BCX68-16 Not Recommended for New Design, Please Use BCX68-25

SOT89 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

BCX68

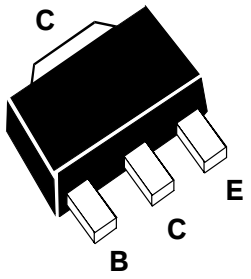
ISSUE 3 – FEBRUARY 2007 ✪

FEATURES

* High gain and low saturation voltages

COMPLEMENTARY TYPE – BCX69

PARTMARKING DETAIL – BCX68 – CE
BCX68-16 – CC
BCX68-25 – CD



SOT89

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	2	A
Continuous Collector Current	I_C	1	A
Power Dissipation at T_{amb}=25°C	P_{tot}	1	W
Operating and Storage Temperature Range	T_j:T_{stg}	-65 to +150	°C

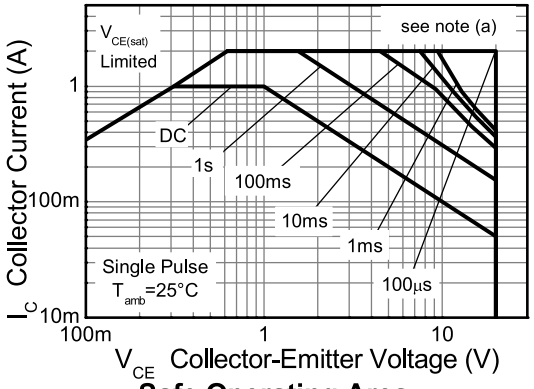
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown voltage	$V_{(BR)CBO}$	25			V	I_C =100µA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	20			V	I_C =10mA
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E =100µA
Collector Cut-Off Current	I_{CBO}			0.1 10	µA µA	V_{CB} =25V V_{CB} =25V, T_a =150°C
Emitter Cut-Off Current	I_{EBO}			10	µA	V_{EB} =5V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	I_C =1A, I_B =100mA*
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			1.0	V	I_C =1A, V_{CE} =1V*
Static Forward Current Transfer Ratio	h_{FE} BCX68-16 BCX68-25	50 85 60 100 160	 250	 375 250 400		I_C =5mA, V_{CE} =10V I_C =500mA, V_{CE} =1V I_C =1A, V_{CE} =1V* I_C =500mA, V_{CE} =1V* I_C =500mA, V_{CE} =1V
Transition Frequency	f_T	100			MHz	I_C =100mA, V_{CE} =5V, f=100MHz
Output Capacitance	C_{obo}			25	pF	V_{CB} =10V, f=1MHz

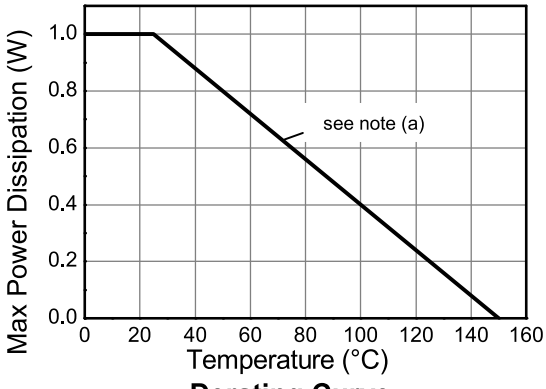
*Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤2%

BCX68

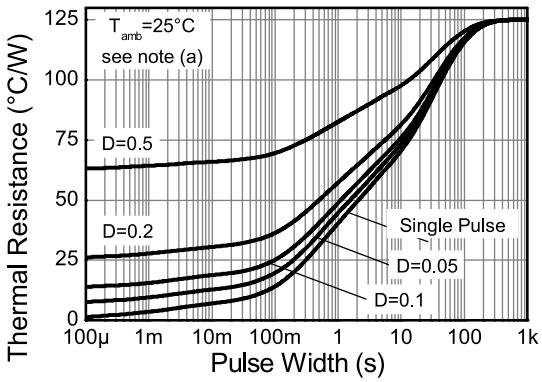
Characteristics



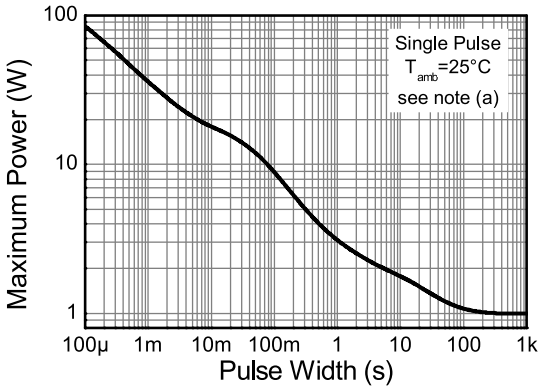
Safe Operating Area



Derating Curve



Transient Thermal Impedance



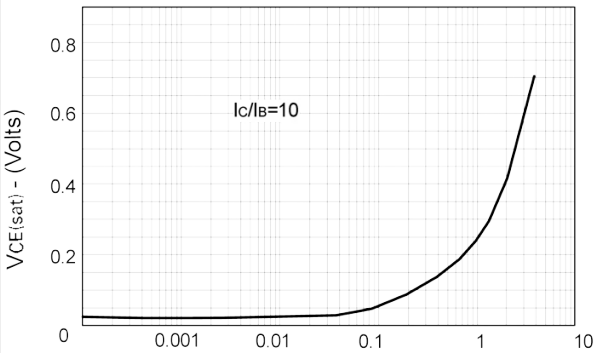
Pulse Power Dissipation

Note:

(a) Measured on a 15mm x 15mm x 1.6mm FR4 board with a high coverage of single sided 1oz weight copper.

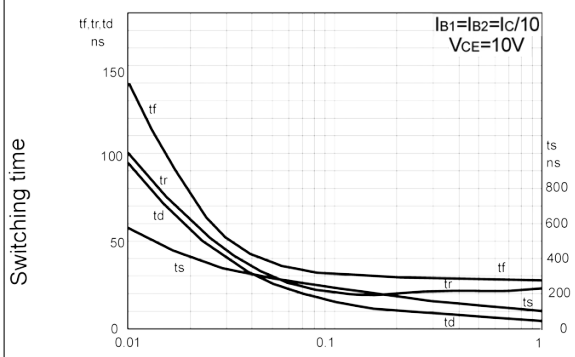
BCX68

TYPICAL CHARACTERISTICS



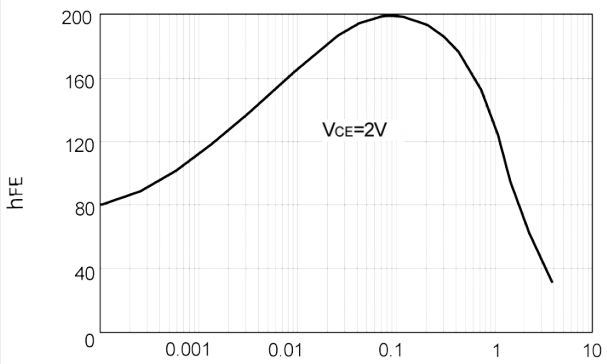
IC - Collector Current (Amps)

VCE(sat) v IC



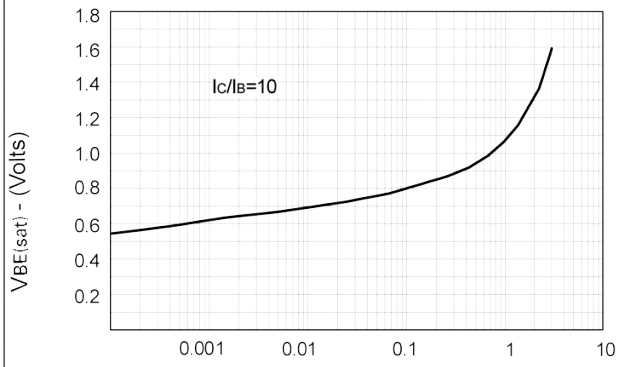
IC - Collector Current (Amps)

Switching Speeds



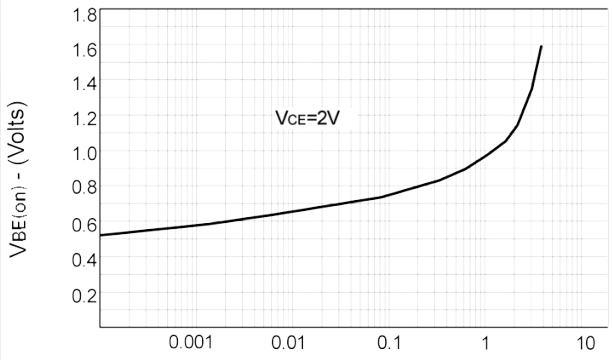
IC - Collector Current (Amps)

hFE v IC



IC - Collector Current (Amps)

VBE(sat) v IC



IC - Collector Current (Amps)

VBE(on) v IC