SGS-THOMSON MICROELECTRONICS

BUX98AP

HIGH POWER NPN SILICON TRANSISTOR

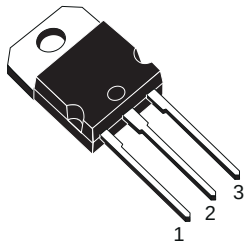
- SGS-THOMSON PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

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

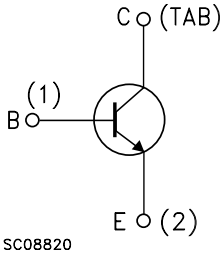
DESCRIPTION

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.



TO-218 (SOT-93)

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CER}	Collector-Emitter Voltage (R_{BE} = ≤ 10 Ω)	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 (tp < 5 ms)	36	A
I_B	Base Current	5	A
I_{BM}	Base Peak Current (t_p < 5 ms)	8	A
P_{tot}	Total Power Dissipation at T_{case} < 25 °C	200	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max Operating Junction Temperature	150	°C

THERMAL DATA

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

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	450			V
$V_{CER(sus)}$*	Collector-Emitter Sustaining Voltage	L = 2mH I_C = 1 A	1000			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 16 A I_B = 3.2 A			1.2	V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = 16 A I_B = 3.2 A			1.5	V
t_{on}	Turn-on Time	V_{CC} = 150 V I_C = 20 A			1	µs
t_s	Storage Time	I_{B1} = - I_{B2} = 4 A			3	µs
t_f	Fall Time				0.8	µs
t_{on}	Turn-on Time	V_{CC} = 150 V I_C = 16 A			1	µs
t_s	Storage Time	I_{B1} = - I_{B2} = 3.2 A			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