



## Description

This Bipolar Junction Transistor (BJT) is designed to meet the stringent requirements of Automotive Applications.

## Features

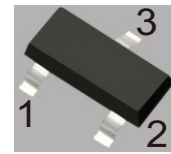
- $V_{CE0} > 45V$
- $I_C = 0.5A$  Continuous Collector Current
- $I_{CM} = 1A$  Peak Pulse Current
- Complementary PNP Types: BC807
- Ideally Suited for Automatic Insertion
- Epitaxial Planar Die Construction
- For switching and AF Amplifier Applications
- Totally Lead-Free & Fully RoHS Compliant (Note 1)
- Halogen and Antimony Free. "Green" Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 3)

## Mechanical Data

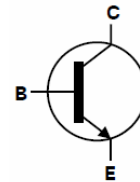
- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 ③

## PINNING

PIN	DESCRIPTION
1	BASE
2	EMITTER
3	COLLECTOR



Simplified outline SOT-23 and symbol



Device Symbol



Automotive Grade

## Maximum Ratings (TA = +25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current — Continuous	$I_C$	0.5	A
Collector Power Dissipation	$P_C$	0.31	W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-65~+150	°C

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  3. Automotive products are AEC-Q101 qualified and are PPAP capable.



**Electrical Characteristics**(TA=+25°C, unless other otherwise specified)

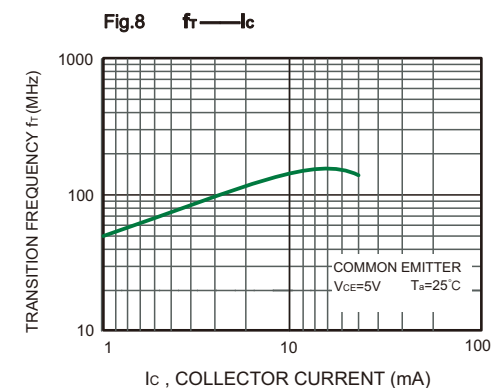
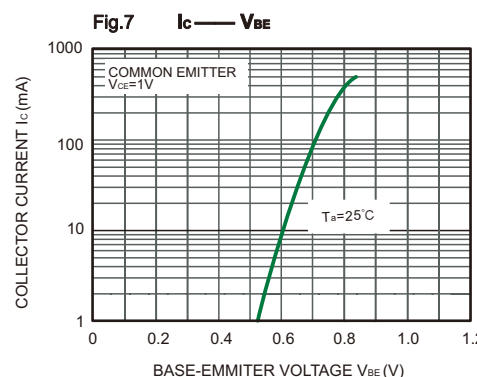
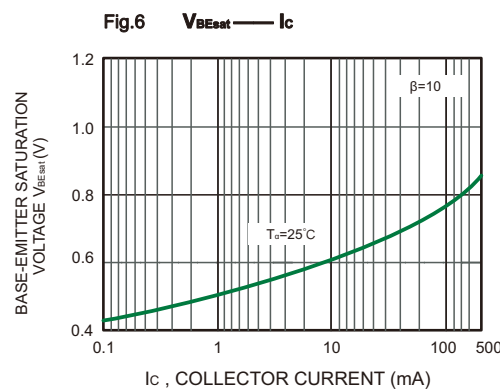
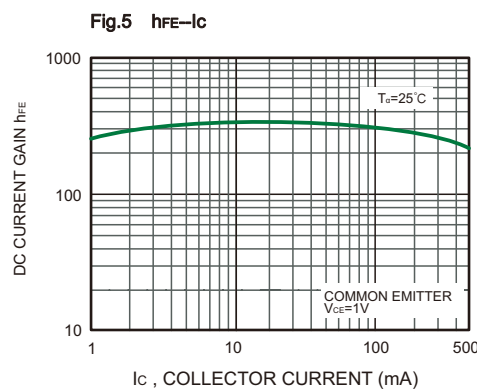
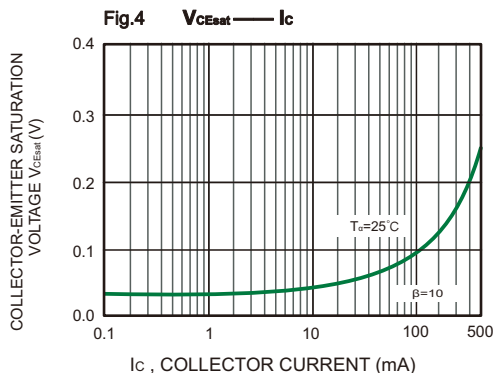
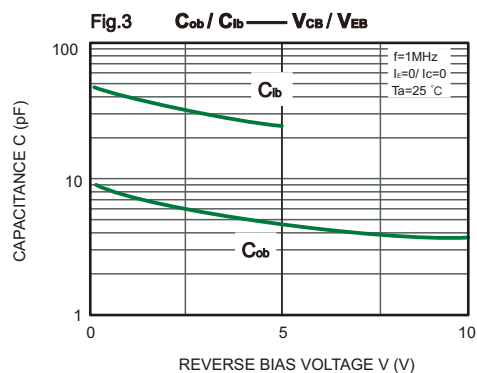
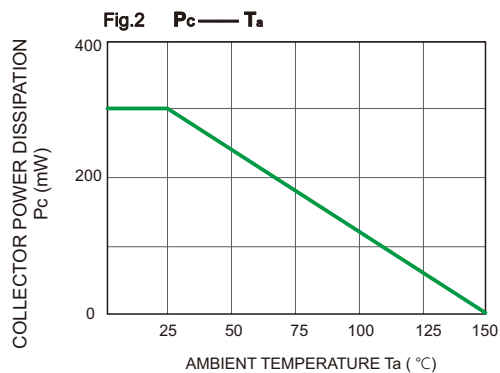
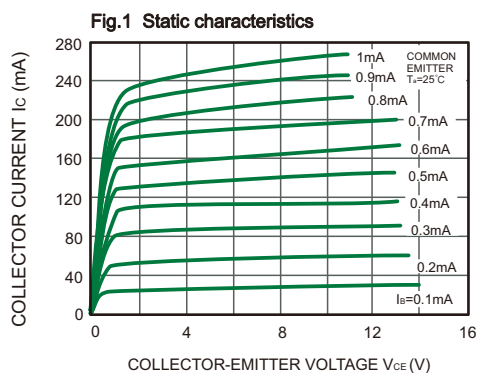
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{CBO}$	$I_C = 10\mu A, I_E = 0$	50			V
Collector-emitter breakdown voltage	$V_{CEO}$	$I_C = 10mA, I_B = 0$	45			V
Emitter-base breakdown voltage	$V_{EBO}$	$I_E = 1\mu A, I_C = 0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 45V, I_E = 0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			0.1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE} = 1V, I_C = 100mA$	100		600	
	$h_{FE(2)}$	$V_{CE} = 1V, I_C = 500mA$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$			0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$			1.2	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = 1V, I_C = 500mA$			1.2	V
Collector capacitance	$C_{ob}$	$V_{CB} = 10V, f=1MHz$		10		pF
Transition frequency	$f_T$	$V_{CE} = 5V, I_C = 10mA,$ $f=100MHz$	100			MHZ

**Classification of  $h_{FE}$**

Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B	6C

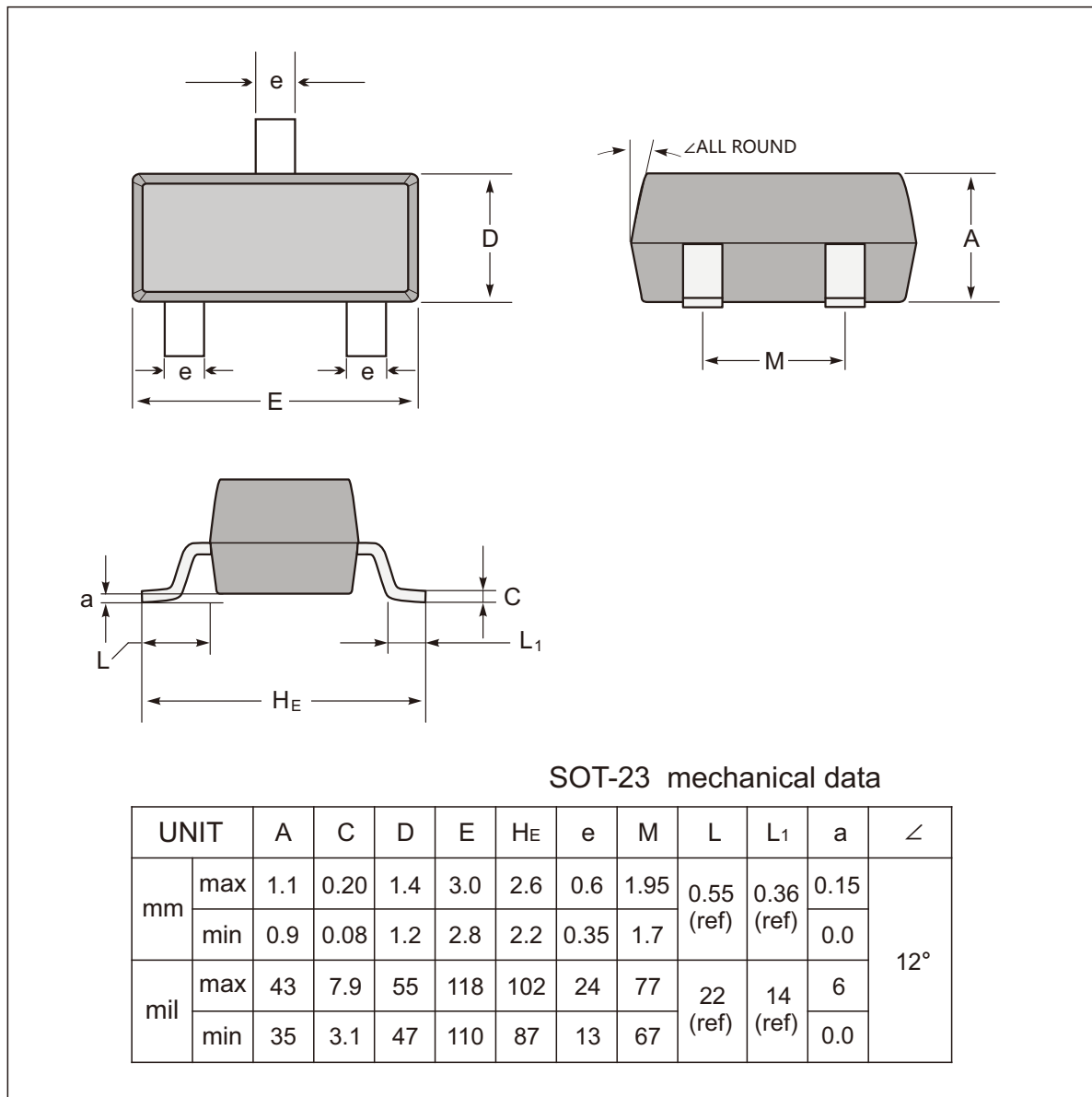


### TYPICAL CHARACTERISTICS

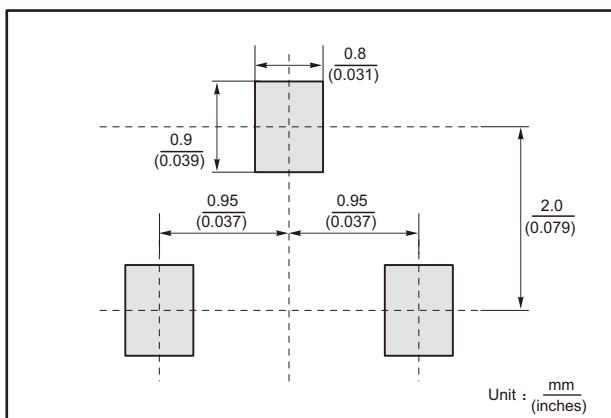




### SOT-23 Package Outline Dimensions



#### The recommended mounting pad size



#### Marking

Type number	Marking code
BC817-16	6A
BC817-25	6B
BC817-40	6C