SGS-THOMSON MICROELECTRONICS

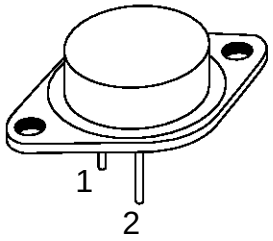
BUX98
BUX98A

HIGH POWER NPN SILICON TRANSISTORS

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

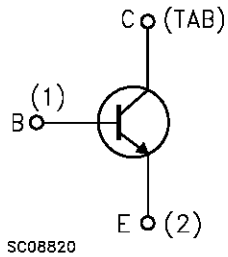
APPLICATIONS
- HIGH FREQUENCY AND EFFICENCY CONVERTERS
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

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.



TO-3
(version R)

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUX98	BUX98A	
V_{CER}	Collector-Emitter Voltage (RBE = ≤ 10 Ω)	850	1000	V
V_{CES}	Collector-Base Voltage (V_{BE} = 0)	850	1000	V
V_{CEO}	Collector-Emitter Voltage (IB = 0)	400	450	V
V_{EBO}	Emitter-Base Voltage (IC = 0)	7		V
I_C	Collector Current	30		A
I_{CM}	Collector Peak Current (tp < 5 ms)	60		A
I_{CP}	Collector Peak Current non Rep. (tp < 20 μs)	80		A
I_B	Base Current	8		A
I_{BM}	Base Peak Current (t_p < 5 ms)	30		A
P_{tot}	Total Power Dissipation at T_{case} < 25 °C	250		W
T_{stg}	Storage Temperature	-65 to 200		°C
T_j	Max Operating Junction Temperature	200		°C

THERMAL DATA

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

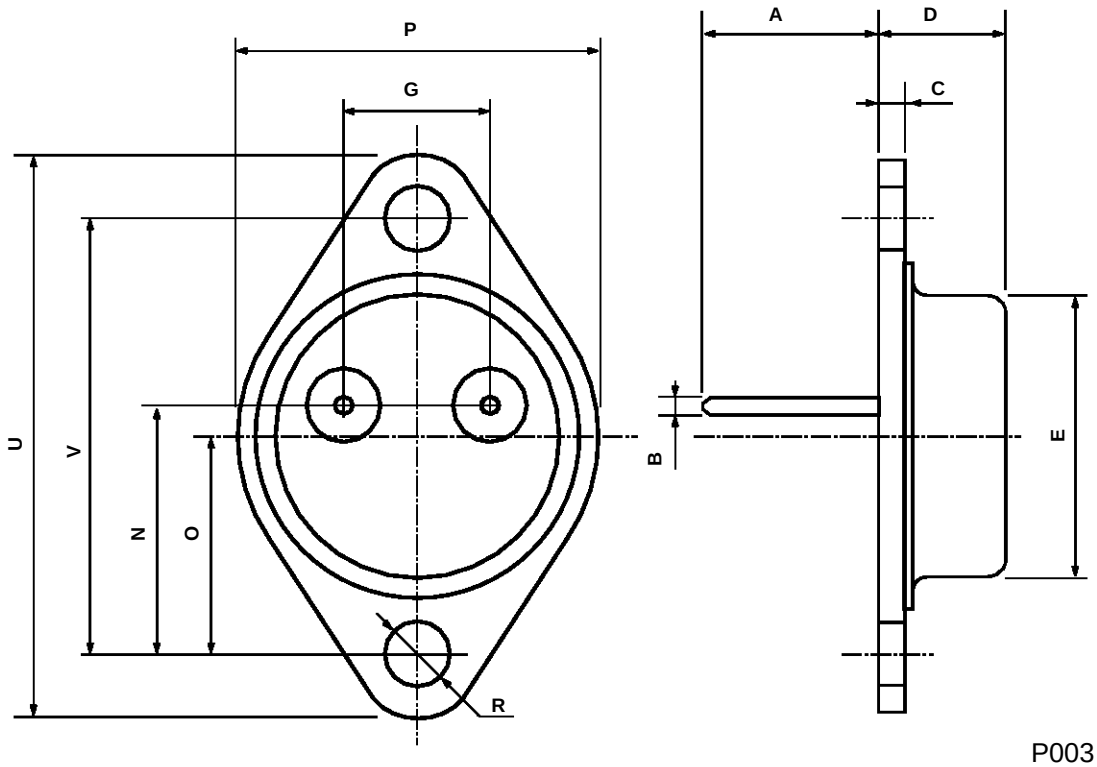
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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 ^oC			1 8	µA mA
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = V_{CES} V_{CE} = V_{CES} T_{CASE} = 125 ^oC			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 for **BUX98** for **BUX98A**	 400 450			 V V
$V_{CER(sus)}$*	Collector-Emitter Sustaining Voltage	L = 2mH I_C = 1 A for **BUX98** for **BUX98A**	 850 1000			 V V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	for **BUX98** I_C = 20 A I_B = 4 A for **BUX98A** I_C = 16 A I_B = 3.2 A I_C = 24 A I_B = 5 A			 1.5 1.5 5	 V V V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	for **BUX98** I_C = 20 A I_B = 4 A for **BUX98A** I_C = 16 A I_B = 3.2 A			 1.6 1.6	 V V
t_{on}	Turn-on Time	for **BUX98**			1	µs
t_s	Storage Time	V_{CC} = 150 V I_C = 20 A			3	µs
t_f	Fall Time	I_{B1} = - I_{B2} = 4 A			0.8	µs
t_{on}	Turn-on Time	for **BUX98A**			1	µs
t_s	Storage Time	V_{CC} = 150 V I_C = 16 A			3	µs
t_f	Fall Time	I_{B1} = - I_{B2} = 3.2 A			0.8	µs

* Pulsed: Pulse duration = 300 µs, 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	



P003N