

SILICON NPN TRANSISTOR

BDY24/A/B/C

- High Power
- Hermetic TO-3 Metal Package
- Ideally suited for Switching and Amplifier Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage	100V
V_{CEO}	Collector – Emitter Voltage	90V
V_{EBO}	Emitter – Base Voltage	10V
I_C	Continuous Collector Current	6A
I_B	Base Current	3A
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above 25°C	80W 0.45W/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	2.2	$^\circ\text{C/W}$

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 90\text{V}$ $I_B = 0$			1.0	mA
I_{CES}	Collector Cut-Off Current	$V_{CE} = 100\text{V}$ $V_{BE} = 0$			1.0	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 10\text{V}$ $I_C = 0$			1.0	
$V_{(BR)CEO}^{(1)}$	Collector – Emitter Breakdown Voltage	$I_C = 50\text{mA}$ $I_B = 0$	90			V
$V_{(BR)CBO}^{(1)}$	Collector – Base Breakdown Voltage	$I_C = 3\text{mA}$ $I_E = 0$	100			
$h_{FE}^{(1)}$	Static Forward-Current Transfer Ratio	$V_{CE} = 4\text{V}$ A		55		-
		B		65		
		C		90		
		$V_{CE} = 4\text{V}$ A	15	20	45	
		B	30	40	90	
		C	75	82	100	
$V_{CE(sat)}^{(1)}$	Collector – Emitter Saturation Voltage	$I_C = 2\text{A}$ $I_B = 0.25\text{A}$			0.6	V
$V_{BE(sat)}^{(1)}$	Base – Emitter Saturation Voltage	$I_C = 2\text{A}$ $I_B = 0.25\text{A}$			1.2	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$V_{CE} = 15\text{V}$ $I_C = 0.5\text{A}$ $f = 10\text{MHz}$	10			MHz
t_{on}	Turn-On Time	$I_C = 5\text{A}$ $I_B = 1.0\text{A}$		0.15	0.5	μs
t_{off}	Turn-Off Time	$I_C = 5\text{A}$ $I_{B1} = 1.0\text{A}$ $I_{B2} = -1.0\text{A}$		1.2	2	

Notes

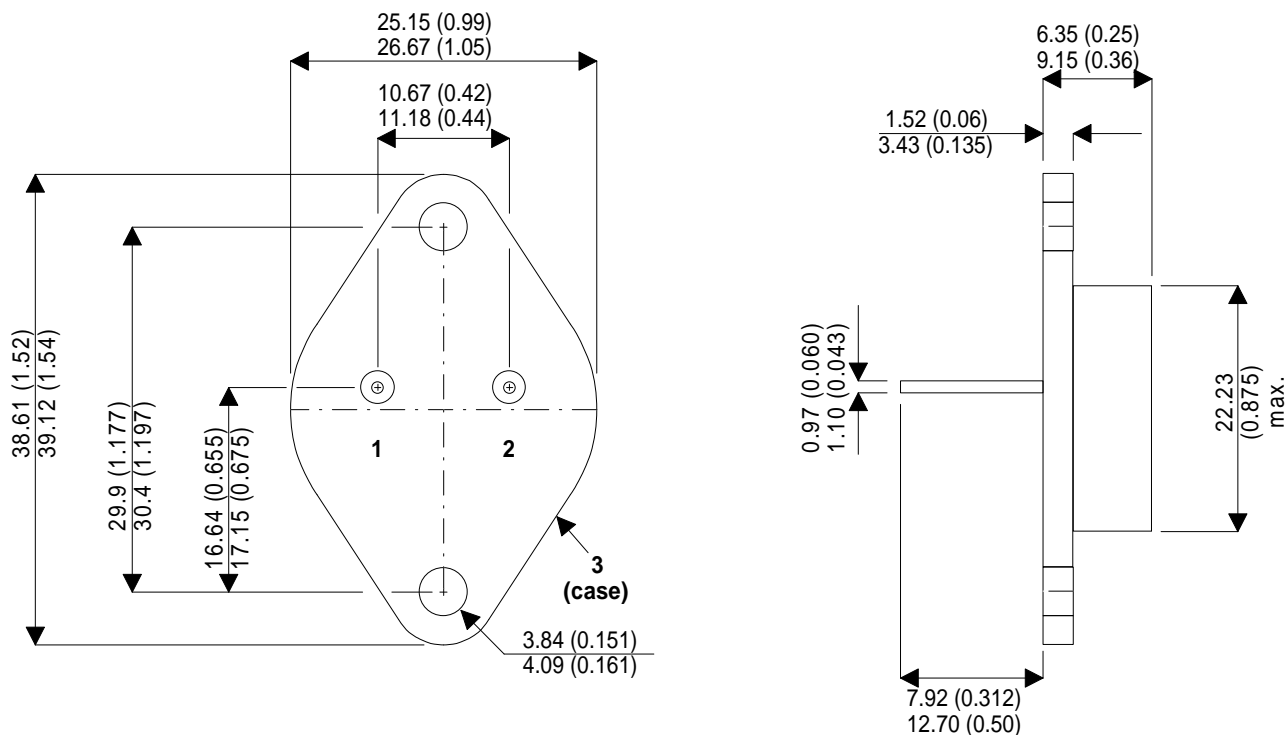
(1) Pulse Width $\leq 380\mu\text{s}$, $\delta \leq 2\%$

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MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE

Underside View

Pin 1 - Base

Pin 2 - Emitter

Case - Collector