

## HIGH POWER NPN SILICON TRANSISTOR

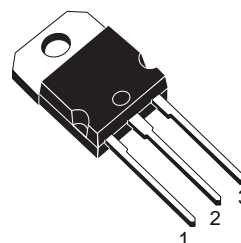
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

### APPLICATIONS

- HIGH FREQUENCY AND EFFICIENCY CONVERTERS
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

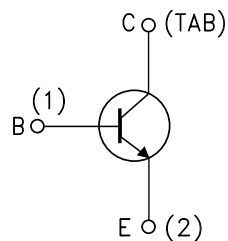
### DESCRIPTION

The BUX98AP is a silicon multiepitaxial mesa NPN transistor in jedec TO-218 plastic package, intended for use in industrial applications from single and three-phase mains operation.



**TO-218 (SOT-93)**

### INTERNAL SCHEMATIC DIAGRAM



SC08820

### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} \leq 10 \Omega$ )	1000	V
$V_{CES}$	Collector-Base Voltage ( $V_{BE} = 0$ )	1000	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	450	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	24	A
$I_{CM}$	Collector Peak Current ( $t_p < 5$ ms)	36	A
$I_B$	Base Current	5	A
$I_{BM}$	Base Peak Current ( $t_p < 5$ ms)	8	A
$P_{tot}$	Total Power Dissipation at $T_{case} < 25^\circ C$	200	W
$T_{stg}$	Storage Temperature	-65 to 150	$^\circ C$
$T_j$	Max Operating Junction Temperature	150	$^\circ C$

**THERMAL DATA**

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	0.63	°C/W
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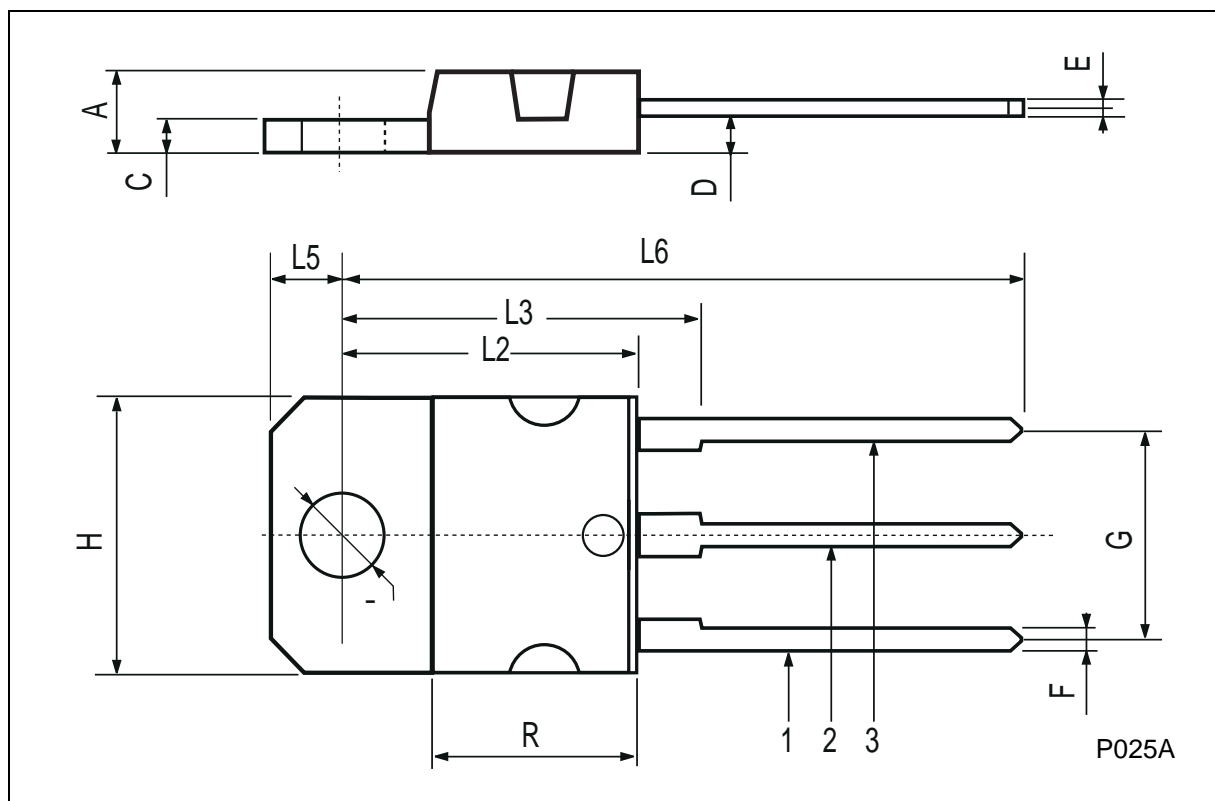
**ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CER</sub>	Collector Cut-off Current (R <sub>BE</sub> = 10 Ω)	V <sub>CE</sub> = V <sub>CES</sub> V <sub>CE</sub> = V <sub>CES</sub> T <sub>CASE</sub> = 125 °C			1 8	μA mA
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0 )	V <sub>CE</sub> = V <sub>CES</sub> V <sub>CE</sub> = V <sub>CES</sub> T <sub>CASE</sub> = 125 °C			400 4	μA mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = V <sub>CEO</sub>			2	mA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5 V			2	mA
V <sub>CEO(sus)*</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 200 mA	450			V
V <sub>CER(sus)*</sub>	Collector-Emitter Sustaining Voltage	L = 2mH I <sub>C</sub> = 1 A	1000			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 16 A I <sub>B</sub> = 3.2 A			1.2	V
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 16 A I <sub>B</sub> = 3.2 A			1.5	V
t <sub>on</sub>	Turn-on Time	V <sub>CC</sub> = 150 V I <sub>C</sub> = 20 A			1	μs
t <sub>s</sub>	Storage Time	I <sub>B1</sub> = - I <sub>B2</sub> = 4 A			3	μs
t <sub>f</sub>	Fall Time				0.8	μs
t <sub>on</sub>	Turn-on Time	V <sub>CC</sub> = 150 V I <sub>C</sub> = 16 A			1	μs
t <sub>s</sub>	Storage Time	I <sub>B1</sub> = - I <sub>B2</sub> = 3.2 A			3	μs
t <sub>f</sub>	Fall Time				0.8	μs

\* Pulsed: Pulse duration = 300 μs, duty cycle = 1.5 %

## TO-218 (SOT-93) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.7		4.9	0.185		0.193
C	1.17		1.37	0.046		0.054
D		2.5			0.098	
E	0.5		0.78	0.019		0.030
F	1.1		1.3	0.043		0.051
G	10.8		11.1	0.425		0.437
H	14.7		15.2	0.578		0.598
L2	–		16.2	–		0.637
L3		18			0.708	
L5	3.95		4.15	0.155		0.163
L6		31			1.220	
R	–		12.2	–		0.480
Ø	4		4.1	0.157		0.161



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