $I_B = 0.25A$			1.2	
h_{FE}^* Forward-current transfer ratio	$I_C = 1.0A$ $V_{CE} = 4.0V$		55		
	$I_C = 2.0A$ $V_{CE} = 4.0V$	15	20	45	

DYNAMIC CHARACTERISTICS

C_{obo} Output Capacitance	$I_E = 0$ $V_{CB} = 10V$ $f = 1.0MHz$		65	120	pF
F_T Transition Frequency	$I_C = 0.5A$ $V_{CE} = 15V$ $f = 10.0MHz$	10			MHz
T_{on} Turn-on time	$I_C = 5.0A$ $I_{B1} = 1.0A$		0.3	0.5	μs
T_{off} Turn-off time	$I_C = 5.0A$ $I_{B1} = -I_{B2} = 1.0A$		1.5	2.0	

* Pulse test $t_p = 300\mu s$, $\delta < 2\%$

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