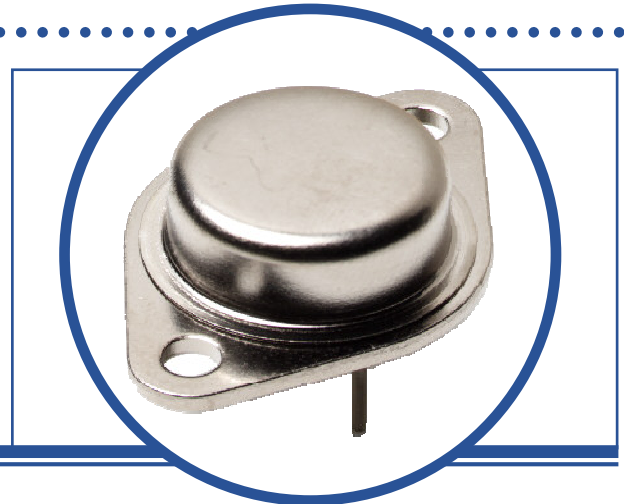


# SILICON MULTI-EPITAXIAL NPN TRANSISTOR

## 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 $25^\circ\text{C}$	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	$^\circ\text{C/W}$

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.

# SILICON MULTI-EPITAXIAL NPN TRANSISTOR BUP54

## 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	$\mu\text{s}$
$t_f$	Fall Time	$I_{B1} = -I_{B2} = 10A$			0.35	

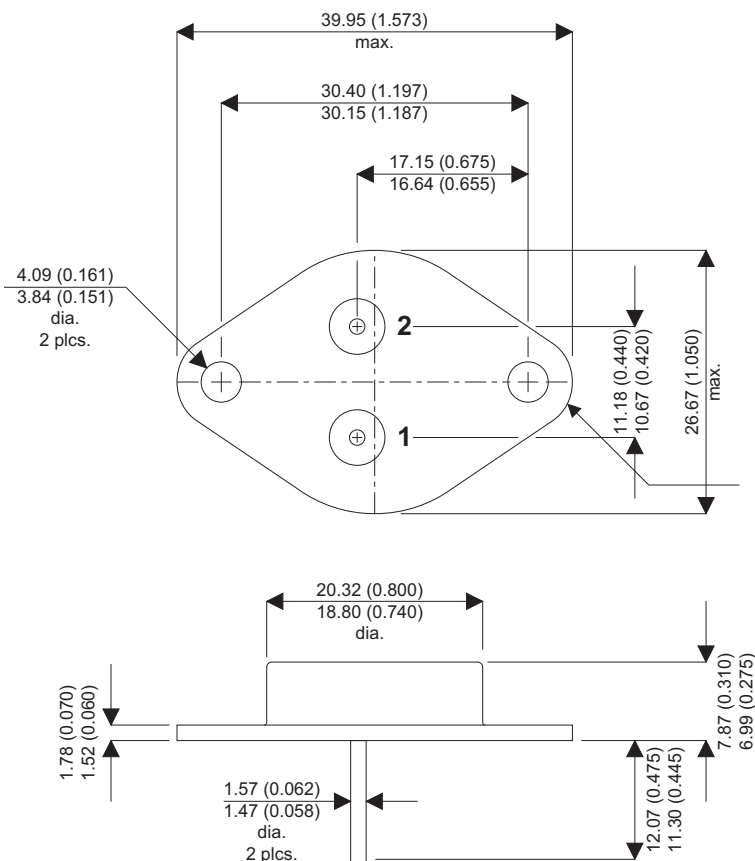
### Notes

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

# SILICON MULTI-EPITAXIAL NPN TRANSISTOR BUP54

## MECHANICAL DATA

Dimensions in mm (inches)



## TO3 (TO-204AE)

Pin 1 - Base

Pin 2 - Emitter

Case - Collector