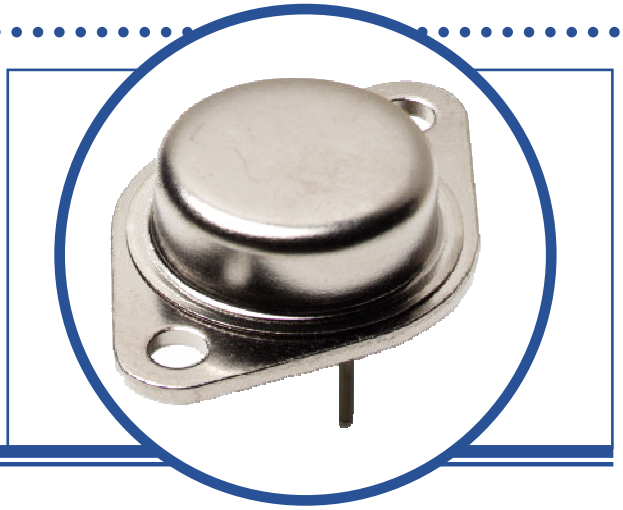
FAST SWITCHING NPN POWER TRANSISTOR

TT electronics
Semelab Limited

BUV62

- Fast Switching Times
- Low Switching Losses
- Low Saturation Voltage
- Hermetic TO3 Metal package.
- Ideally suited for Motor Control, Switching and Linear Applications
- High Reliability Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{CEV}	Collector – Emitter Voltage	V_{BE} = -1.5V	350V
V_{CEO}	Collector – Emitter Voltage		250V
V_{EBO}	Emitter – Base Voltage		7V
I_C	Continuous Collector Current		40A
I_{CM}	Peak Collector Current		60A
I_B	Base Current		7A
I_{BM}	Base Peak Current		12A
P_D	Total Power Dissipation at	T_C = 25°C	250W
		Derate Above 25°C	1.43W/°C
T_J	Junction Temperature Range		-55 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			0.7	°C/W

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

Symbols	Parameters	Test Conditions		Min.	Typ.	Max.	Units
$V_{(BR)CEO}$[1]	Collector-Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	250			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 50mA	I_C = 0	7			
I_{CEX}	Collector Cut-Off Current	V_{CE} = 350V	V_{BE} = -1.5V			1.0	mA
			T_C = 100°C			4.0	
I_{CER}	Collector Cut-Off Current	V_{CE} = 350V	R_{BE} = 10Ω			1.0	
			T_C = 100°C			5.0	
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 5V	I_C = 0			1.0	
$V_{CE(sat)}$[1]	Collector-Emitter Saturation Voltage	I_C = 8A	I_B = 0.53A			0.9	V
			T_C = 100°C			1.2	
		I_C = 16A	I_B = 1.6A			0.9	
			T_C = 100°C			1.5	
		I_C = 24A	I_B = 3A			1.2	
			T_C = 100°C			1.9	
$V_{BE(sat)}$[1]	Base-Emitter Saturation Voltage	I_C = 16A	I_B = 1.6A			1.3	
			T_C = 100°C			1.3	
		I_C = 24A	I_B = 3A			1.5	
			T_C = 100°C			1.5	

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

SWITCHING CHARACTERISTICS

Symbols	Parameters	Test Conditions		Min.	Typ.	Max.	Units
Switching Times On Resistive Load							
t_r	Rise Time	V_{CC} = 200V	I_C = 24A			0.6	µs
t_s	Storage Time	V_{BB} = -5V	I_{B1} = 3A			1.8	
t_f	Fall Time	R_{B2} = 0.83Ω	T_p = 30µs			0.35	
Turn-On Switching Characteristics							
di_C/dt	Rated Rise of On state Collector Current	V_{CC} = 200V	I_{B1} = 2.4A		130		A/µs
		R_C = 0	T_C = 100°C		120		
V_{CE}(2µs)	Collector-Emitter Dynamic Voltage	V_{CC} = 200V	I_{B1} = 1.6A		1.8		V
		R_C = 13Ω	T_C = 100°C		2.8		
V_{CE}(4µs)	Collector-Emitter Dynamic Voltage	V_{CC} = 200V	I_{B1} = 1.6A		1.1		
		R_C = 13Ω	T_C = 100°C		1.5		
Switching Times On Inductive Load							
t_s	Storage Time	V_{CC} = 200V I_C = 16A V_{BB} = -5V L_C = 0.63mH	V_{clamp} = 250V I_B = 1.6A R_{B2} = 1.6Ω		1.2		µs
t_f	Fall Time				0.08		
t_t	Tail Time in Turn-on				0.03		
t_c	Crossover Time				0.15		
t_s	Storage Time	V_{CC} = 200V I_C = 16A V_{BB} = -5V L_C = 0.63mH	V_{clamp} = 250V I_B = 1.6A R_{B2} = 3.3Ω T_C = 100°C		1.8		
t_f	Fall Time				0.2		
t_t	Tail Time in Turn-on				0.08		
t_c	Crossover Time				0.3		
t_s	Storage Time	V_{CC} = 200V I_C = 16A V_{BB} = 0 L_C = 0.63mH	V_{clamp} = 250V I_B = 1.6A R_{B2} = 3.3Ω		3.0		
t_f	Fall Time				0.6		
t_t	Tail Time in Turn-on				0.2		
t_s	Storage Time	V_{CC} = 200V I_C = 16A V_{BB} = 0 L_C = 0.63mH	V_{clamp} = 250V I_B = 1.6A R_{B2} = 3.3Ω T_C = 100°C		5.0		
t_f	Fall Time				1.0		
t_t	Tail Time in Turn-on				0.45		

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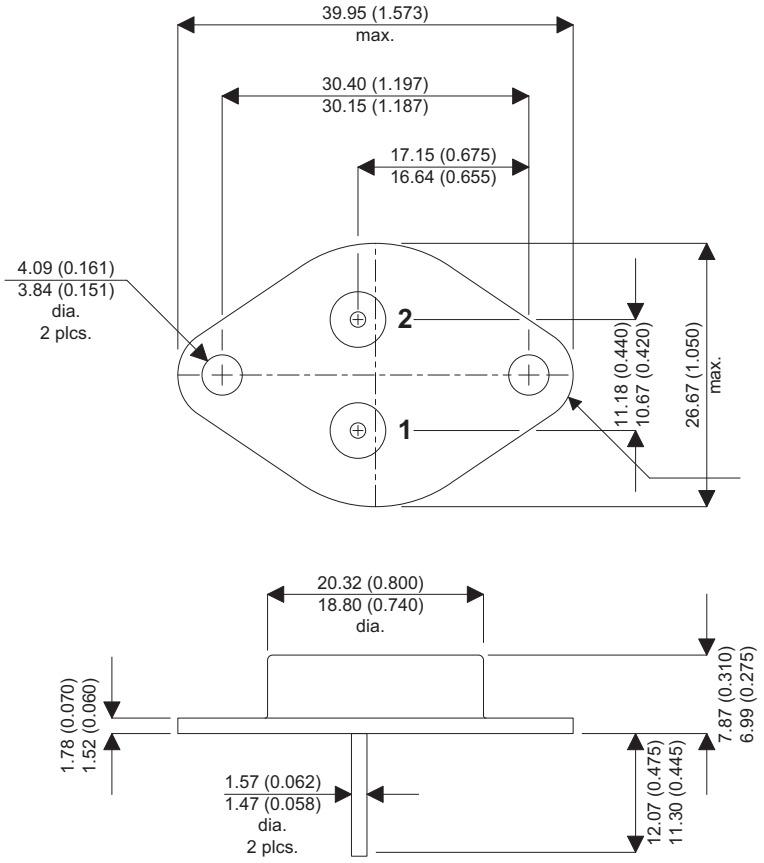
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AE)

Pin 1 - Base Pin 2 - Emitter Case - Collector

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