

## HIGH POWER NPN SILICON TRANSISTOR

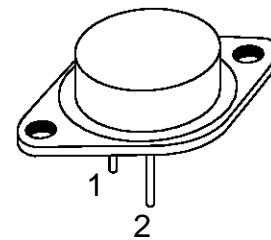
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

### APPLICATIONS:

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

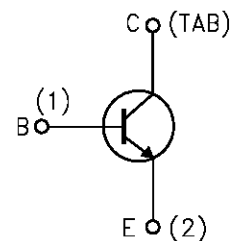
### DESCRIPTION

The BUX98C is a silicon multiepitaxial mesa NPN transistor in Jedec TO-3 metal case, intended for use in switching and industrial applications from single and three-phase mains operations.



**TO-3  
(version R)**

### INTERNAL SCHEMATIC DIAGRAM



SC08820

### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} \leq 0 \Omega$ )	1200	V
$V_{CES}$	Collector-Emitter Voltage ( $V_{BE} = 0$ )	1200	V
$V_{CEO}$	Collector-Emitter Voltage	700	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	30	A
$I_{CM}$	Collector Peak Current ( $t_p < 5$ ms)	60	A
$I_{CMP}$	Collector Peak Current non Repetitive	80	A
$I_B$	Base Current	8	A
$I_{BM}$	Base Peak Current ( $t_p < 5$ ms)	30	A
$P_{tot}$	Total Dissipation at $T_c = 25^\circ\text{C}$	250	W
$T_{stg}$	Storage Temperature	-65 to 200	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	200	$^\circ\text{C}$

## BUX98C

### THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.7	$^{\circ}\text{C/W}$
----------------	----------------------------------	-----	-----	----------------------

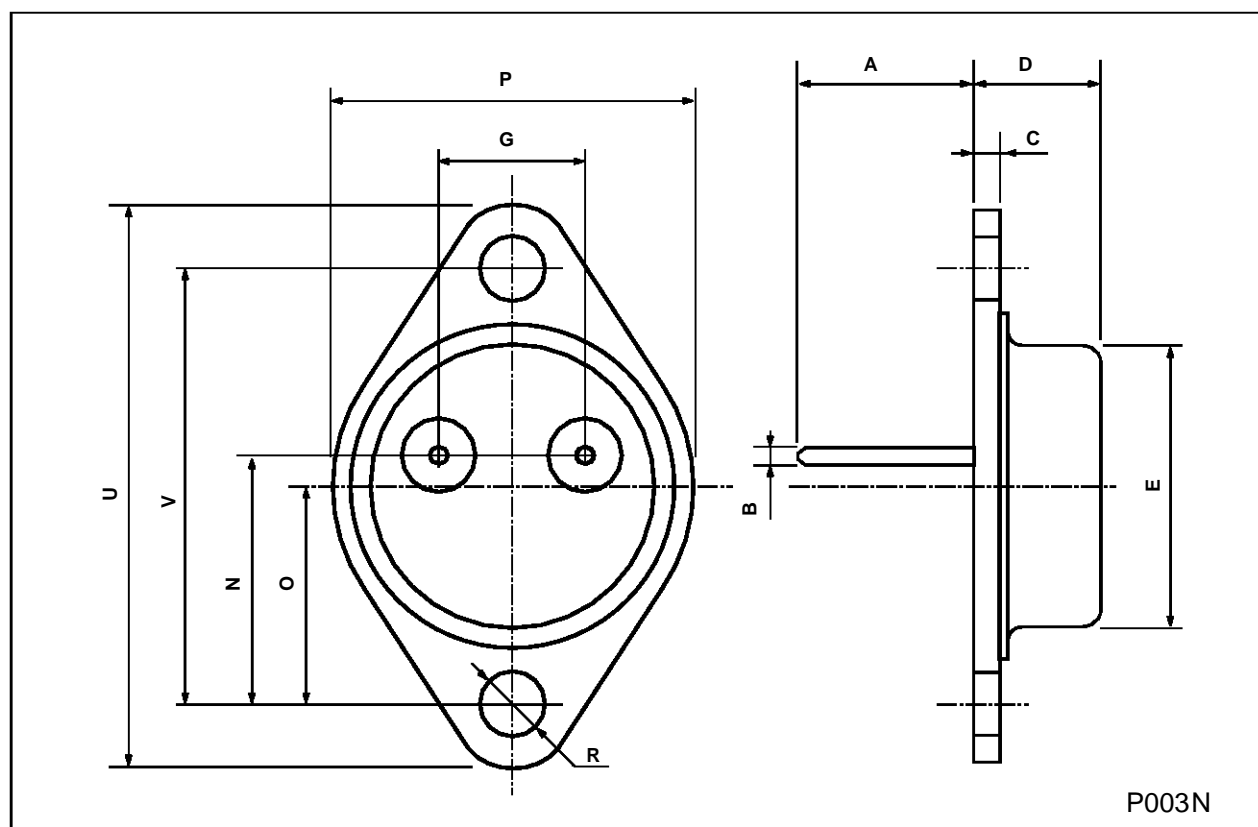
### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

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	$\text{mA}$ $\text{mA}$
$I_{CES}$	Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = V_{CES}$ $V_{CE} = V_{CES}$ $T_{case} = 125^{\circ}\text{C}$			1 6	$\text{mA}$ $\text{mA}$
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = V_{CEO}$			2	$\text{mA}$
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{CB} = 5\ \text{V}$			2	$\text{mA}$
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 100\ \text{mA}$	700			$\text{V}$
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 12\ \text{A}$ $I_B = 3\ \text{A}$ $I_C = 16\ \text{A}$ $I_B = 5\ \text{A}$ $I_C = 20\ \text{A}$ $I_B = 8\ \text{A}$			1.5 2 3	$\text{V}$ $\text{V}$ $\text{V}$
$V_{BE(sat)*}$	Base-Emitter Saturation Voltage	$I_C = 12\ \text{A}$ $I_B = 3\ \text{A}$ $I_C = 20\ \text{A}$ $I_B = 8\ \text{A}$			1.6 2	$\text{V}$ $\text{V}$
$t_{on}$ $t_s$ $t_f$	Turn-on Time Storage Time Fall Time	RESISTIVE LOAD $V_{CC} = 250\ \text{V}$ $I_C = 12\ \text{A}$ $I_{B1} = -I_{B2} = 3\ \text{A}$		0.5 1.5 0.2	1 3 0.8	$\mu\text{s}$ $\mu\text{s}$ $\mu\text{s}$

\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , duty cycle = 1.5 %

## TO-3 (version R) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		11.7			0.460	
B	0.96		1.10	0.037		0.043
C			1.70			0.066
D			8.7			0.342
E			20.0			0.787
G		10.9			0.429	
N		16.9			0.665	
P			26.2			1.031
R	3.88		4.09	0.152		0.161
U			39.50			1.555
V		30.10			1.185	



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  
...