

BUT11A

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

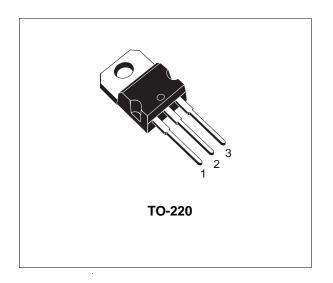
- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR
- HIGH VOLTAGE CAPABILITY
- FAST SWITCHING SPEED

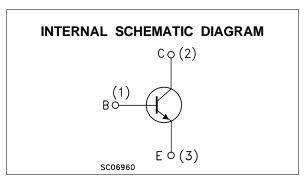
APPLICATIONS:

■ FLYBACK AND FORWARD SINGLE TRANSISTOR LOW POWER CONVERTERS

DESCRIPTION

The BUT11A is a silicon Multiepitaxial Mesa NPN transistor in Jedec TO-220 plastic package, particularly intended for switching application.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage (V _{BE} = 0 V)	1000	V
VCEO	Collector-Emitter Voltage (I _B = 0)	450	V
V_{EBO}	Emitter-Base Voltage (I _C = 0)	9	V
Ic	Collector Current	5	А
Icm	Collector Peak Current (tp < 5 ms)	10	Α
Ι _Β	Base Current	2	Α
I _{BM}	Base Peak Current (t _p < 5 ms)	4	Α
P _{tot}	Total Power Dissipation at T _c ≤ 25 °C	83	W
T _{stg}	Storage Temperature	-65 to 150	°C
Ti	Max. Operating Junction Temperature	150	°C

March 2004 1/5

THERMAL DATA

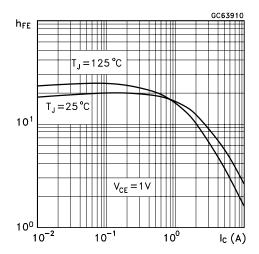
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
ICES	Collector Cut-off Current (V _{BE} = 0)	V_{CE} = rated V_{CES} at T_c = 125°C			1 2	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	I _C = 0			10	mA
V _{CEO(sus)*}	Collector-emitter Sustaining Voltage (I _B = 0)	$I_{B \text{ (off)}} = 0$ $I_{C} = 100 \text{ mA}$	450			V
V _{CE(sat)*}	Collector-emitter Saturation Voltage	$I_C = 2.5 \text{ A}$ $I_B = 0.5 \text{ A}$			1.5	V
V _{BE(sat)*}	Base-emitter Saturation Voltage	$I_C = 2.5 \text{ A}$ $I_B = 0.5 \text{ A}$			1.3	V
h _{FE}	DC Current Gain	I _C = 5 mA	10 10		35 35	
	RESISTIVE LOAD	I _C = 2.5 A V _{CC} = 250 V				
ton	Turn on Time	$I_B = -I_{B2} = 0.5 A$			1	μs
ts	Storage Time				4	μs
t _f	Fall Time				0.8	μs

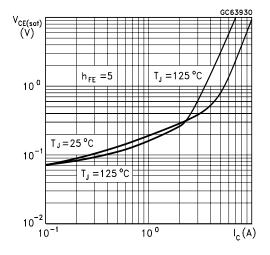
^{*} Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %.

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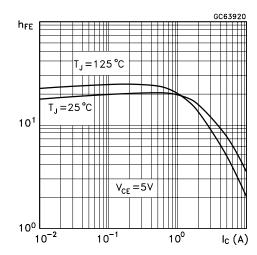
DC Current Gain



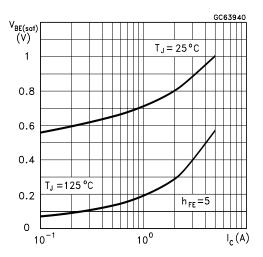
Collector-Emitter Saturation Voltage



DC Current Gain



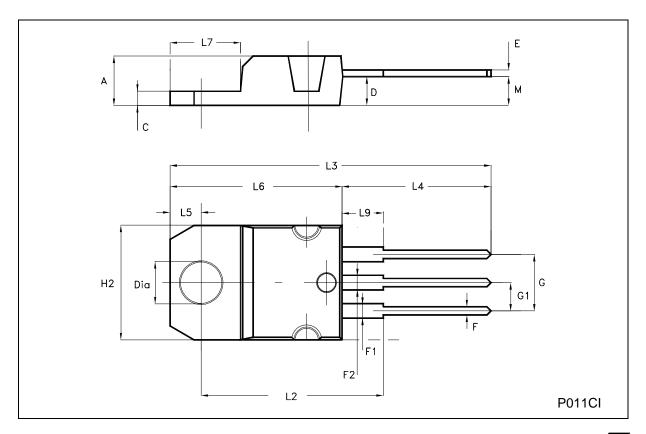
Base-Emitter Saturation Voltage



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TO-220 MECHANICAL DATA

DIM.	mm			inch		
DIN.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Α	4.40		4.60	0.173		0.181
С	1.23		1.32	0.048		0.052
D	2.40		2.72	0.094		0.107
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.202
G1	2.40		2.70	0.094		0.106
H2	10.00		10.40	0.394		0.409
L2		16.40			0.645	
L4	13.00		14.00	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.20		6.60	0.244		0.260
L9	3.50		3.93	0.137		0.154
М		2.60			0.102	
DIA.	3.75		3.85	0.147		0.151



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