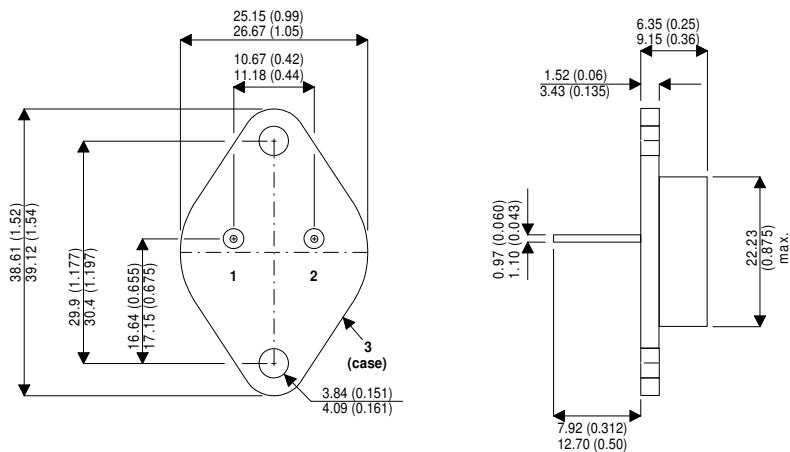


MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO204AA)

Pin 1 = Base

Pin 2 = Emitter

Case = Collector

HIGH CURRENT NPN SILICON TRANSISTOR

FEATURES

- HIGH SWITCHING CURRENTS
- HIGH RELIABILITY
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- JAN LEVEL SCREENING OPTIONS

APPLICATIONS

- SWITCHING REGULATORS
- LINEAR APPLICATIONS

ABSOLUTE MAXIMUM RATINGS

T_{CASE} = 25 °C unless otherwise stated

V_{CBO}	Collector - Base Voltage	300V
V_{CEO}	Collector - Emitter Voltage	180V
V_{EBO}	Emitter - Base Voltage	10V
I_C	Continuous Collector Current	6A
I_B	Base Current	3A
P_{tot}	Total Power Dissipation at $T_{case} = 25$ °C	50W
	Derate above 25 °C	0.29 W/°C
T_J	Junction Temperature	200 °C
T_{stg}	Storage Temperature	-65 to 200 °C

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THERMAL CHARACTERISTICS

		Max	Unit
$R_{th(j-case)}$	Thermal resistance to case	3.5	°C/W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 140\text{V}$	$I_B = 0$		1.0
I_{CES}	Collector Cut-Off Current	$V_{CE} = 180\text{V}$	$V_{BE} = 0$		1.0
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 10\text{V}$	$I_C = 0$		1.0
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage	$I_C = 50\text{mA}$	$I_B = 0$	180	V
$V_{(BR)CBO}^*$	Collector-Base Breakdown Voltage	$I_C = 3\text{mA}$		300	
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 2.0\text{A}$	$I_B = 0.25\text{A}$		
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = 2.0\text{A}$	$I_B = 0.25\text{A}$		
h_{FE}^*	Forward-current transfer ratio	$I_C = 1.0\text{A}$	$V_{CE} = 4.0\text{V}$	90	
		$I_C = 2.0\text{A}$	$V_{CE} = 4.0\text{V}$	75	
				82	180

DYNAMIC CHARACTERISTICS

C_{obo}	Output Capacitance	$I_E = 0$ $f = 1.0\text{MHz}$	$V_{CB} = 10\text{V}$		65	120	pF
F_T	Transition Frequency	$I_C = 0.5\text{A}$ $f = 10.0\text{MHz}$	$V_{CE} = 15\text{V}$	10			MHz
T_{on}	Turn-on time	$I_C = 5.0\text{A}$	$I_{B1} = 1.0\text{A}$			1.0	μs
T_{off}	Turn-off time	$I_C = 5.0\text{A}$	$I_{B1} = -I_{B2} = 1.0\text{A}$			6	

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

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