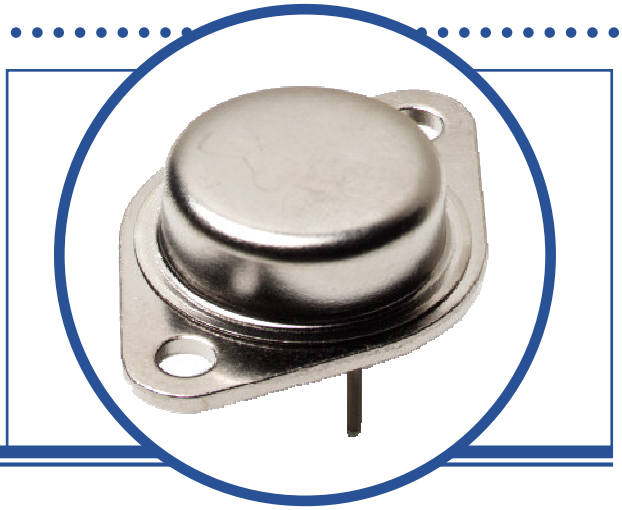
HIGH POWER NPN SILICON TRANSISTOR

TT electronics
Semelab Limited

STP5508

- Hermetic Metal TO3 Package.
- High Current
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage		140V
V_{CEO}	Collector – Emitter Voltage		120V
V_{EB}	Emitter – Base Voltage		6V
I_C	Continuous Collector Current		50A
I_{CM}	Peak Collector Current		100A
I_B	Base Current		20A
P_D	Total Power Dissipation at	T_C = 25°C	250W
		Derate Above 25°C	1.43W/°C
T_J	Junction Temperature Range		-65 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			0.7	°C/W

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}$ (1)	Collector-Emitter Breakdown Voltage	I_C = 10mA		120			V
I_{CEO}	Collector Cut-Off Current	V_{CE} = 60V	I_B = 0			50	µA
I_{CEX}	Collector Cut-Off Current	V_{CE} = 140V	$V_{BE(off)}$ = 1.5V			10	µA
			T_C = 150 °C			1.0	mA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 6V	I_C = 0			100	µA
$V_{CE(sat)}$ (1)	Collector-Emitter Saturation Voltage	I_C = 20A	I_B = 2.0A			1.0	V
		I_C = 50A	I_B = 10A			3	
$V_{BE(sat)}$ (1)	Base-Emitter Saturation Voltage	I_C = 20A	I_B = 2.0A			1.8	
		I_C = 50A	I_B = 10A			3.5	
$V_{BE(on)}$ (1)	Base-Emitter On Voltage	I_C = 20A	V_{CE} = 4V			1.8	
h_{FE} (1)	Forward-current transfer ratio	I_C = 1.0A	V_{CE} = 4V	50			-
		I_C = 20A	V_{CE} = 4V	50		120	
		I_C = 50A	V_{CE} = 4V	10			

DYNAMIC CHARACTERISTICS

$\|h_{fe}\|$	Magnitude of common emitter small-signal short-circuit forward current transfer ratio	I_C = 1.0A f = 10MHz	V_{CE} = 10V	1			-
C_{obo}	Output Capacitance	V_{CB} = 10V f = 1.0MHz	I_E = 0			600	pF
t_r	Rise Time	V_{CC} = 80V I_C = 20A I_{B1} = I_{B2} = 2A				0.35	µS
t_s	Storage Time					1.1	
t_f	Fall Time					0.25	

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

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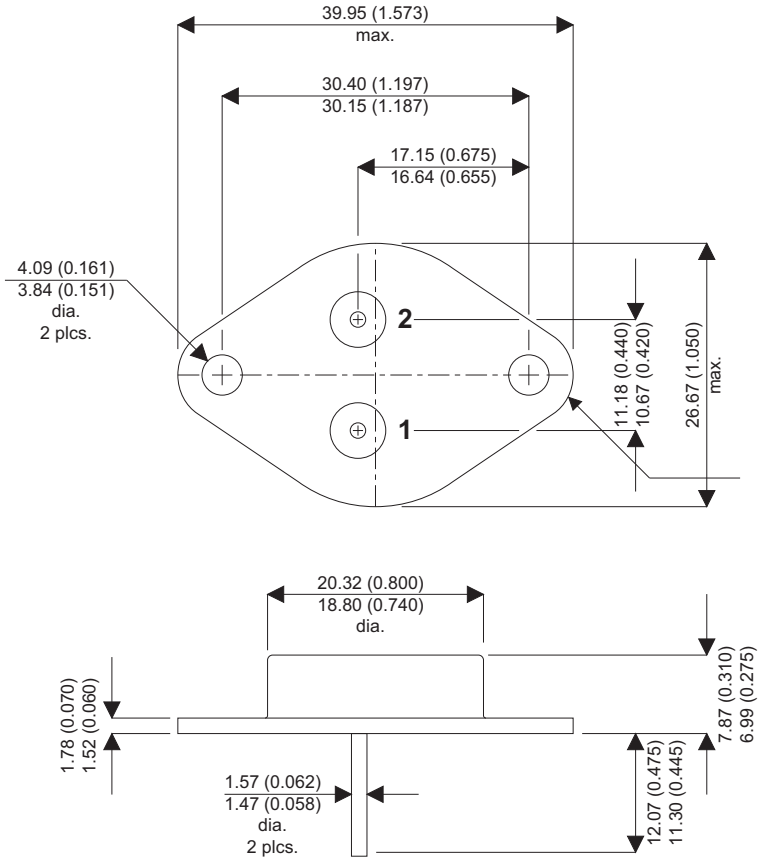
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AE)

Pin 1 - Base Pin 2 - Emitter Case - Collector