

HIGH POWER NPN SILICON TRANSISTOR

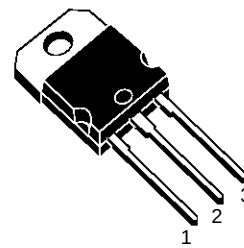
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

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

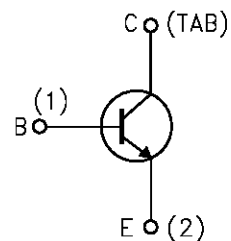
DESCRIPTION

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



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 $T_{case} < 25^\circ\text{C}$	200	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max Operating Junction Temperature	150	$^\circ\text{C}$

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	0.63	°C/W
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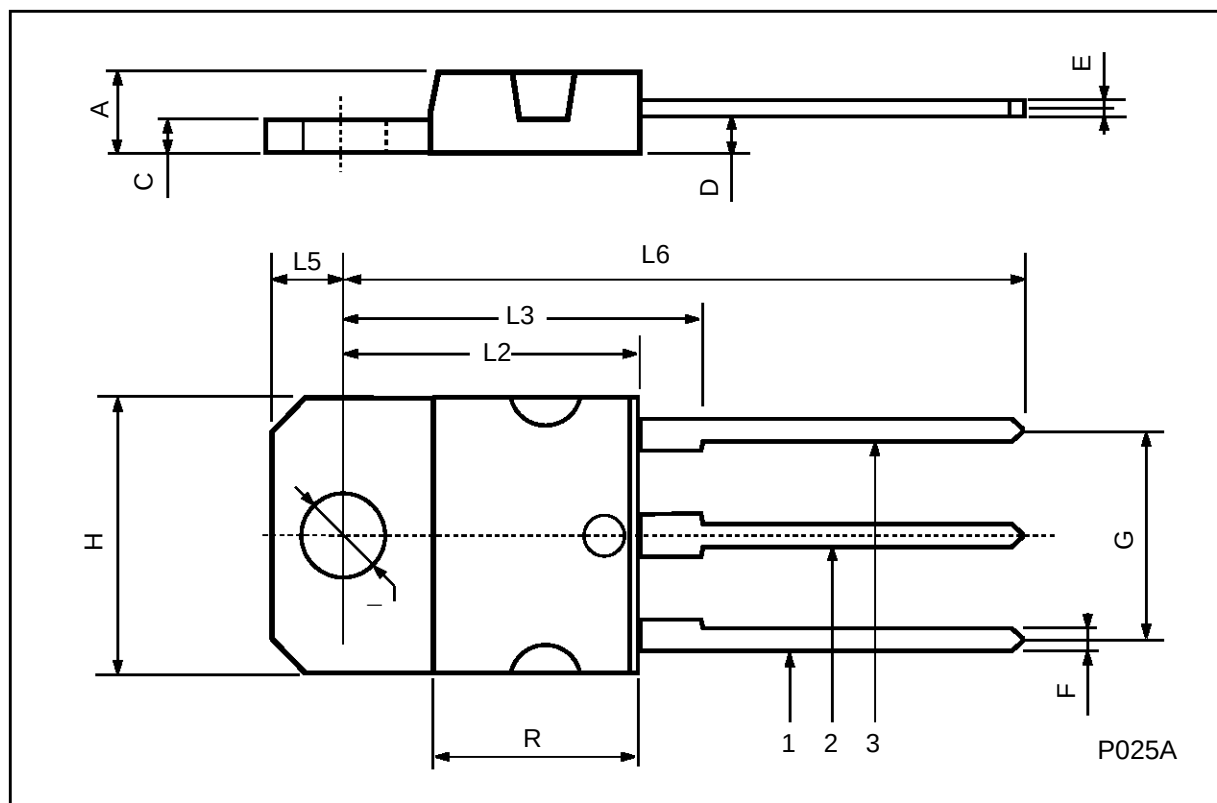
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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