

SILICON MULTI-EPITAXIAL NPN TRANSISTOR

BUP54

- Low $V_{CE(SAT)}$, Fast switching.
- Hermetic TO3 Metal package.
- Ideally suited for Motor Control, Switching and Linear Applications
- Screening Options Available



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

V_{CEX}	Collector – Emitter Voltage	$V_{BE} = -1.5\text{V}$	500V
V_{CEO}	Collector – Emitter Voltage		275V
V_{EBO}	Emitter – Base Voltage		10V
I_C	Continuous Collector Current		50A
I_{CM}	Peak Collector Current		70A
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$		300W
	Derate Above 25°C		1.72W/ $^\circ\text{C}$
T_J	Junction Temperature Range		-55 to $+200^\circ\text{C}$
T_{stg}	Storage Temperature Range		-55 to $+200^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			0.58	$^\circ\text{C/W}$

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 500V$ $V_{BE} = -1.5V$			0.1	mA
		$T_C = 150^\circ\text{C}$			5	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 8V$ $I_C = 0$			0.1	
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10mA$	275			V
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 20A$ $I_B = 2A$			0.6	
		$I_C = 40A$ $I_B = 5.5A$			1.0	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 20A$ $I_B = 2A$			1.2	
		$I_C = 40A$ $I_B = 4A$			1.3	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 16A$ $V_{CE} = 4V$	20			
		$I_C = 35A$ $V_{CE} = 4V$	10			

DYNAMIC CHARACTERISTICS

t_s	Storage Time	$I_C = 20A$ $V_{CC} = 200V$			1.8	μs
t_f	Fall Time	$I_{B1} = -I_{B2} = 10A$			0.35	

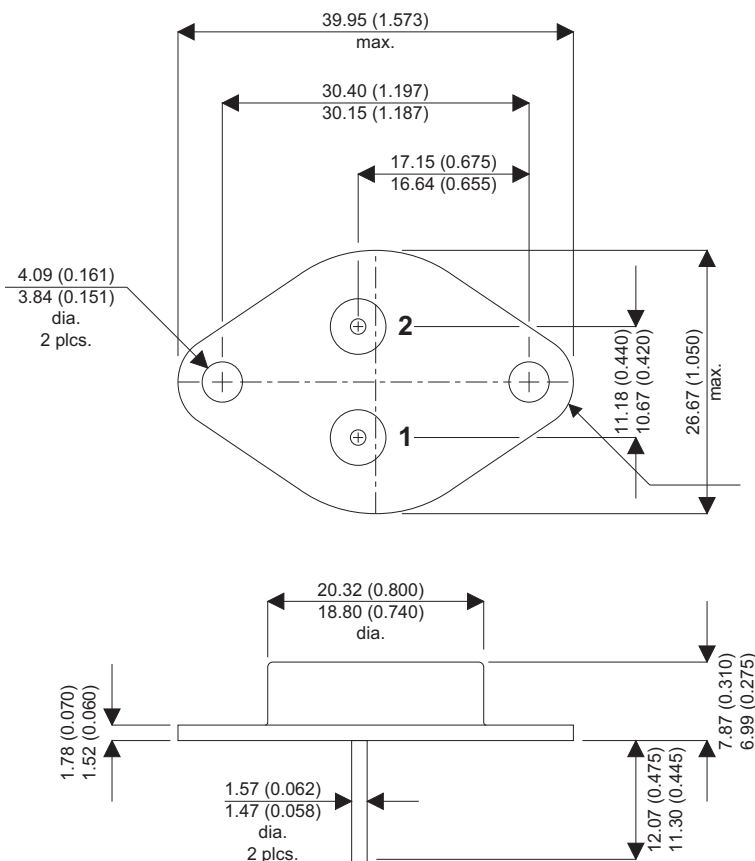
Notes

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

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MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AE)

Pin 1 - Base

Pin 2 - Emitter

Case - Collector