

# HIGH POWER NPN SILICON TRANSISTORS

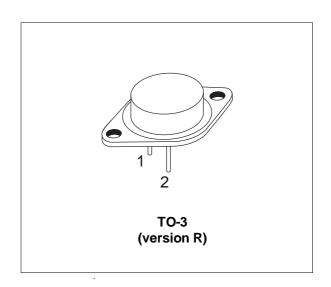
- SGS-THOMSON PREFERRED SALESTYPES
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

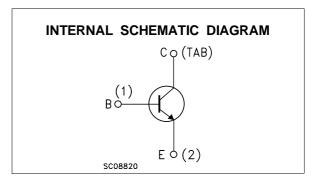
#### **APPLICATIONS**

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

#### **DESCRIPTION**

The BUX98 and BUX98A are silicon multiepitaxial mesa NPN transistor in jedec TO-3 metal case, intended and industrial applications from single and three-phase mains operation.





### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Va	Unit	
		BUX98	BUX98A	
$V_{CER}$	Collector-Emitter Voltage (RBE = $\leq 10 \Omega$ )	850	1000	V
$V_{CES}$	Collector-Base Voltage (V <sub>BE</sub> = 0)	850	1000	V
V <sub>CEO</sub>	Collector-Emitter Voltage (IB = 0)	400	450	V
V <sub>EBO</sub>	Emitter-Base Voltage (IC = 0)		7	V
Ic	Collector Current		30	Α
I <sub>CM</sub>	Collector Peak Current (tp < 5 ms)	(	60	Α
I <sub>CP</sub>	Collector Peak Current non Rep. (tp < 20 μs)	8	30	Α
lΒ	Base Current		8	Α
I <sub>BM</sub>	Base Peak Current (t <sub>p</sub> < 5 ms)	;	30	Α
P <sub>tot</sub>	Total Power Dissipation at T <sub>case</sub> < 25 °C	250		W
T <sub>stg</sub>	Storage Temperature	-65 t	to 200	°C
Tj	Max Operating Junction Temperature	200		°C

July 1997 1/4

## THERMAL DATA

## **ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25$ °C unless otherwise specified)

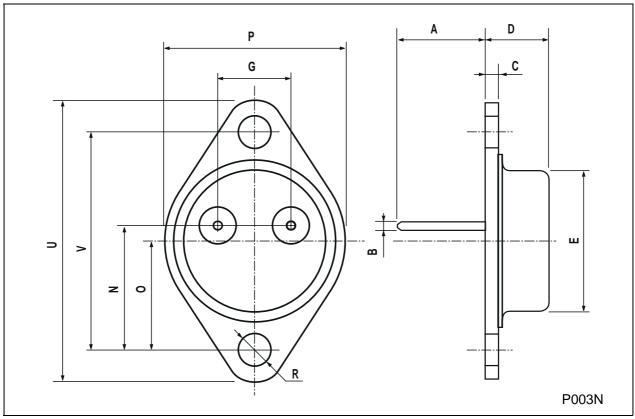
Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
I <sub>CER</sub>	Collector Cut-off Current ( $R_{BE} = 10 \Omega$ )	V <sub>CE</sub> = V <sub>CES</sub> V <sub>CE</sub> = V <sub>CES</sub>	T <sub>CASE</sub> = 125 °C			1 8	μA mA
I <sub>CES</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0 )	Vce = Vces Vce = Vces	T <sub>CASE</sub> = 125 °C			400 4	μA mA
ICEO	Collector Cut-off Current (I <sub>B</sub> = 0)	VCE = VCEO				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 for <b>BUX98</b> for <b>BUX98A</b>		400 450			V V
V <sub>CER(sus)</sub> *	Collector-Emitter Sustaining Voltage	L = 2mH for BUX98 for BUX98A	I <sub>C</sub> = 1 A	850 1000			V V
VCE(sat)*	Collector-Emitter Saturation Voltage	for <b>BUX98</b> I <sub>C</sub> = 20 A for <b>BUX98A</b> I <sub>C</sub> = 16 A I <sub>C</sub> = 24 A	I <sub>B</sub> = 4 A I <sub>B</sub> = 3.2 A I <sub>B</sub> = 5 A			1.5 1.5 5	V V V
V <sub>BE(sat)</sub> *	Base-Emitter Saturation Voltage	for <b>BUX98</b> I <sub>C</sub> = 20 A for <b>BUX98A</b> I <sub>C</sub> = 16 A	I <sub>B</sub> = 4 A I <sub>B</sub> = 3.2 A			1.6 1.6	V
t <sub>on</sub>	Turn-on Time	for BUX98				1	μs
ts	Storage Time	V <sub>CC</sub> = 150 V	$I_C = 20 A$			3	μs
t <sub>f</sub>	Fall Time	$I_{B1} = -I_{B2} = 4 A$				0.8	μs
ton	Turn-on Time	for BUX98A	-			1	μs
ts	Storage Time	V <sub>CC</sub> = 150 V	I <sub>C</sub> = 16 A			3	μs
t <sub>f</sub>	Fall Time	$I_{B1} = -I_{B2} = 3.2 \text{ A}$				0.8	μs

<sup>\*</sup> Pulsed: Pulse duration = 300 μs, duty cycle = 1.5 %



# TO-3 (version R) MECHANICAL DATA

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



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