

SILICON MULTI-EPITAXIAL NPN TRANSISTOR

BUX11

- High Current Capability.
- Hermetic TO3 Metal package.
- Designed For Switching and Linear Applications
- Screening Options Available



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

V_{CBO}	Collector – Base Voltage		250V
V_{CEX}	Collector – Emitter Voltage	$V_{BE} = -1.5V$	250V
V_{CEO}	Collector – Emitter Voltage		200V
V_{EBO}	Emitter – Base Voltage		7V
I_C	Continuous Collector Current		20A
I_{CM}	Peak Collector Current	$t_p = 10ms$	25A
I_B	Base Current		4A
P_D	Total Power Dissipation at	$T_C = 25^\circ\text{C}$	110W
		Derate Above 25°C	0.63W/ $^\circ\text{C}$
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	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			1.59	$^\circ\text{C/W}$

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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	$V_{CE} = 160\text{V}$ $I_B = 0$			1.5	mA
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 250\text{V}$ $V_{BE} = -1.5\text{V}$			1.5	
		$T_C = 125^\circ\text{C}$			6	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\text{V}$ $I_C = 0$			1.0	
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	200			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1.0\text{mA}$	7			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 6\text{A}$ $I_B = 0.6\text{A}$			0.6	
		$I_C = 12\text{A}$ $I_B = 1.5\text{A}$			1.5	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 12\text{A}$ $I_B = 1.5\text{A}$			1.5	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 6\text{A}$ $V_{CE} = 2\text{V}$	20		60	
		$I_C = 12\text{A}$ $V_{CE} = 4\text{V}$	10			

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 1.0\text{A}$ $V_{CE} = 15\text{V}$ $f = 10\text{MHz}$	8			MHz
t_{on}	Turn-On Time	$I_C = 12\text{A}$ $V_{CC} = 150\text{V}$ $I_{B1} = 1.5\text{A}$			1.0	μs
t_s	Storage Time	$I_C = 12\text{A}$ $V_{CC} = 150\text{V}$			1.8	
t_f	Fall Time	$I_{B1} = -I_{B2} = 1.5\text{A}$			0.4	

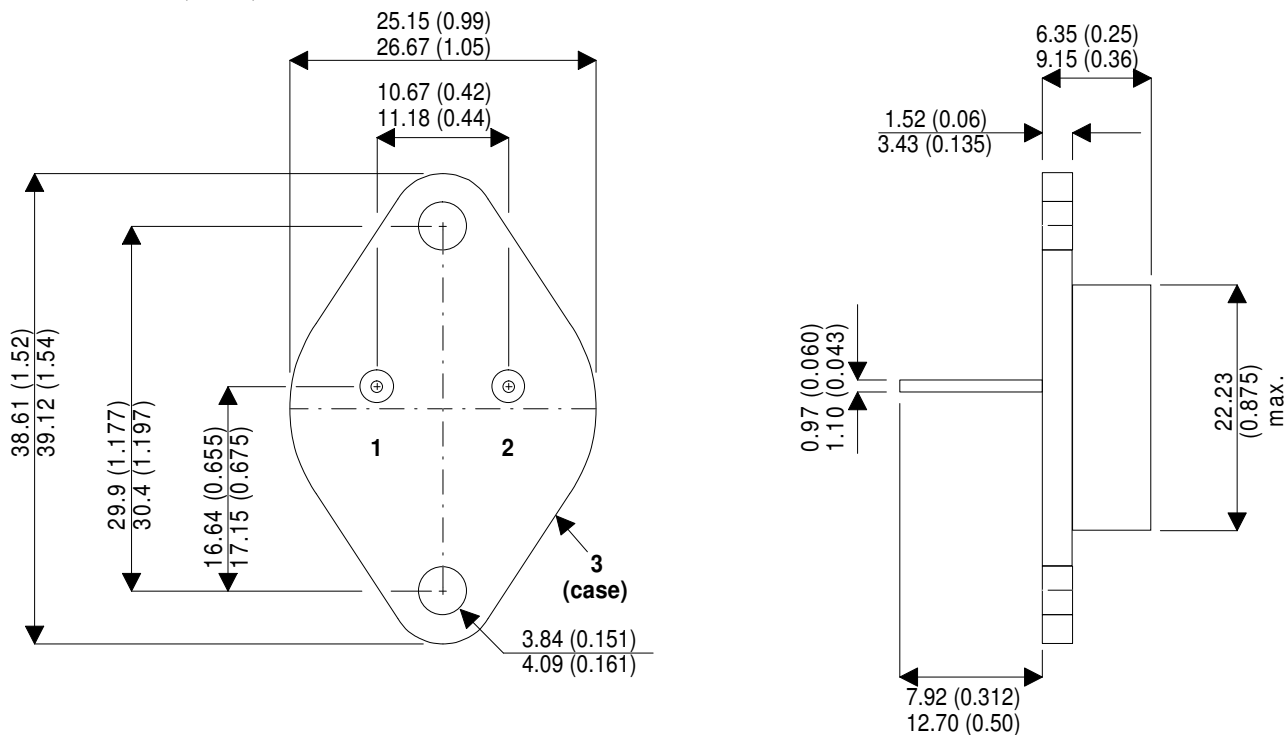
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

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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