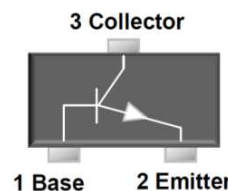


**Small Signal Product**

**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
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code



**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: 0.008gram (approximately)

**SOT-23**

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS** (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	P <sub>D</sub>	300	mW
Collector-Base Voltage	V <sub>CB0</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	500	mA
Thermal Resistance (Junction to Ambient)	R <sub>θJA</sub>	417	°C
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-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 <sub>C</sub> = 10μA I <sub>E</sub> = 0	V <sub>(BR)CBO</sub>	50			V
Collector-Emitter Breakdown Voltage I <sub>C</sub> = 10mA I <sub>B</sub> = 0	V <sub>(BR)CEO</sub>	45			V
Emitter-Base Breakdown Voltage I <sub>E</sub> = 1μA I <sub>C</sub> = 0	V <sub>(BR)EBO</sub>	5			V
Collector Cut-off Current V <sub>CB</sub> = 45V I <sub>E</sub> = 0	I <sub>CBO</sub>	0.1			μA
Emitter Cut-off Current V <sub>EB</sub> = 4V I <sub>C</sub> = 0	I <sub>EBO</sub>	0.1			μA
Collector-Emitter Saturation Voltage I <sub>C</sub> = 500mA I <sub>B</sub> = 50 mA	V <sub>CE(sat)</sub>	0.7			V
Base-Emitter Saturation Voltage I <sub>C</sub> = 500mA I <sub>B</sub> = 50 mA	V <sub>BE(sat)</sub>	1.2			V
Transition Frequency V <sub>CE</sub> = 5V I <sub>C</sub> = 10mA f= 100MHz	f <sub>T</sub>	100			MHz
Junction Capacitance V <sub>CB</sub> =10V f= 1.0MHz	C <sub>CBO</sub>	10			pF
DC Current Gain V <sub>CE</sub> = 1V I <sub>C</sub> = 100mA	h <sub>FE</sub>	100	400	600	
		>40	160	250	
DC Current Gain	h <sub>FE</sub>	100-250	160-400	250-600	
Min. DC Current Gain V <sub>ce</sub> =1V I <sub>c</sub> =500mA	h <sub>FE</sub>	40			

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**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

Fig.1 Typical Pulsed Current Gain VS.

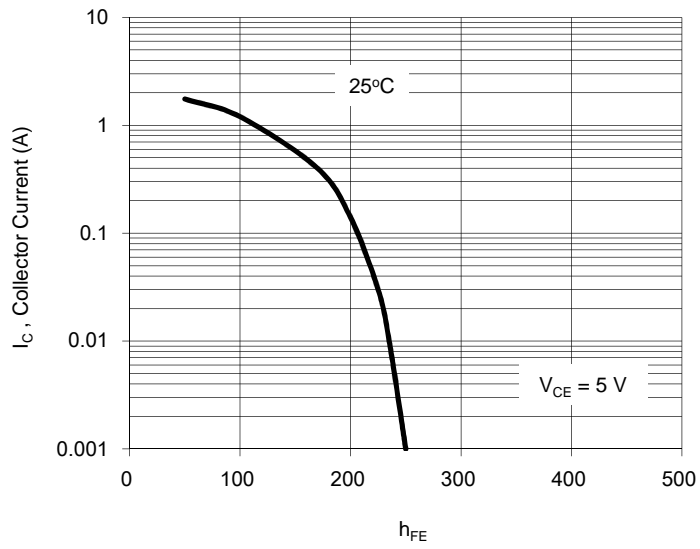


Fig. 2 Collector-Emitter Saturation Voltage VS. Collector Current

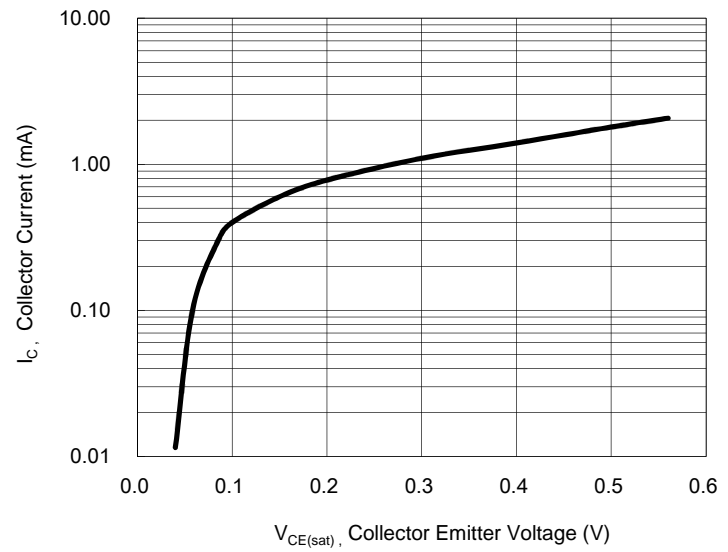


Fig. 3 Base-Emitter Saturation Voltage VS. Collector Current

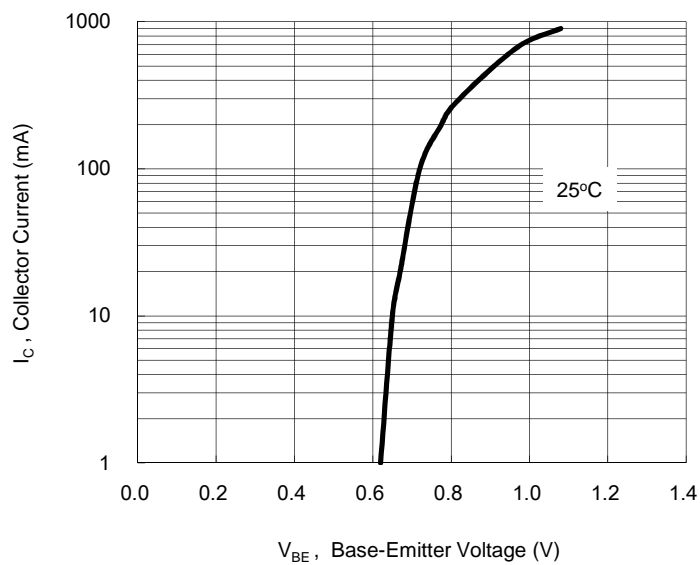


Fig. 4 Base-Emitter On Voltage VS. Collector Current

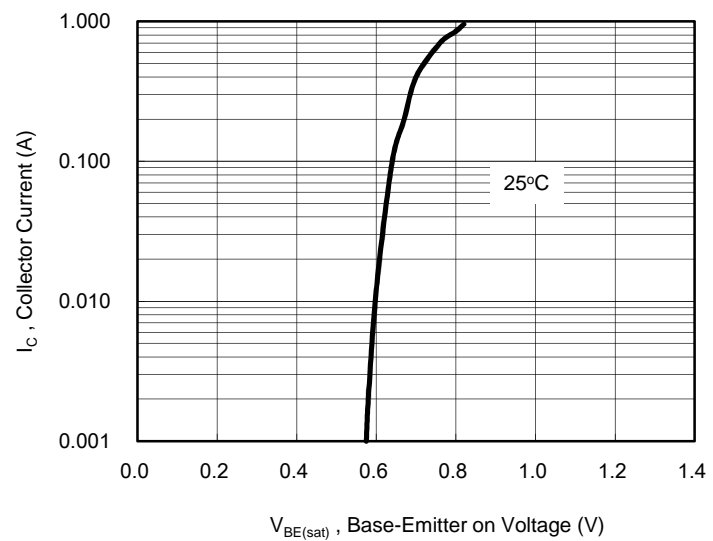
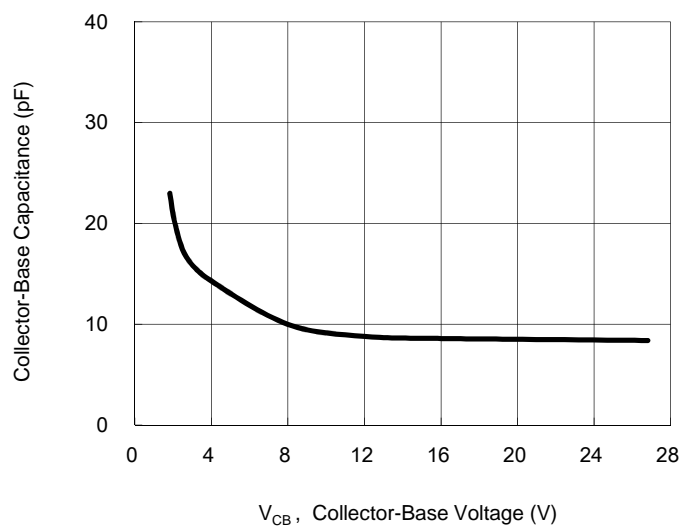


Fig. 5 Collector-Base Capacitance VS. Collector-Base Voltage



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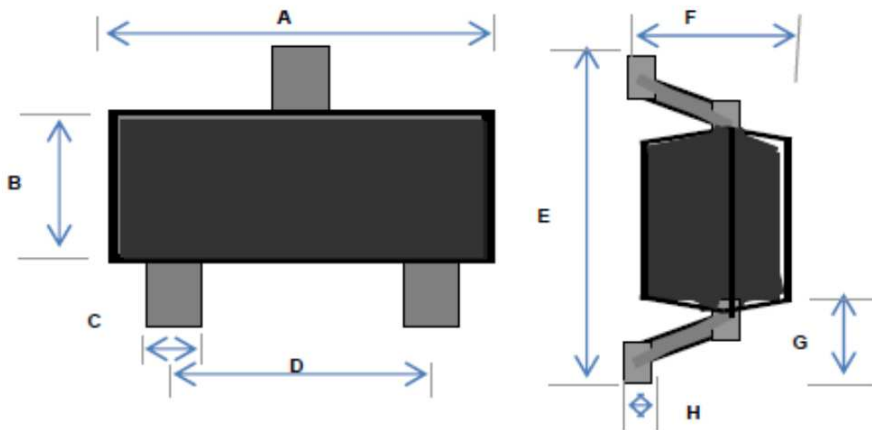
<b>ORDERING INFORMATION</b>					
<b>PART NO.</b>	<b>MANUFACTURE CODE</b>	<b>PACKING CODE</b>	<b>GREEN COMPOUND CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
BC817-16	(Note)	RF	G	SOT-23	3K / 7" Reel
BC817-25		RF	G	SOT-23	3K / 7" Reel
BC817-40		RF	G	SOT-23	3K / 7" Reel

Note: Manufacture special control, if empty means no special control requirement.

<b>EXAMPLE</b>					
<b>PREFERRED P/N</b>	<b>PART NO.</b>	<b>MANUFACTURE CODE</b>	<b>PACKING CODE</b>	<b>GREEN COMPOUND CODE</b>	<b>DESCRIPTION</b>
BC817-16 RFG	BC817-16		RF	G	Green compound
BC817-16-B0 RFG	BC817-16	B0	RF	G	Green compound
BC817-16-D0 RFG	BC817-16	D0	RF	G	Green compound

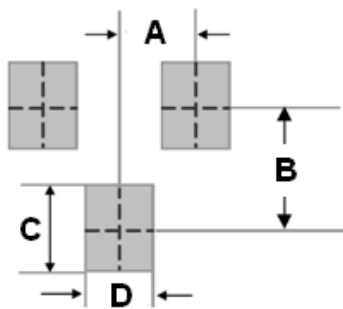
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**DIMENSIONS**



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	0.1 REF		0.004 REF	

**SUGGEST PAD LAYOUT**



DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
A	0.95	0.037
B	2.0	0.079
C	0.9	0.035
D	0.8	0.031

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