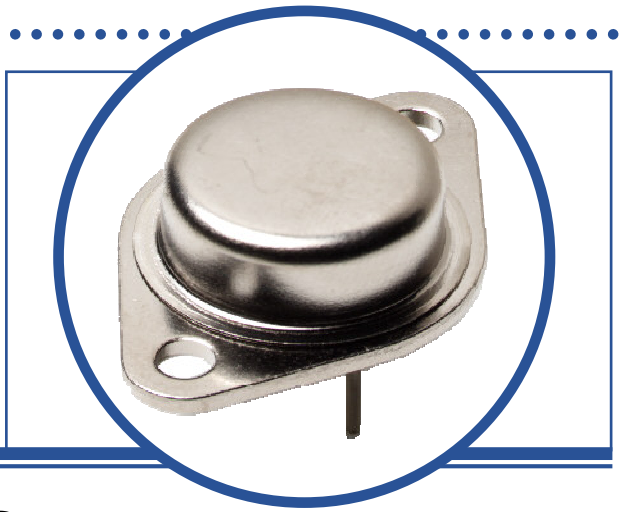
SILICON MULTI-EPITAXIAL NPN TRANSISTOR

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

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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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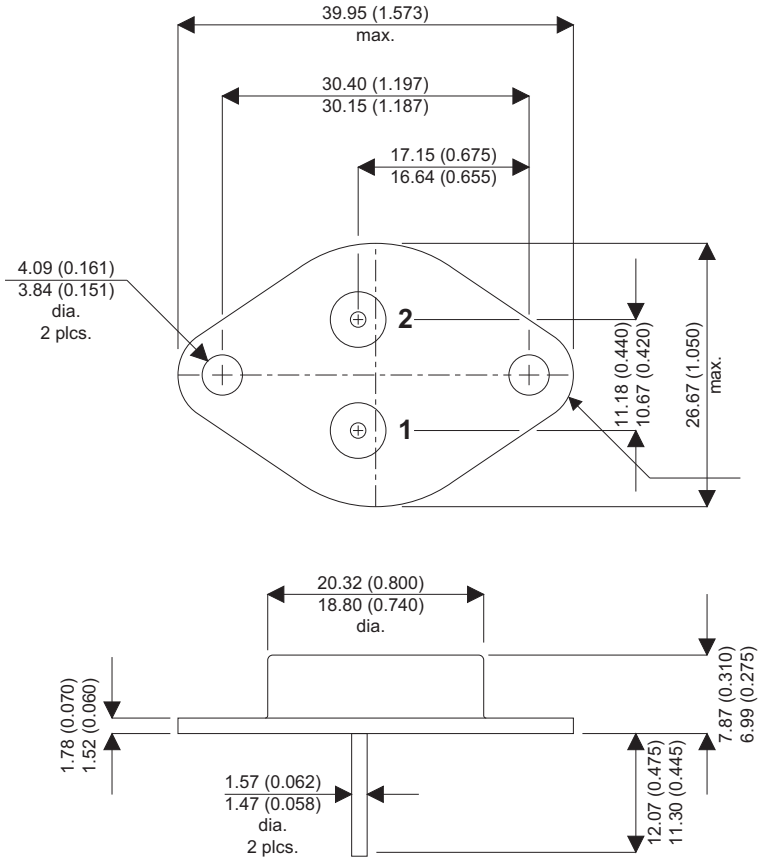
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AE)

Pin 1 - Base Pin 2 - Emitter Case - Collector