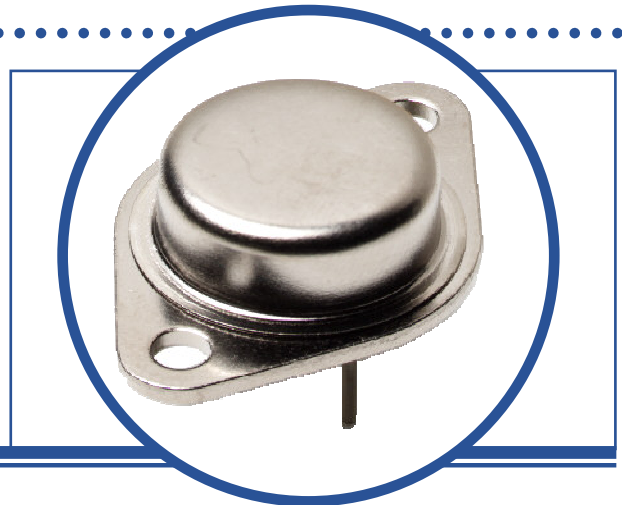


# FAST SWITCHING NPN POWER TRANSISTOR

## 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 ( $T_C = 25^\circ\text{C}$ 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	$T_C = 25^\circ\text{C}$	250W
		Derate Above $25^\circ\text{C}$	1.43W/ $^\circ\text{C}$
$T_J$	Junction Temperature Range		-55 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			0.7	$^\circ\text{C/W}$

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# FAST SWITCHING NPN POWER TRANSISTOR BUV62

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

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

### Notes

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

# FAST SWITCHING NPN POWER TRANSISTOR BUV62

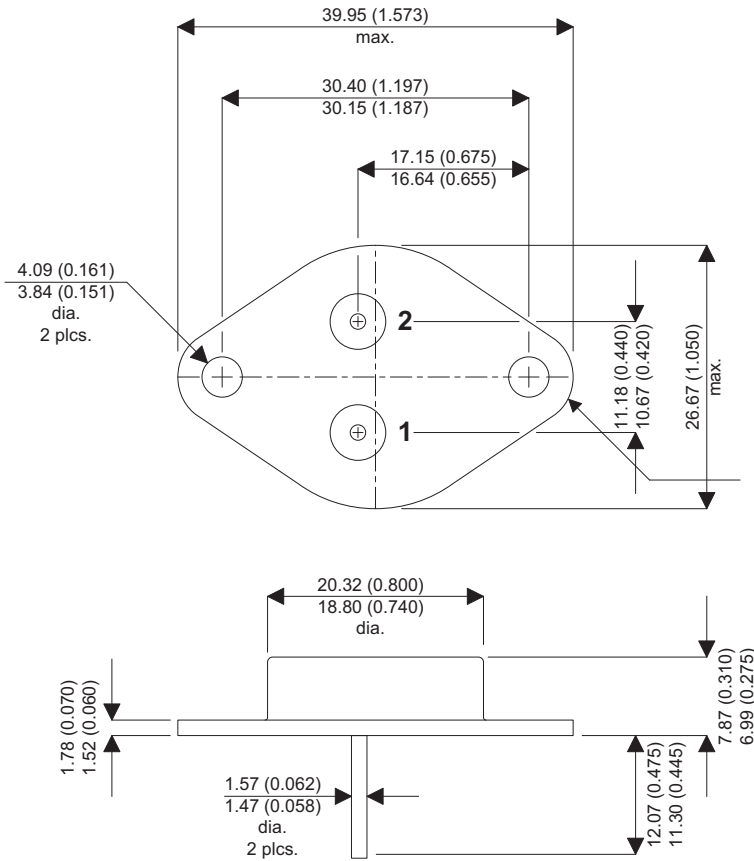
## SWITCHING CHARACTERISTICS

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	$\mu s$
$t_s$	Storage Time	$V_{BB} = -5V$	$I_{B1} = 3A$			1.8	
$t_f$	Fall Time	$R_{B2} = 0.83\Omega$	$T_p = 30\mu s$			0.35	
Turn-On Switching Characteristics							
$dI_C/dt$	Rated Rise of On state Collector Current	$V_{CC} = 200V$ $R_C = 0$	$I_{B1} = 2.4A$ $T_C = 100^\circ C$		130		$A/\mu s$
$V_{CE(2\mu s)}$	Collector-Emitter Dynamic Voltage	$V_{CC} = 200V$ $R_C = 13\Omega$	$I_{B1} = 1.6A$ $T_C = 100^\circ C$		1.8		V
$V_{CE(4\mu s)}$	Collector-Emitter Dynamic Voltage	$V_{CC} = 200V$ $R_C = 13\Omega$	$I_{B1} = 1.6A$ $T_C = 100^\circ C$		1.1		
Switching Times On Inductive Load							
$t_s$	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		1.2		$\mu s$
$t_f$	Fall Time	$I_C = 16A$	$I_B = 1.6A$		0.08		
$t_t$	Tail Time in Turn-on	$V_{BB} = -5V$	$R_{B2} = 1.6\Omega$		0.03		
$t_c$	Crossover Time	$L_C = 0.63mH$			0.15		
$t_s$	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		1.8		
$t_f$	Fall Time	$I_C = 16A$	$I_B = 1.6A$		0.2		
$t_t$	Tail Time in Turn-on	$V_{BB} = -5V$	$R_{B2} = 3.3\Omega$		0.08		
$t_c$	Crossover Time	$L_C = 0.63mH$	$T_C = 100^\circ C$		0.3		
$t_s$	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		3.0		
$t_f$	Fall Time	$I_C = 16A$	$I_B = 1.6A$		0.6		
$t_t$	Tail Time in Turn-on	$V_{BB} = 0$	$R_{B2} = 3.3\Omega$		0.2		
$t_s$	Storage Time	$V_{CC} = 200V$	$V_{clamp} = 250V$		5.0		
$t_f$	Fall Time	$I_C = 16A$	$I_B = 1.6A$		1.0		
$t_t$	Tail Time in Turn-on	$V_{BB} = 0$	$R_{B2} = 3.3\Omega$		0.45		
		$L_C = 0.63mH$	$T_C = 100^\circ C$				

# FAST SWITCHING NPN POWER TRANSISTOR BUV62

## MECHANICAL DATA

Dimensions in mm (inches)



### TO3 (TO-204AE)

Pin 1 - Base

Pin 2 - Emitter

Case - Collector