



BUX87

HIGH VOLTAGE NPN SILICON POWER TRANSISTOR

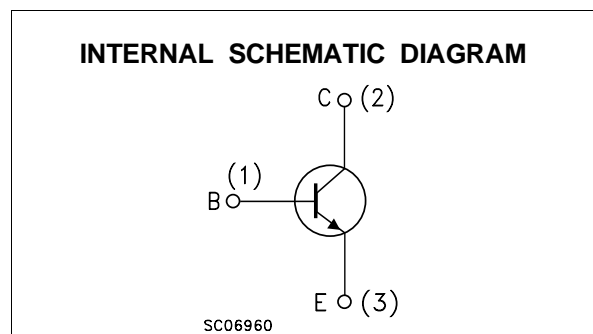
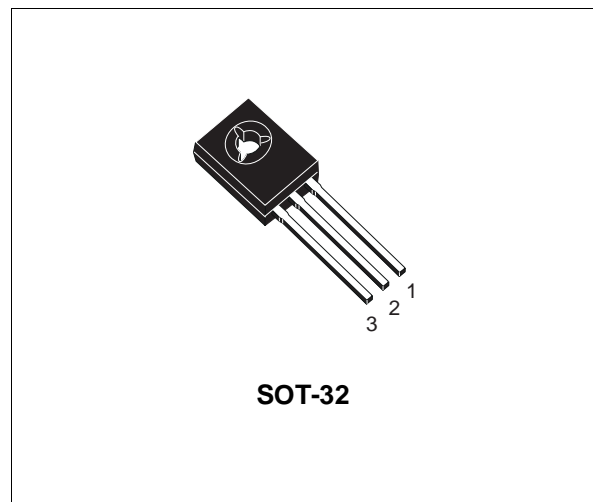
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY (450V V_{CE0})
- MINIMUM LOT-TO-LOT SPREAD FOR RELIABLE OPERATION
- HIGH DC CURRENT GAIN

APPLICATIONS

- FLYBACK AND FORWARD SINGLE TRANSISTOR LOW POWER CONVERTERS

DESCRIPTION

The BUX87 is manufactured using High Voltage Multi-Epitaxial Planar technology for high switching speeds and high voltage withstand capability.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage ($V_{BE} = -1.5V$)	1000	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	450	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	0.5	A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	1	A
I_B	Base Current	0.3	A
I_{BM}	Base Peak Current ($t_p < 5$ ms)	0.6	A
P_{tot}	Total Dissipation at $T_c = 25$ °C	40	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

BUX87

THERMAL DATA

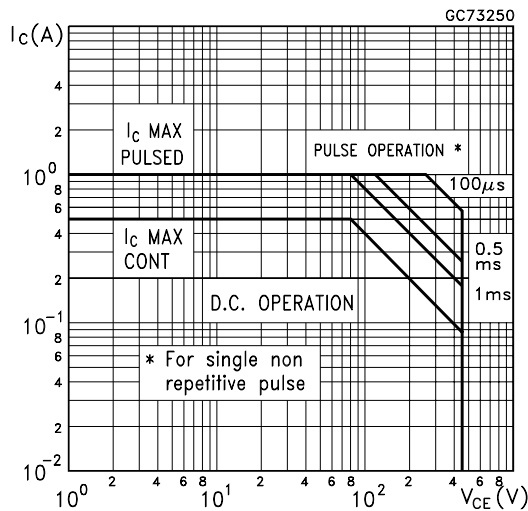
R _{thj-case}	Thermal Resistance Junction-case	Max	3.12	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	100	°C/W

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

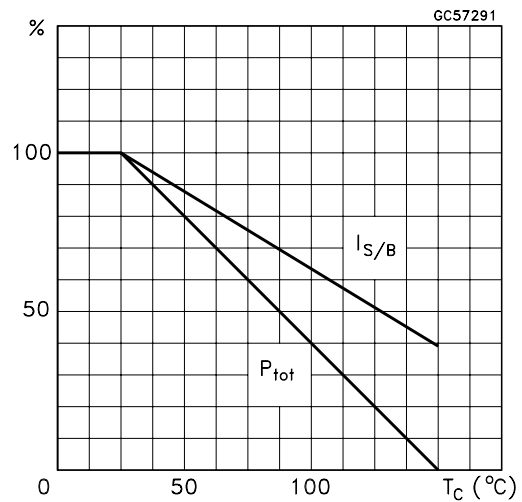
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CEV}	Collector Cut-off Current (V _{BE} = -1.5V)	V _{CE} = 1000 V V _{CE} = 1000 V T _j = 125 °C			100 1	μA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA	450			V
V _{BEO}	Collector-Base Sustaining Voltage	I _C = 10 mA	5			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 0.1 A I _B = 0.01 A I _C = 0.2 A I _B = 0.02 A			0.8 1	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 0.2 A I _B = 0.02 A			1	V
h _{FE*}	DC Current Gain	I _C = 50 mA V _{CE} = 5 V I _C = 40 mA V _{CE} = 5 V	12	50		
f _T	Transition Frequency	I _C = 50 mA V _{CE} = 10 V f=1MHz		20		MHz
t _s t _f	RESISTIVE LOAD Storage Time Fall Time	V _{CC} = 250 V I _C = 200 mA I _{B1} = 40 mA I _{B2} = -80 mA t _p = 20 μs		4.5 0.5		μs μs

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

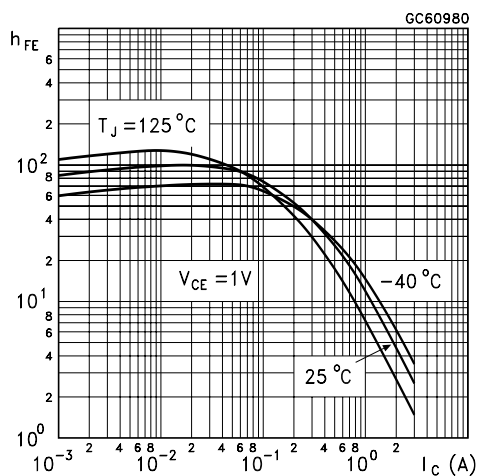
Safe Operating Area



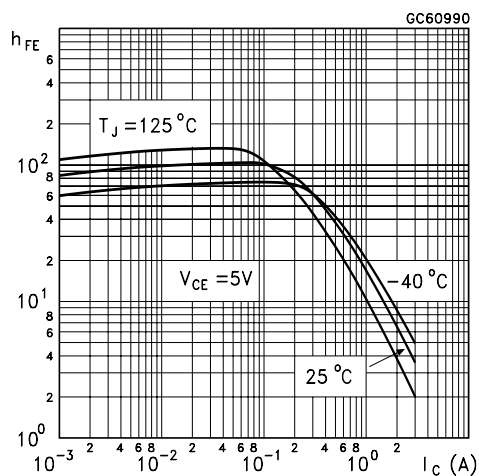
Derating Curve



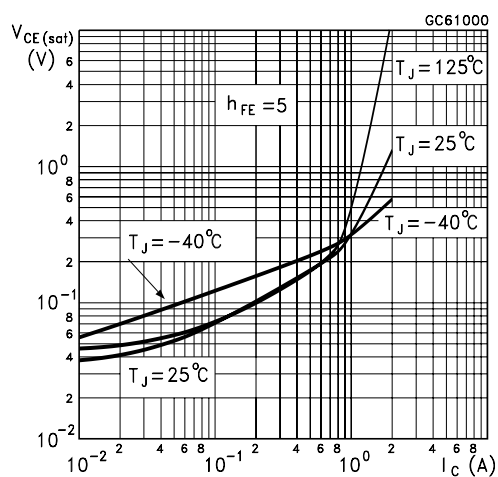
DC Current Gain



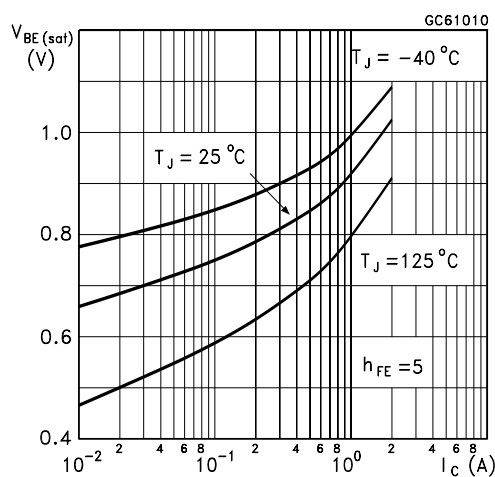
DC Current Gain



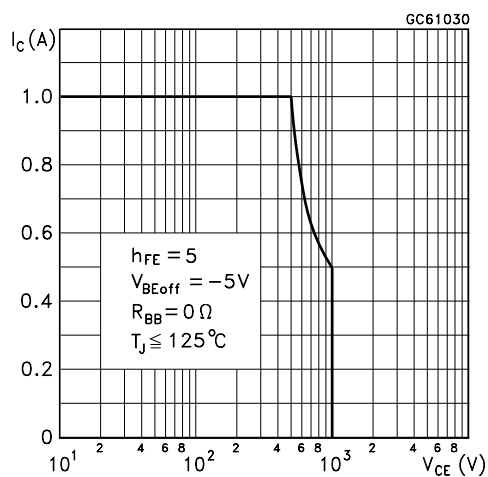
Collector Emitter Saturation Voltage



Base Emitter Saturation Voltage

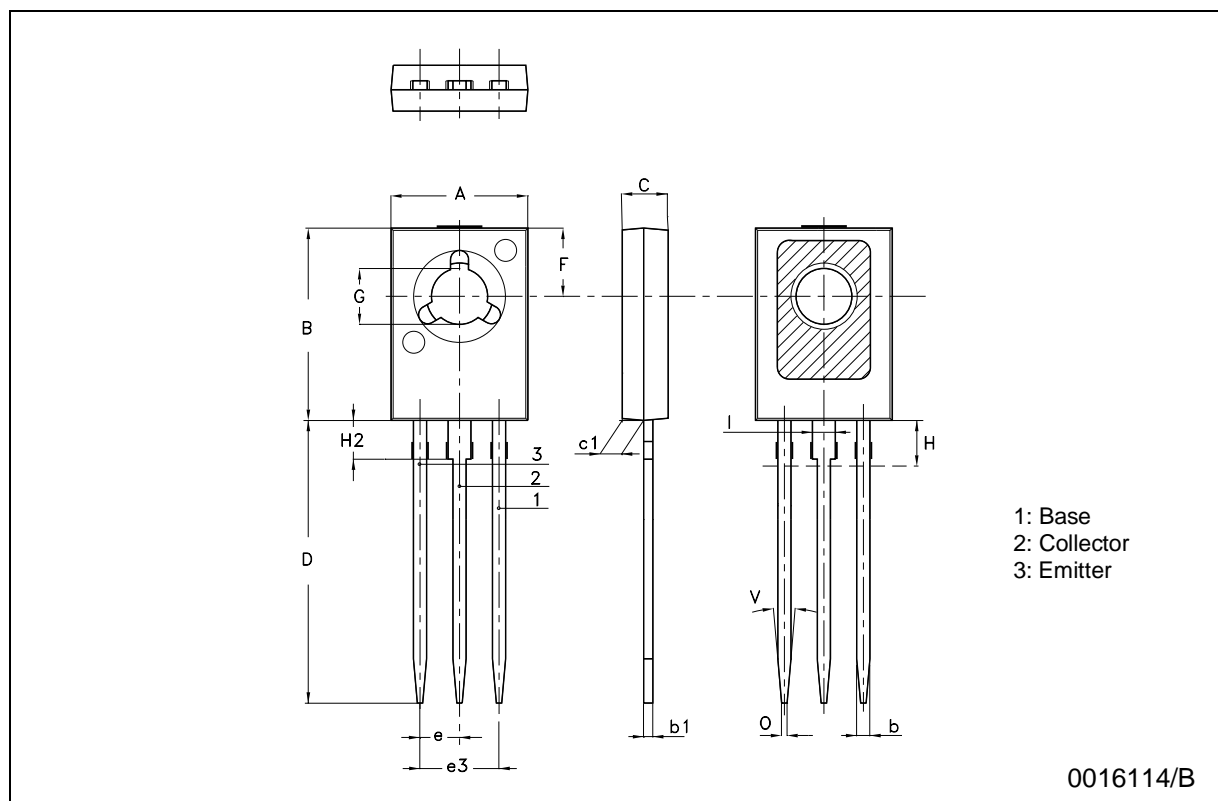


Reverse Biased SOA



SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.425
b	0.7		0.9	0.028		0.035
b1	0.40		0.65	0.015		0.025
C	2.4		2.7	0.094		0.106
c1	1.0		1.3	0.039		0.051
D	15.4		16.0	0.606		0.630
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100
H2		2.15			0.084	
I		1.27			0.05	
O		0.3			0.011	
V		10°			10°	



Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics.

All other names are the property of their respective owners.

© 2003 STMicroelectronics – All Rights reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>