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HIGH POWER NPN SILICON TRANSISTORS

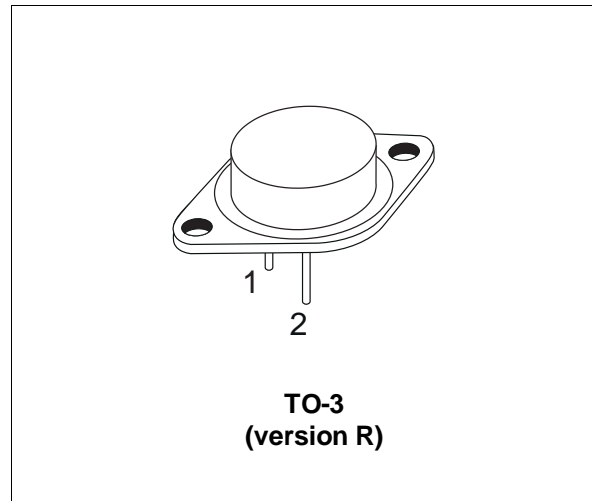
- STMicroelectronics PREFERRED SALESTYPES
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

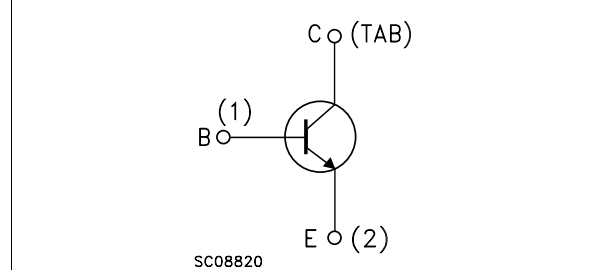
- HIGH FREQUENCY AND EFFICIENCY CONVERTERS
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUX98 and BUX98A are Silicon Multi-Epitaxial Mesa NPN transistor in jedec TO-3 metal case, intended and industrial applications from single and three-phase mains operation.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		BUX98	BUX98A	
V_{CER}	Collector-Emitter Voltage ($R_{BE} = \leq 10 \Omega$)	850	1000	V
V_{CES}	Collector-Base Voltage ($V_{BE} = 0$)	850	1000	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	400	450	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_{CP}	Collector Peak Current non Rep. ($t_p < 20 \mu s$)	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 $T_{case} < 25 \text{ }^\circ\text{C}$	250		W
T_{stg}	Storage Temperature	-65 to 200		$^\circ\text{C}$
T_j	Max Operating Junction Temperature	200		$^\circ\text{C}$

BUX98 / BUX98A

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	0.7	°C/W
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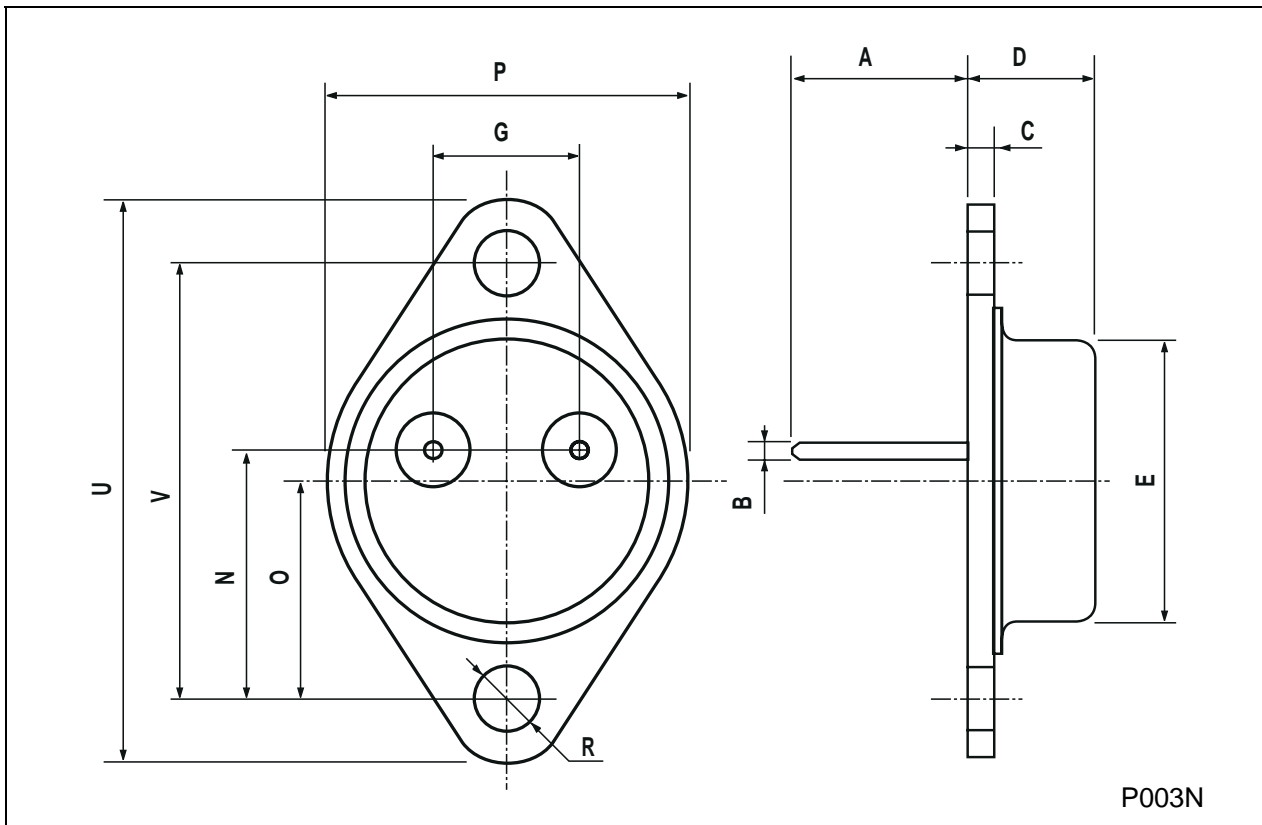
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CER}	Collector Cut-off Current (R _{BE} = 10 Ω)	V _{CE} = V _{CES}			1	μA
		V _{CE} = V _{CES} T _{case} = 125 °C			8	μA
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = V _{CES}			400	μA
		V _{CE} = V _{CES} T _{case} = 125 °C			4	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 _B = 0)	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			1.5	V
		for BUX98A I _C = 16 A I _B = 4 A			1.5	V
		I _C = 24 A I _B = 3.2 A I _B = 5 A			5	V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	for BUX98 I _C = 20 A			1.6	V
		for BUX98A I _C = 16 A I _B = 4 A			1.6	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	



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