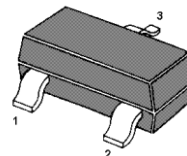


## TRANSISTOR (NPN)

### Features:

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation
- voltage Complementary types: BC807 (PNP)

### SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	50	V
$V_{CEO}$	Collector-Emitter Voltage	45	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	0.5	A
$P_C$	Collector Power Dissipation	0.3	W
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{CBO}$	$I_C=10\mu\text{A}$ , $I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{CEO}$	$I_C=10\text{mA}$ , $I_B=0$	45			V
Emitter-base breakdown voltage	$V_{EBO}$	$I_E=1\mu\text{A}$ , $I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=45\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}$ , $I_C=100\text{mA}$	100		600	
	$h_{FE(2)}$	$V_{CE}=1\text{V}$ , $I_C=500\text{mA}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$			0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=1\text{V}$ , $I_C=500\text{mA}$			1.2	V
Collector capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$		10		pF
Transition frequency	$f_T$	$V_{CE}=5\text{V}$ , $I_C=10\text{mA}$ $f=100\text{MHz}$	100			MHz

### CLASSIFICATION OF $h_{FE(1)}$

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

**Typical Characteristics**

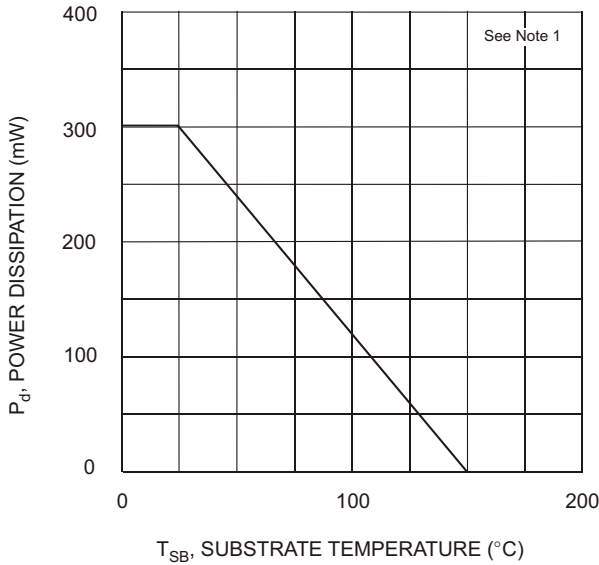


Fig. 1, Power Derating Curve

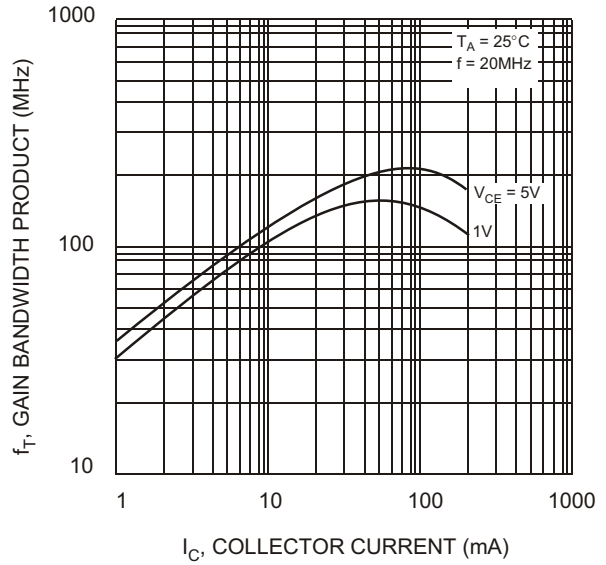


Fig. 2, Gain-Bandwidth Product vs. Collector Current

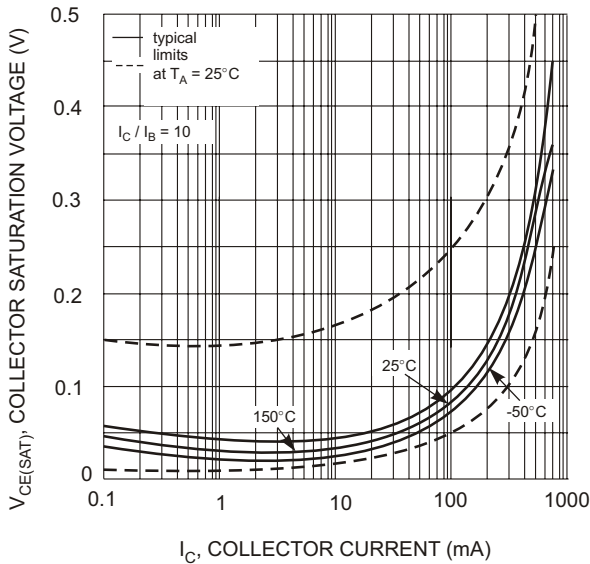


Fig. 3, Collector Sat. Voltage vs. Collector Current

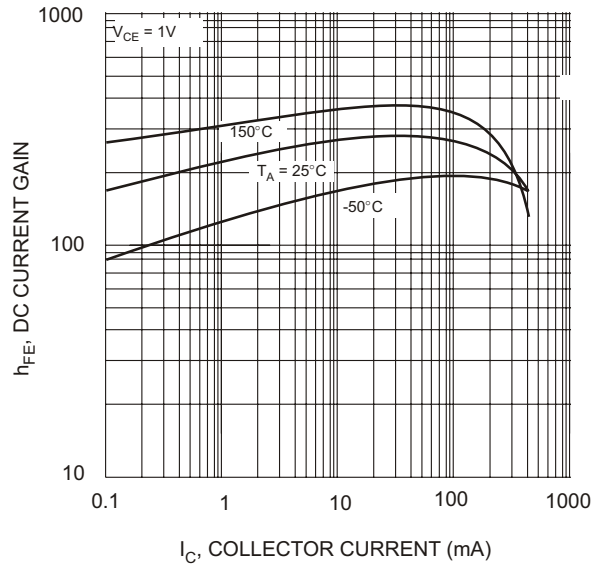


Fig. 4, DC Current Gain vs. Collector Current

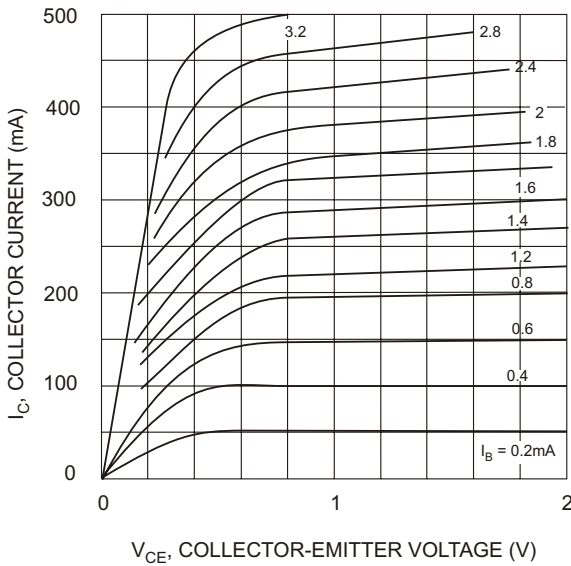


Fig. 5, Typical Emitter-Collector Characteristics

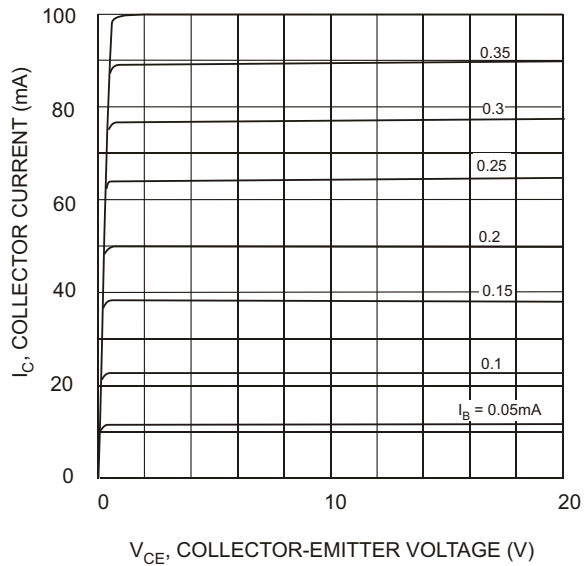
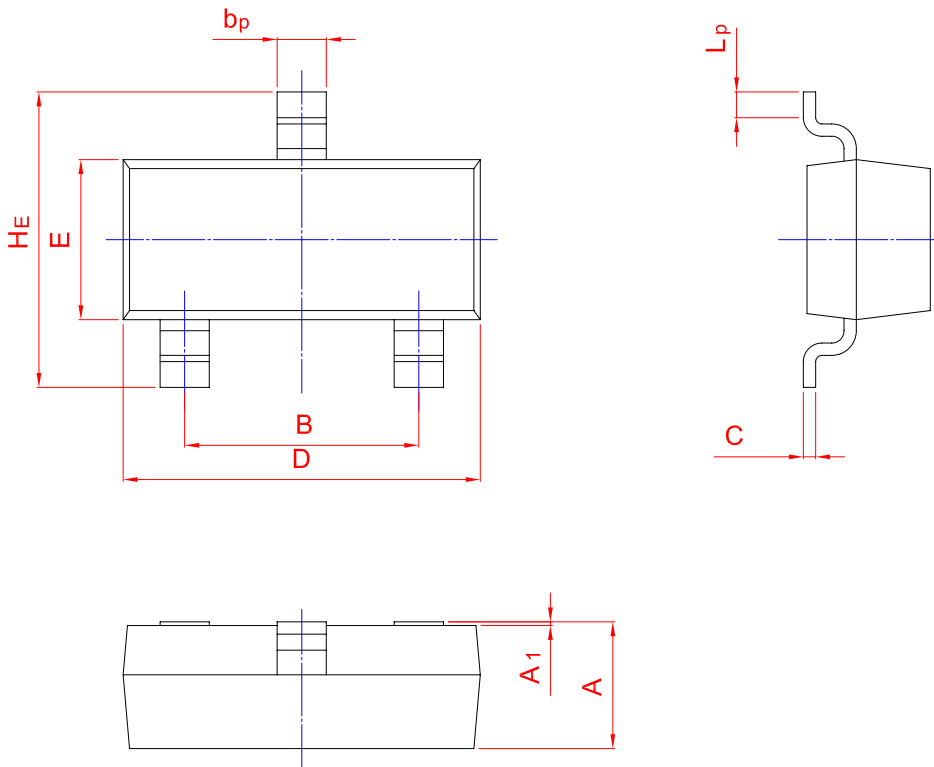
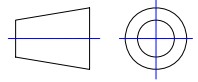


Fig. 6, Typical Emitter-Collector Characteristics

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b <sub>p</sub>	C	D	E	HE	A <sub>1</sub>	L <sub>p</sub>
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20