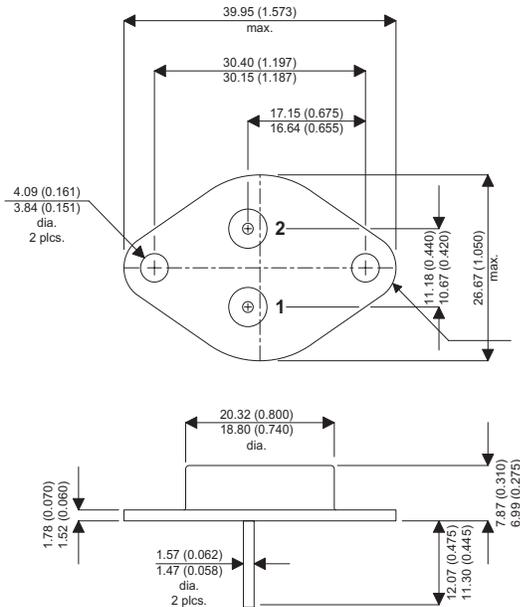


MECHANICAL DATA

Dimensions in mm (inches)



TO-3 (TO-204AE)

Pin 1 – Base Pin 2 – Emitter Case – Collector

NPN HIGH POWER SILICON TRANSISTOR

Features

- High Current & High Speed Switching
- High Reliability Screening Options Available Including:-
 - Semelab Space Level discrete component processing which is based on conformance & screening levels of MIL-PRF-19500 & ESCC 5000

Applications

For high reliability general purpose applications, where high speed & high current switching and amplification is required.

ABSOLUTE MAXIMUM RATINGS

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

V_{CBO}	Collector - Base Voltage	150V
V_{CEO}	Collector - Emitter Voltage ($I_B = 0$)	120V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	7.0V
I_C	Continuous Collector Current	30A
I_B	Base Current	10A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$ $T_{amb} \leq 25^{\circ}C$	140W 6W
T_{stg}	Operating and Storage Temperature Range	-65 to +200°C
T_j	Junction Temperature	200°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 DATA

$R_{thj-case}$	Thermal Resistance Junction - Case	Max	1.25	°C/W
----------------	------------------------------------	-----	------	------

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CER}^*$	Collector Emitter Breakdown Voltage $I_C = 200mA$ $I_B = 0$	120	-	-	V
$V_{(BR)CEX}$	Collector Emitter Breakdown Voltage $I_C = 200mA$ $V_{BE} = -1.5V$	150	-	-	
$V_{(BR)CER}$	Collector Emitter Breakdown Voltage $I_C = 200mA$ $R_{BE} = 50$	140	-	-	
I_{CEX}	Collector-Emitter Cut-Off Current $V_{CE} = 135V$ $V_{BE} = -1.5V$	-	-	10	mA
I_{CEO}	Collector-Emitter Cut-Off Current $V_{CE} = 80V$ $I_B = 0A$	-	-	10	
I_{EBO}	Emitter-Base Cut-Off Current $V_{EB} = 7.0V$ $I_C = 0$	-	-	10	
h_{FE}^*	DC Current Gain	$I_C = 20A$ $V_{CE} = 5.0V$	20	-	-
		$I_C = 15A$ $V_{CE} = 2.0V$	20	-	100
V_{BE}^*	Base Emitter Voltage $I_C = 15A$ $V_{CE} = 5.0V$	-	-	1.6	V
$V_{CE sat}^*$	Collector-Emitter Saturation Voltage $I_C = 15A$ $I_B = 1.2A$	-	-	0.75	
$V_{BE sat}^*$	Base-Emitter Saturation Voltage $I_C = 15A$ $I_B = 1.2A$	-	-	1.5	
f_T	Transition Frequency $I_C = 2A$ $V_{CE} = 10V$ $f = 5MHz$	50	-	-	MHz
C_{obo}	Collector Base Capacitance $I_E = 0$ $V_{CB} = 10V$ $f = 1.0MHz$	-	-	900	pF
T_{on}	Switching Time	-	-	0.5	μS
T_s	Switching Time $I_C = 15A$ $V_{CC} = 30V$ $I_{B1} = I_{B2} = 1.2A$	-	-	0.5	
T_{off}	Switching Time	-	-	1.5	

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

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.