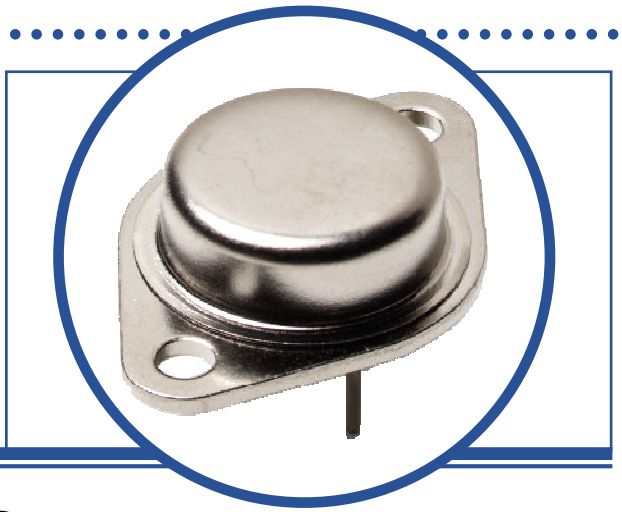
SILICON MULTI-EPITAXIAL NPN TRANSISTOR

TT electronics
Semelab Limited

BUP51



- 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°C unless otherwise stated)

V_{CEX}	Collector – Emitter Voltage	V_{BE} = -1.5V	250V
V_{CEO}	Collector – Emitter Voltage		175V
V_{EBO}	Emitter – Base Voltage		10V
I_C	Continuous Collector Current		80A
I_{CM}	Peak Collector Current		100A
P_D	Total Power Dissipation at	T_C = 25°C	300W
		Derate Above 25°C	1.72W/°C
T_J	Junction Temperature Range		-55 to +200°C
T_{stg}	Storage Temperature Range		-55 to +200°C

THERMAL PROPERTIES

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

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
I_{CEX}	Collector Cut-Off Current	V_{CE} = 250V	V_{BE} = -1.5V			0.1	mA
			T_C = 150°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		175			V
$V_{CE(sat)}$ (1)	Collector-Emitter Saturation Voltage	I_C = 20A	I_B = 2A			0.5	
		I_C = 40A	I_B = 4A			0.6	
		I_C = 70A	I_B = 14A			1.0	
$V_{BE(sat)}$ (1)	Base-Emitter Saturation Voltage	I_C = 20A	I_B = 2A			1.1	
		I_C = 40A	I_B = 4A			1.2	
		I_C = 70A	I_B = 14A			1.5	
h_{FE} (1)	Forward-current transfer ratio	I_C = 20A	V_{CE} = 4V	20			
		I_C = 40A	V_{CE} = 4V	20			
		I_C = 70A	V_{CE} = 4V	10			

DYNAMIC CHARACTERISTICS

t_s	Storage Time	I_C = 50A	V_{CC} = 200V			1.0	µs
t_f	Fall Time	I_{B1} = -I_{B2} = 10A				0.3	

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

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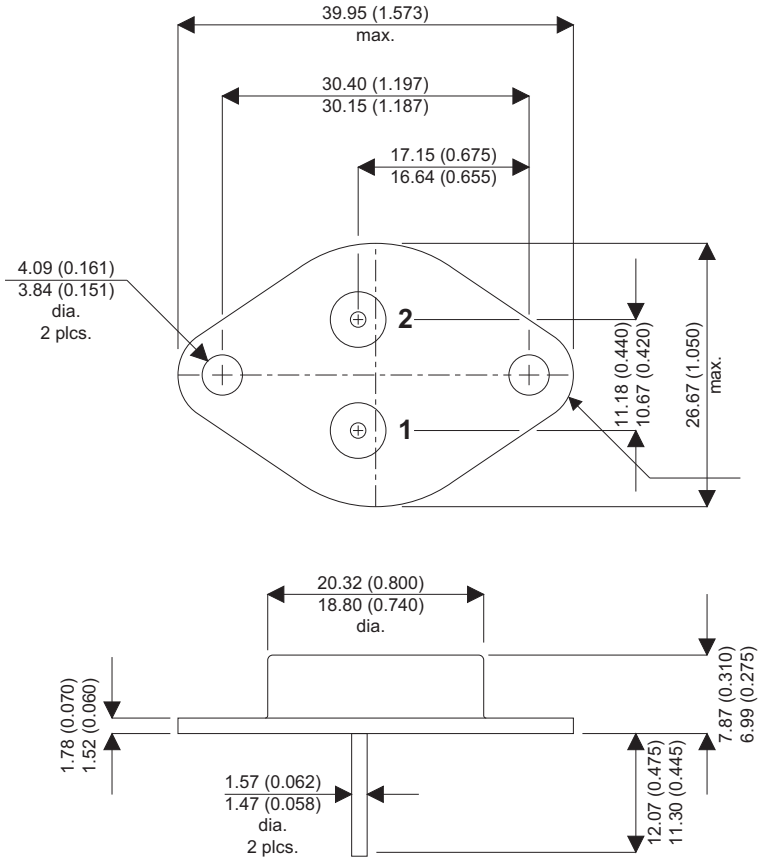
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AE)

Pin 1 - Base Pin 2 - Emitter Case - Collector

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