

HIGH POWER NPN SILICON TRANSISTOR

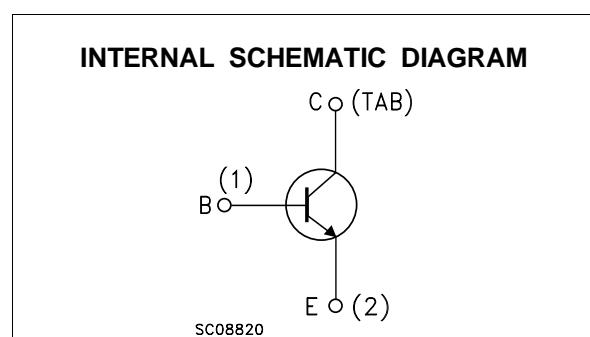
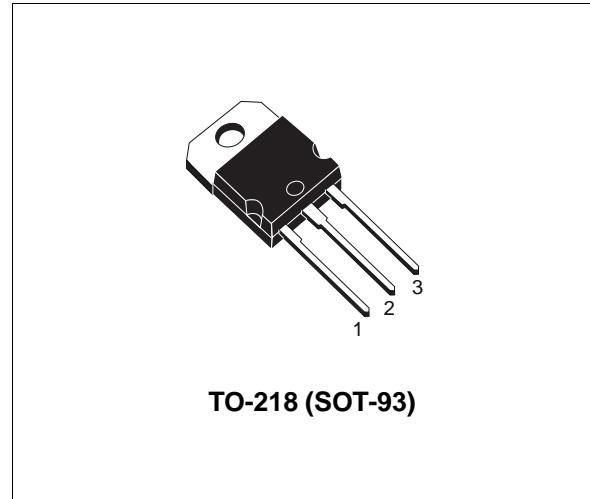
- SGS-THOMSON PREFERRED SALES TYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

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.



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 ($t_p < 5 \text{ ms}$)	36	A
I_B	Base Current	5	A
I_{BM}	Base Peak Current ($t_p < 5 \text{ ms}$)	8	A
P_{tot}	Total Power Dissipation at $T_{case} < 25^\circ\text{C}$	200	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max Operating Junction Temperature	150	°C

BUX98AP

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.63	$^{\circ}\text{C/W}$
----------------	----------------------------------	-----	------	----------------------

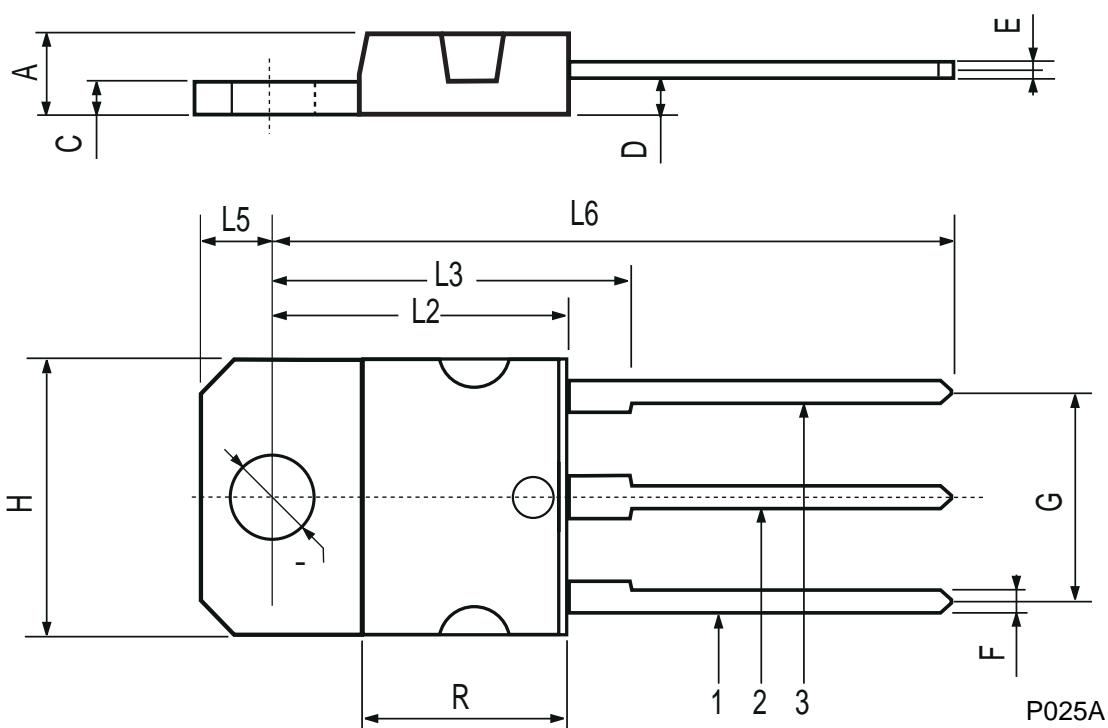
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CER}	Collector Cut-off Current ($R_{BE} = 10 \Omega$)	$V_{CE} = V_{CES}$ $V_{CE} = V_{CES}$ $T_{CASE} = 125^{\circ}\text{C}$			1 8	μA mA
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = V_{CES}$ $V_{CE} = V_{CES}$ $T_{CASE} = 125^{\circ}\text{C}$			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 ($I_C = 0$)	$V_{EB} = 5 \text{ V}$			2	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 200 \text{ mA}$	450			V
$V_{CER(sus)*}$	Collector-Emitter Sustaining Voltage	$L = 2\text{mH}$ $I_C = 1 \text{ A}$	1000			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 16 \text{ A}$ $I_B = 3.2 \text{ A}$			1.2	V
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 16 \text{ A}$ $I_B = 3.2 \text{ A}$			1.5	V
t_{on}	Turn-on Time	$V_{CC} = 150 \text{ V}$ $I_C = 20 \text{ A}$ $I_{B1} = -I_{B2} = 4 \text{ A}$			1	μs
t_s	Storage Time				3	μs
t_f	Fall Time				0.8	μs
t_{on}	Turn-on Time	$V_{CC} = 150 \text{ V}$ $I_C = 16 \text{ A}$ $I_{B1} = -I_{B2} = 3.2 \text{ A}$			1	μs
t_s	Storage Time				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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics - Printed in Italy - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A