



HIGH POWER NPN SILICON TRANSISTOR

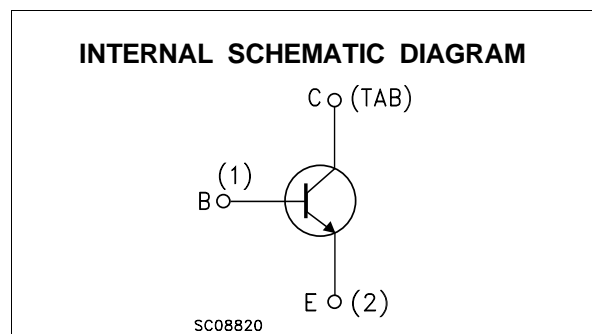
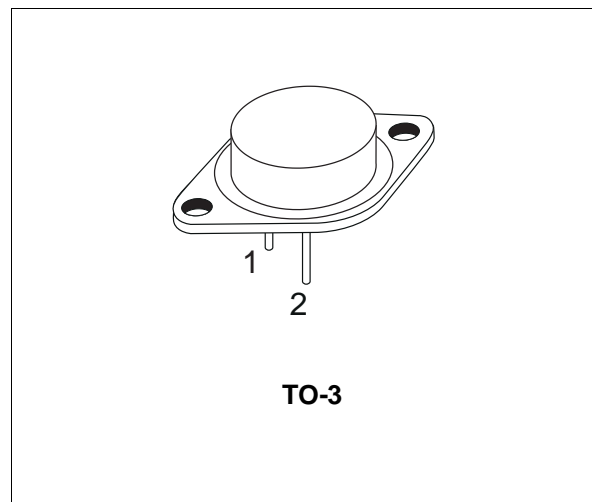
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED

APPLICATIONS

- MOTOR CONTROL
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BUX10 is a silicon Multi-Epitaxial Planar NPN transistor in Jedec TO-3 metal case, intended for use in switching and linear applications in military and industrial equipment.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	160	V
V_{CEX}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	160	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	125	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	25	A
I_{CM}	Collector Peak Current ($t_P < 10$ ms)	30	A
I_B	Base Current	5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	150	W
T_{stg}	Storage Temperature	-65 to 200	°C
T_j	Max Operating Junction Temperature	200	°C

BUX10

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.17	°C/W
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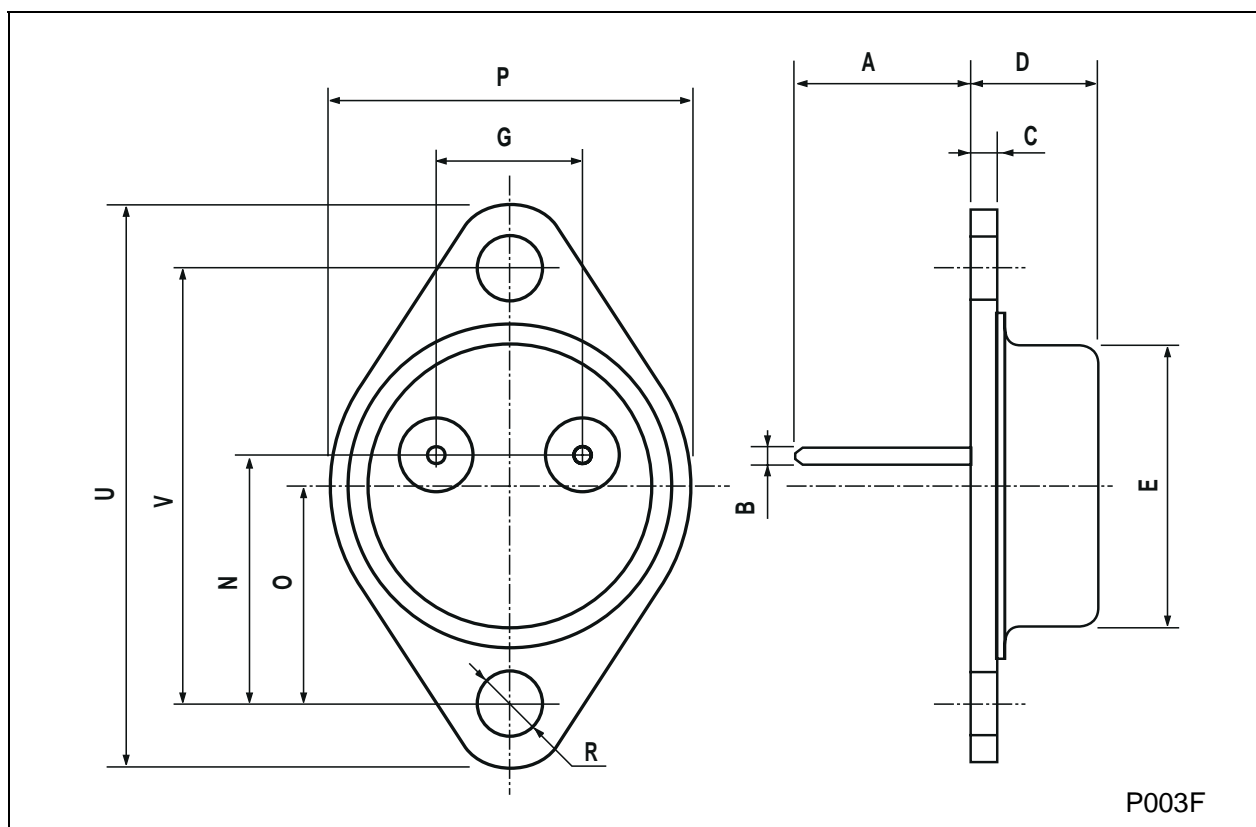
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
I _{CEO}	Collector Cut-off Current (I _B = 0)	V _{CE} = 100 V			1.5	mA	
I _{CEX}	Collector Cut-off Current	V _{CE} = 160 V			1.5	mA	
		T _{case} = 125 °C V _{CE} = 160 V	V _{BE} = -1.5V		6	mA	
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA	
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 200 mA	125			V	
V _{EBO}	Emitter-Base Voltage (I _C = 0)	I _E = 50 mA	7			V	
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 10 A	I _B = 1 A	0.3	0.6	V	
		I _C = 20 A	I _B = 2 A	0.7	1.2	V	
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 20 A	I _B = 2 A	1.6	2	V	
h _{FE}	DC Current Gain	I _C = 10 A	V _{CE} = 2 V	20		60	
		I _C = 20 A	V _{CE} = 4 V	10			
I _{S/b}	Second Breakdown Collector Current	V _{CE} = 30 V	t = 1 s	5		A	
		V _{CE} = 48 V	t = 1 s	1		A	
f _T	Transistor Frequency	I _C = 1 A f = 10MHz	V _{CE} = 15 V	8		MHz	
t _{on}	Turn-on Time	I _C = 20 A V _{CC} = 30V	I _{B1} = 2 A		0.5	1.5	μs
t _s	Storage Time	I _C = 20 A V _{CC} = 30V	I _{B1} = - I _{B2} = 2A		0.6	1.2	μs
t _f	Fall Time				0.15	0.3	μs
	Clamped E _{s/b} Collector Current	V _{clamp} = 125 V L = 500 μH		20		A	

* Pulsed: Pulse duration = 300μs, duty cycle ≤ 2 %

TO-3 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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