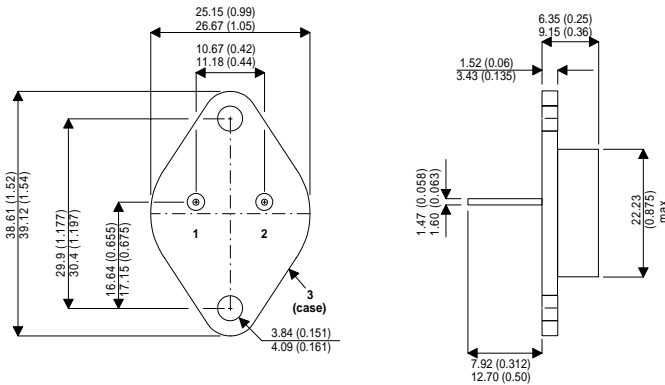


**MECHANICAL DATA**  
Dimensions in mm

**NPN HIGH CURRENT SWITCHING TRANSISTORS**

Designed for high energy applications requiring robust fast switching devices



**TO-3 (TO-204AE)**

Pin 1 – Gate      Pin 2 – Drain      Case – Source

**FEATURES**

- Fast Switching
- Low VCE(SAT)
- High Switching Currents
- High Reliability
- Military Options Available

**APPLICATIONS**

- High Efficiency Converters
- Motor Drive Control
- Switching Regulator

**ABSOLUTE MAXIMUM RATINGS**

(T<sub>case</sub> = 25°C unless otherwise stated)

		<b>BUV18</b>	<b>BUV19</b>
V <sub>CBO</sub>	Collector-Emitter Voltage (I <sub>E</sub> =0)	120V	160V
V <sub>CEO</sub>	Collector-Emitter voltage (I <sub>B</sub> =0)	60V	80V
V <sub>EBO</sub>	Emitter- Base Voltage (I <sub>C</sub> =0)	7V	7V
I <sub>C</sub>	Collector Current	50A	50A
I <sub>C(PK)</sub>	Peak Collector Current	90A	70A
I <sub>B</sub>	Base Current	16A	12A
I <sub>B(PK)</sub>	Peak Base Current	40A	30A
P <sub>TOT</sub>	Total Dissipation @ T <sub>case</sub> = 25°C	250W	
T <sub>stg</sub>	Storage Temperature Range	-65 to 200°C	
T <sub>j</sub>	Maximum Operating Junction Temperature	200°C	
R <sub>θJC</sub>	Thermal Resistance Junction – Case	Max 0.7°C/W	

Semelab Plc 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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Issue 1

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$ * Collector – Emitter Sustaining Voltage	$I_B = 0$ $I_C = 0.2A$ <b>BUV18</b> $L = 25mH$	60			V
	$I_B = 0$ $I_C = 0.2A$ <b>BUV19</b> $L = 25mH$	80			
$V_{CE(sat)}$ * Collector – Emitter Saturation Voltage	$I_C = 40A$ $I_B = 4A$ <b>BUV18</b>			0.6	V
	$I_C = 80A$ $I_B = 8A$			1.5	
	$I_C = 30A$ $I_B = 3A$ <b>BUV19</b>			0.6	
	$I_C = 60A$ $I_B = 6A$			1.2	
$V_{BE(sat)}$ * Base – Emitter Saturation Voltage	$I_C = 80A$ $I_B = 8A$ <b>BUV18</b>			2.2	V
	$I_C = 60A$ $I_B = 6A$ <b>BUV19</b>			2.0	
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_C = 0A$ $I_E = 50mA$	7			V
$I_{CEX}$ Collector Cut-Off Current	$V_{BE} = -1.5V$ $V_{CE} = V_{CEX}$ $T_{case} = 100^{\circ}C$			1.0	mA
				3.0	
$I_{EBO}$ Emitter Cut-Off Current	$I_C = 0A$ $V_{EB} = 5V$			1.0	
<b>SWITCHING CHARACTERISTICS</b>					
$f_T$ Transition Frequency	$f = 10MHz$ $V_{CE} = 15V$ $I_C = 2A$	8			MHz
$t_{on}$ Turn-On Time	$V_{CC} = 60V$ <b>BUV18</b>		1.2	1.5	$\mu s$
$t_r$ Fall Time	$I_C = 80A$		0.18	0.25	
$t_s$ Storage Time	$I_{B1} = -I_{B2} = 8A$		0.6	1.1	
$t_{on}$ Turn-On Time	$V_{CC} = 80V$ <b>BUV19</b>		0.9	1.3	
$t_r$ Fall Time	$I_C = 60A$		0.17	0.25	
$t_s$ Storage Time	$I_{B1} = -I_{B2} = 6A$		0.6	1.1	

**NOTES**

\* Pulse Test:  $t_p = 300\mu s$ ,  $\delta \leq 2\%$