

SILICON PLANAR EPITAXIAL NPN TRANSISTOR

BDY71X

- High Power
- Hermetic TO-66 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	90V
V_{CEO}	Collector – Emitter Voltage	55V
V_{CEX}	Collector – Emitter Voltage $V_{BE} = -1.5\text{V}$	90V
V_{CER}	Collector – Emitter Voltage $R_{BE} = 100\Omega$	60V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Continuous Collector Current	4A
I_B	Base Current	2A
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above 25°C	29W 0.17W/ $^\circ\text{C}$
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	6	$^\circ\text{C/W}$

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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	$V_{CE} = 30\text{V}$ $I_B = 0$			0.5	mA
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 90\text{V}$ $V_{BE} = -1.5\text{V}$			1.0	
		$V_{CE} = 30\text{V}$ $V_{BE} = -1.5\text{V}$ $t_{case} = 150^\circ\text{C}$			5.0	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 7\text{V}$ $I_C = 0$			1.0	
I_{CER}	Collector – Emitter Leakage Current	$V_{CE} = 60\text{V}$ $R_{BE} = 100\Omega$ $I_B = 0$			1.0	
V_{CEO}	Collector – Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	55			V
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 0.5\text{A}$ $V_{CE} = 4\text{V}$	80		250	
$V_{CE(sat)}^{(1)}$	Collector – Emitter Saturation Voltage	$I_C = 0.5\text{A}$ $I_B = 0.05\text{A}$			1.0	V
$V_{(BR)EB}$	Emitter – Base Breakdown Voltage	$I_E = 1.0\text{mA}$ $I_C = 0$	7.0			
$V_{BE}^{(1)}$	Base – Emitter Voltage	$V_{CE} = 4\text{V}$ $I_C = 0.5\text{A}$			1.7	

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = 0.2\text{A}$ $V_{CE} = 10\text{V}$ $f = 1.0\text{MHz}$	0.8			MHz
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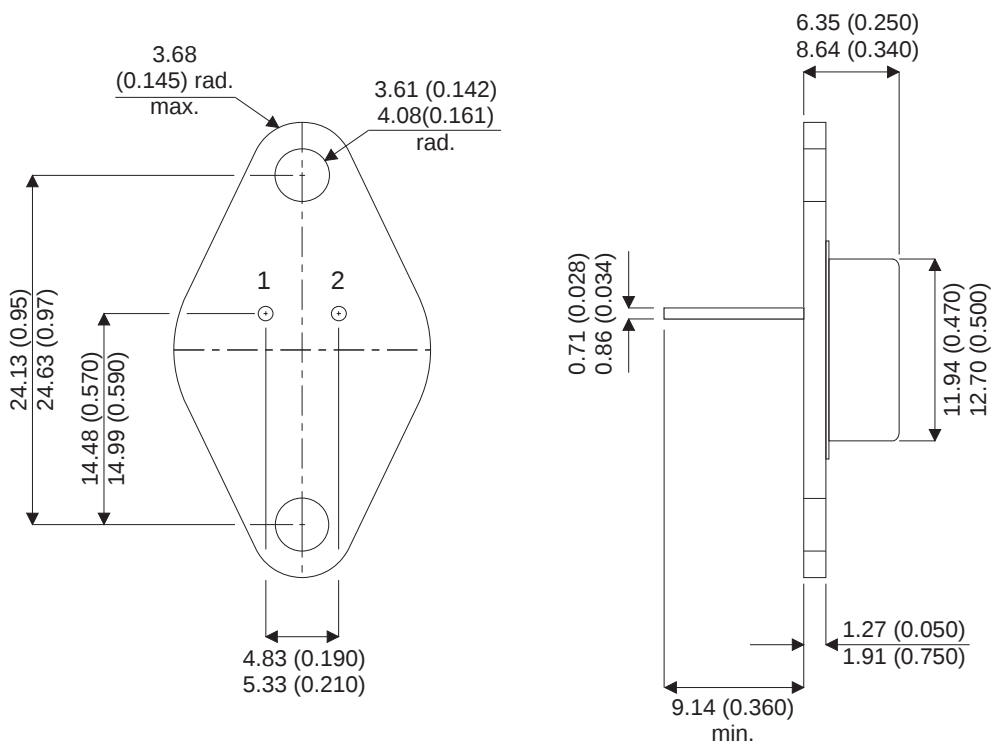
Notes

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

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MECHANICAL DATA

Dimensions in mm (inches)



TO66 (TO-213AA)

Pin 1 - Base

Pin 2 - Emitter

Case - Collector