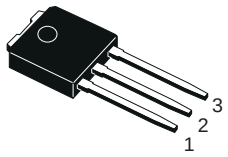
BUXD87

HIGH VOLTAGE NPN POWER TRANSISTOR

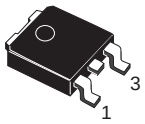
- REVERSE PINS OUT Vs STANDARD IPAK/DPAK PACKAGE
- HIGH VOLTAGE CAPABILITY
- HIGH DC CURRENT GAIN
- THROUGH-HOLE IPAK (TO-251) POWER PACKAGE IN TUBE (SUFFIX "-1")
- SURFACE-MOUNTING DPAK (TO-252) POWER PACKAGE IN TAPE & REEL (SUFFIX "T4")

APPLICATIONS:
- SWITCH MODE POWER SUPPLIES
- GENERAL PURPOSE SWITCHING

DESCRIPTION
The BUXD87 is manufactured using High Voltage Multi Epitaxial Planar technology for high switching speeds and high voltage withstand capability.

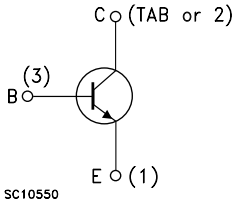


IPAK
TO-251
(Suffix "-1")



DPAK
TO-252
(Suffix "T4")

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEV}	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 ^oC	20	W
T_{stg}	Storage Temperature	-65 to 150	^oC
T_j	Max. Operating Junction Temperature	150	^oC

THERMAL DATA

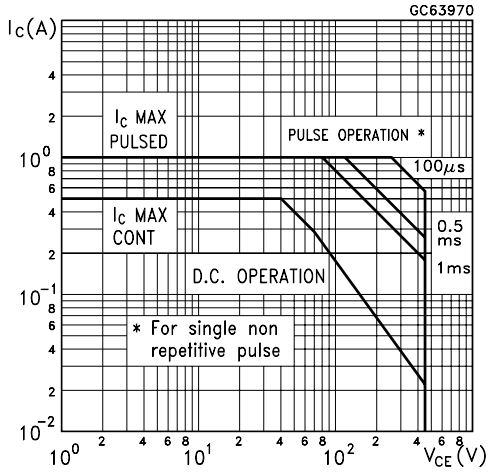
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	6.25	°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	100	°C/W

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

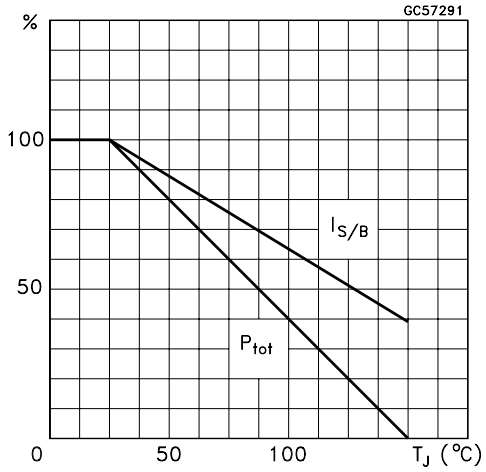
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEV}	Collector Cut-off Current (V_{BE} = -1.5V)	V_{CE} = 1000 V V_{CE} = 1000 V T_j = 125 °C			100 1	µA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EB} = 5 V			1	mA
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	I_C = 100 mA	450			V
V_{BEO}	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 %

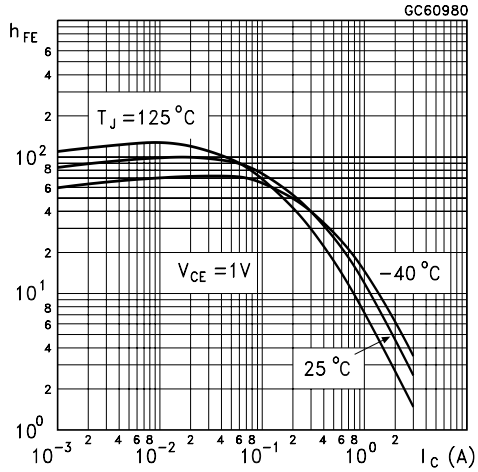
Safe Operating Area



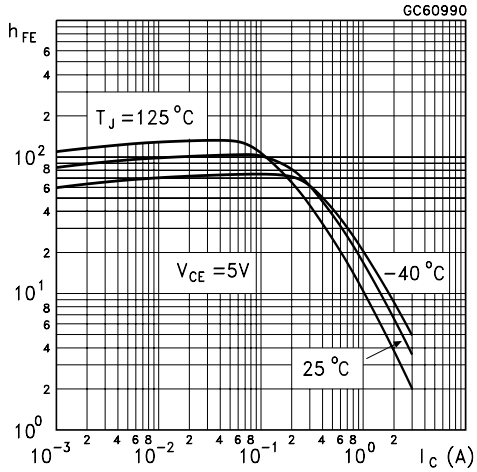
Derating Curves



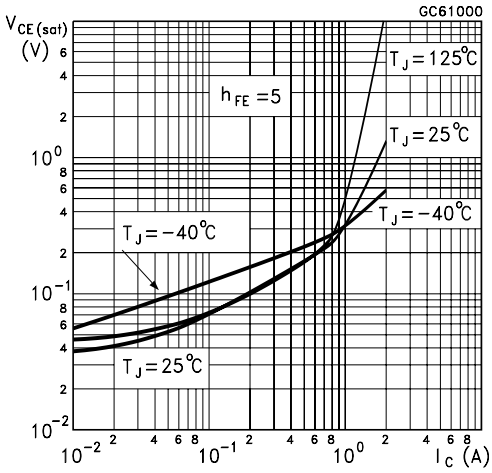
DC Current Gain



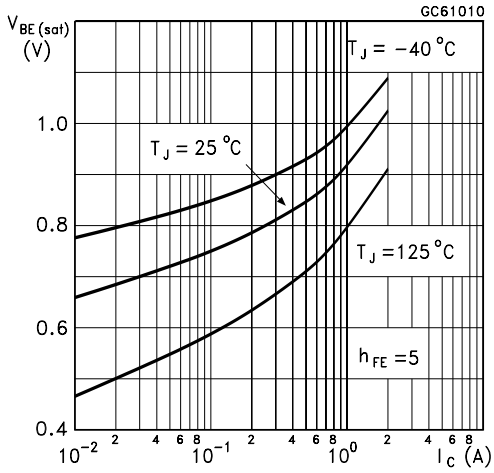
DC Current Gain



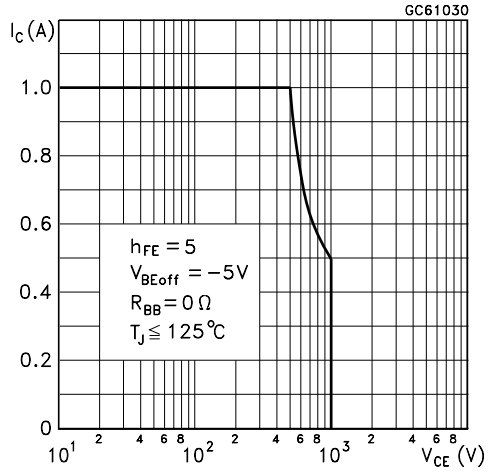
Collector Emitter Saturation Voltage



Base Emitter Saturation Voltage

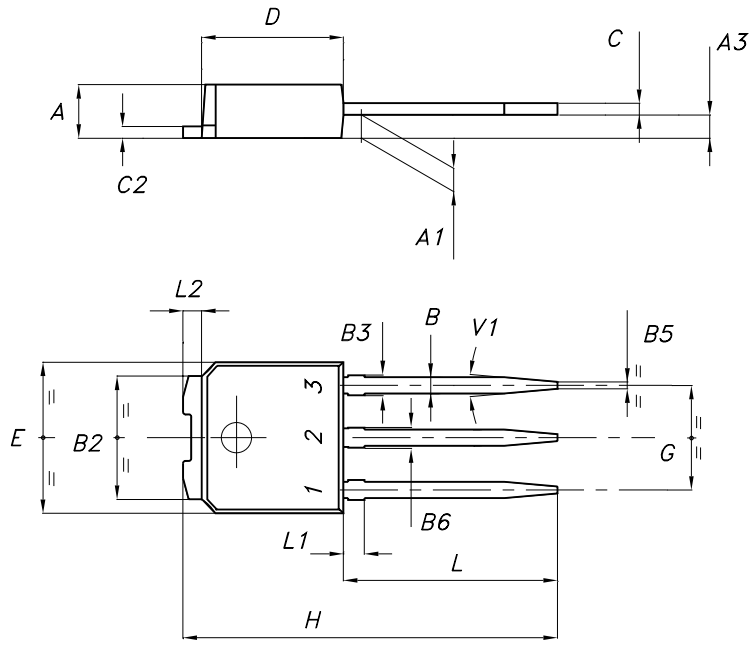


Reverse Biased SOA



TO-251 (IPAK) MECHANICAL DATA

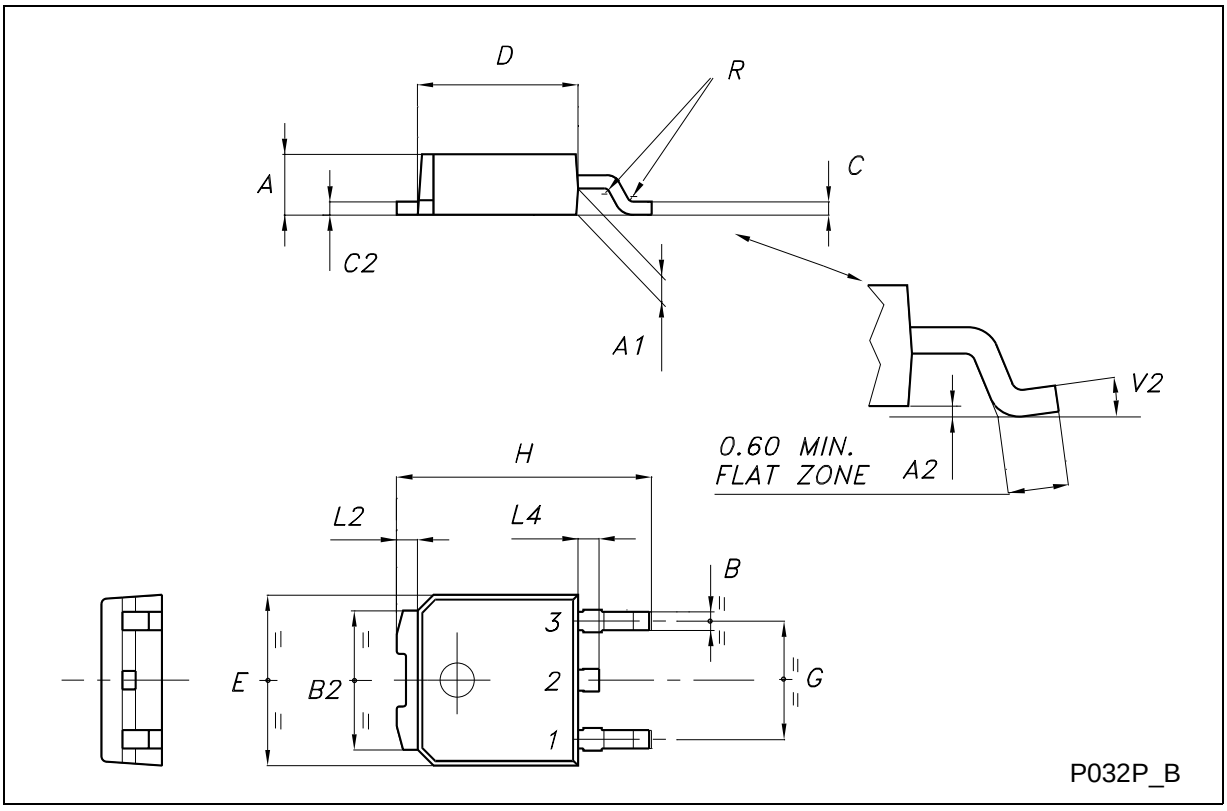
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.20		2.40	0.087		0.094
A1	0.90		1.10	0.035		0.043
A3	0.70		1.30	0.028		0.051
B	0.64		0.90	0.025		0.035
B2	5.20		5.40	0.204		0.213
B3			0.85			0.033
B5		0.30			0.012	
B6			0.95			0.037
C	0.45		0.60	0.018		0.024
C2	0.48		0.60	0.019		0.024
D	6.00		6.20	0.237		0.244
E	6.40		6.60	0.252		0.260
G	4.40		4.60	0.173		0.181
H	15.90		16.30	0.626		0.642
L	9.00		9.40	0.354		0.370
L1	0.80		1.20	0.031		0.047
L2		0.80	1.00		0.031	0.039
V1		10^o			10^o	



P032N_E

TO-252 (DPAK) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.20		2.40	0.087		0.094
A1	0.90		1.10	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.64		0.90	0.025		0.035
B2	5.20		5.40	0.204		0.213
C	0.45		0.60	0.018		0.024
C2	0.48		0.60	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.60	0.252		0.260
G	4.40		4.60	0.173		0.181
H	9.35		10.10	0.368		0.398
L2		0.8			0.031	
L4	0.60		1.00	0.024		0.039
V2	0^o		8^o	0^o		0^o



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