

Small Signal Product

300mW, NPN Small Signal Transistor

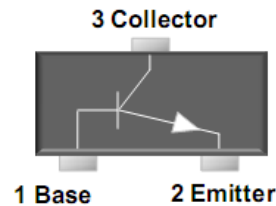
FEATURES

- Low power loss, high current capability, low VF
- Surface mount device type
- Moisture sensitivity level 1
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- Pb free and RoHS compliant
- Packing code with suffix "G" means green compound (halogen-free)


SOT-23


MECHANICAL DATA

- Case: SOT- 23 small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Weight: 8mg (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	P _D	300	mW
Collector-Base Voltage	V _{CBO}	50	V
Collector-Emitter Voltage	V _{CEO}	45	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	500	mA
Thermal Resistance (Junction to Ambient)	R _{θJA}	417	°C
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Notes: 1. Valid provided that electrodes are kept at ambient temperature

PARAMETER				SYMBOL	BC817-16	BC817-25	BC817-40	UNIT
Collector-Base Breakdown Voltage		I _C = 10μA	I _E = 0	V _{(BR)CBO}	50			V
Collector-Emitter Breakdown Voltage		I _C = 10mA	I _B = 0	V _{(BR)CEO}	45			V
Emitter-Base Breakdown Voltage		I _E = 1μA	I _C = 0	V _{(BR)EBO}	5			V
Collector Cut-off Current		V _{CB} = 45V	I _E = 0	I _{CBO}	0.1			μA
Emitter Cut-off Current		V _{EB} = 4V	I _C = 0	I _{EBO}	0.1			μA
Collector-Emitter Saturation Voltage		I _C = 500mA	I _B = 50 mA	V _{CE(sat)}	0.7			V
Base-Emitter Saturation Voltage		I _C = 500mA	I _B = 50 mA	V _{BE(sat)}	1.2			V
Transition Frequency		V _{CE} = 5V	I _C = 10mA	f _T	100			MHz
Junction Capacitance		V _{CB} =10V	f= 1.0MHz	C _{CBO}	10			pF
DC Current Gain		V _{CE} = 1V	I _C = 100mA	h _{FE}	100	400	600	
		V _{CE} = 1V	I _C = 100mA		>40	160	250	
DC Current Gain				h _{FE}	100-250	160-400	250-600	
Min. DC Current Gain		Vce=1V	Ic=500mA	h _{FE}	40			

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RATINGS AND CHARACTERISTICS CURVES

($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Typical Pulsed Current Gain VS.

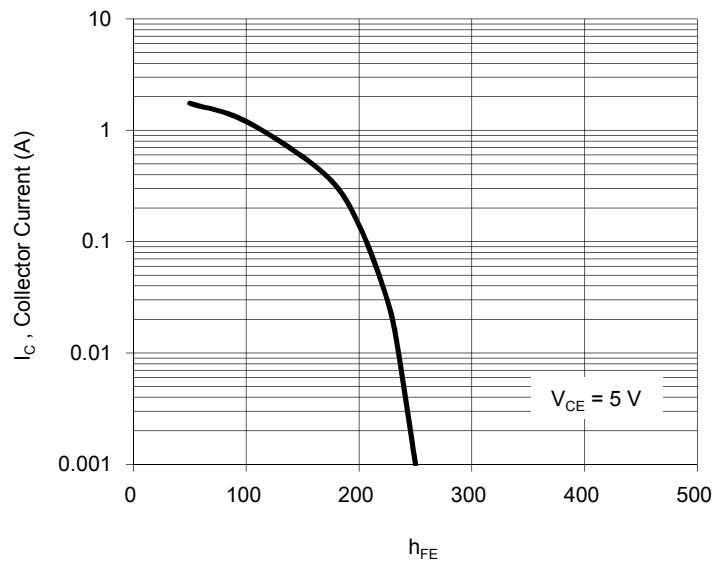


Fig. 2 Collector-Emitter Saturation Voltage VS. Collector Current

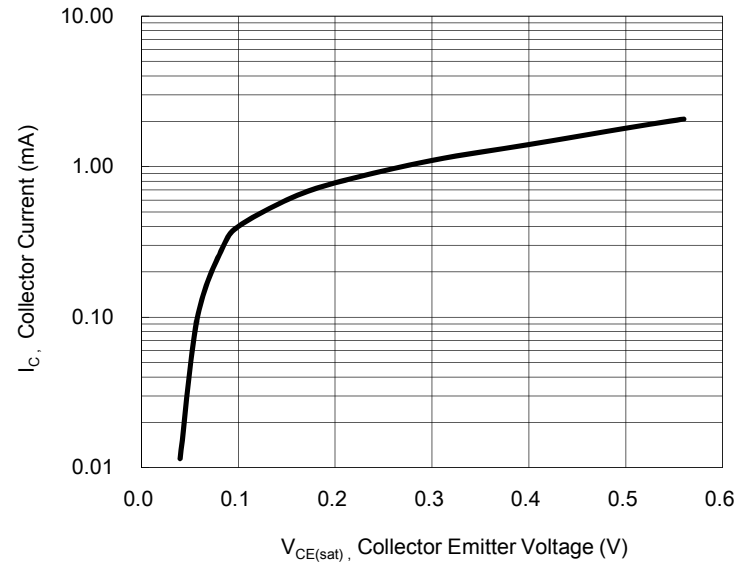


Fig. 3 Base-Emitter Saturation Voltage VS. Collector Current

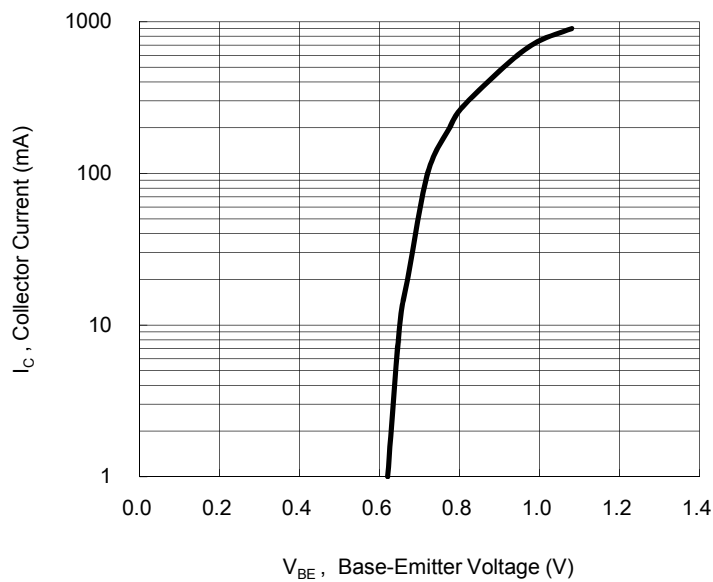


Fig. 4 Base-Emitter On Voltage VS. Collector Current

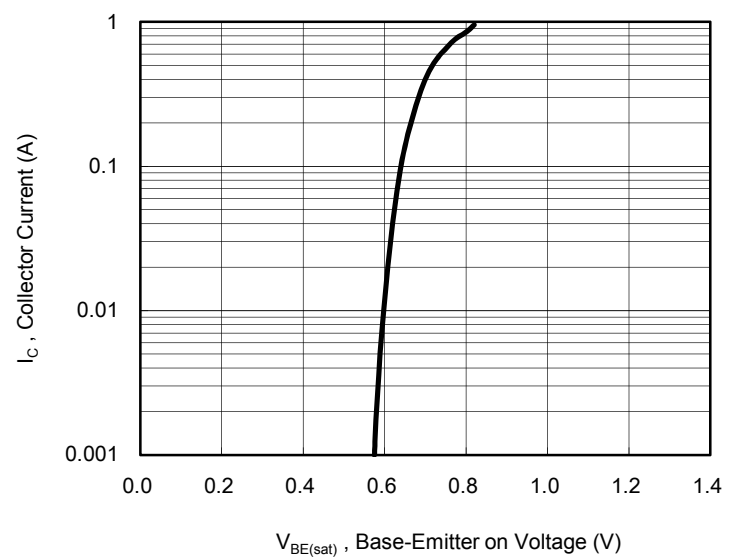
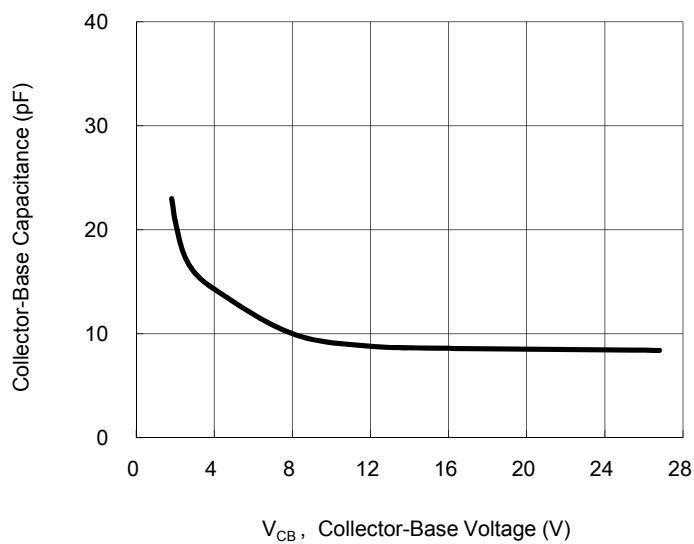


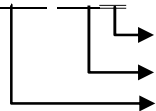
Fig. 5 Collector-Base Capacitance VS. Collector-Base Voltage



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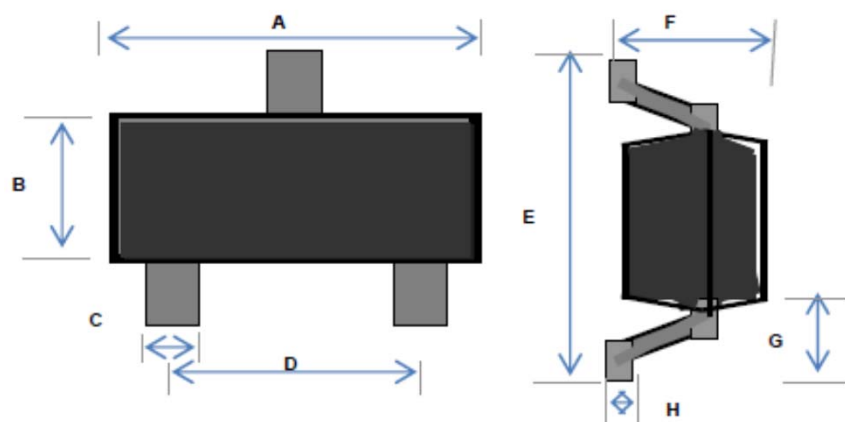
ORDER INFORMATION (EXAMPLE)

BC817-16 RFG



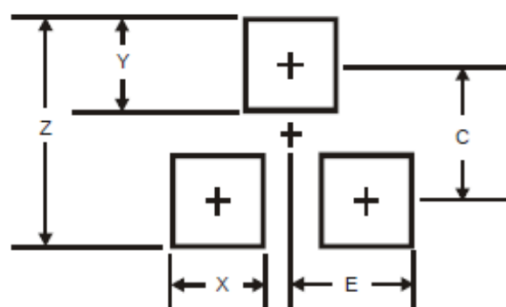
Green compound code
Packing code
Part no.

PACKAGE OUTLINE DIMENSIONS
SOT-23



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.10 REF		0.004 REF	

SUGGEST PAD LAYOUT



DIM	Unit (mm)	Unit (inch)
	TYP	TYP
Z	2.8	0.11
X	0.7	0.03
Y	0.9	0.04
C	1.9	0.07
E	1.0	0.04

MARKING

Part No.	Marking
BC817-16	6A
BC817-25	6B
BC817-40	6C

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