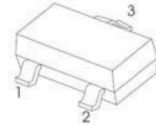


## TRANSISTOR (NPN)

### FEATURE

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

### SOT-23-3L



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	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

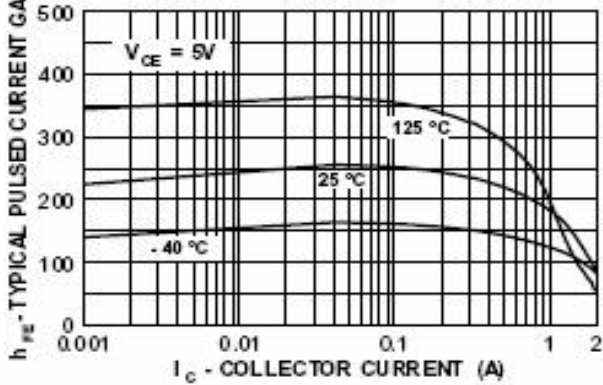
### CLASSIFICATION OF $h_{FE(1)}$

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

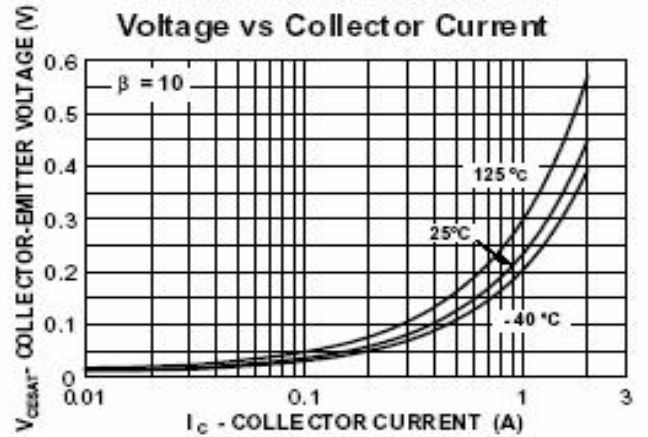


### Typical Characteristics

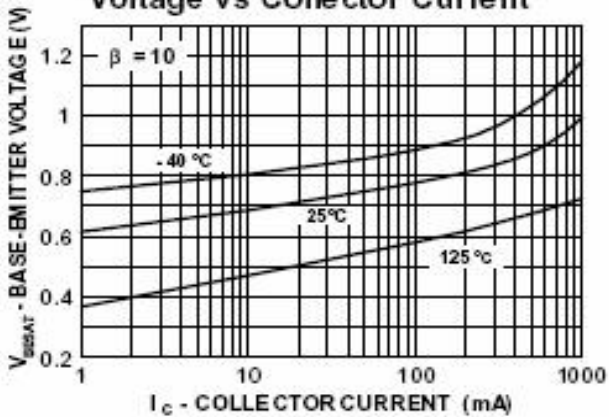
#### Typical Pulsed Current Gain vs Collector Current



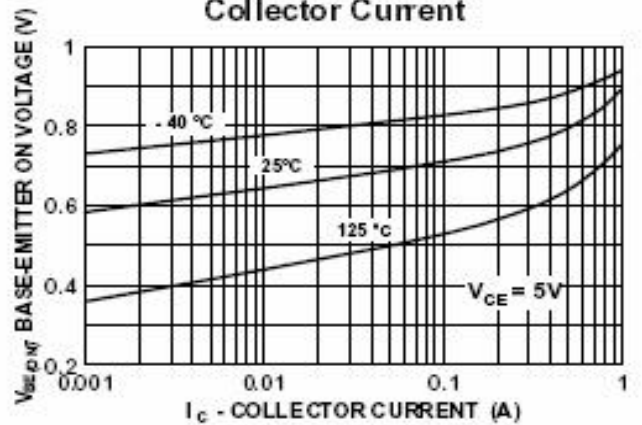
#### Collector-Emitter Saturation Voltage vs Collector Current



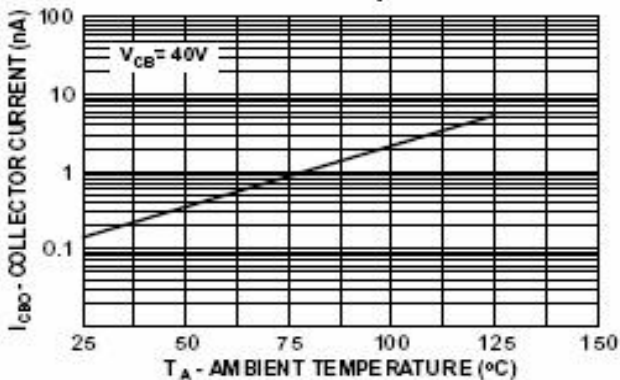
#### Base-Emitter Saturation Voltage vs Collector Current



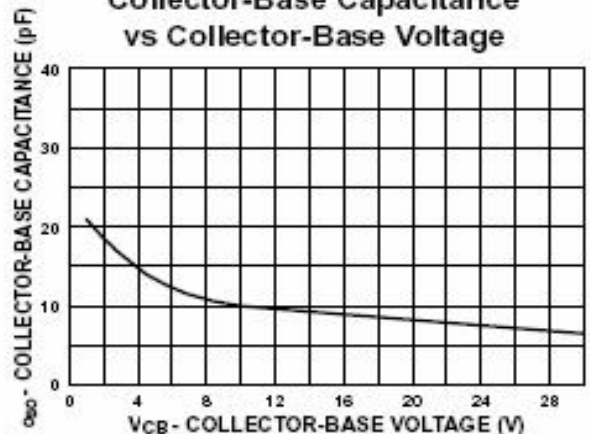
#### Base-Emitter ON Voltage vs Collector Current



#### Collector-Cutoff Current vs Ambient Temperature

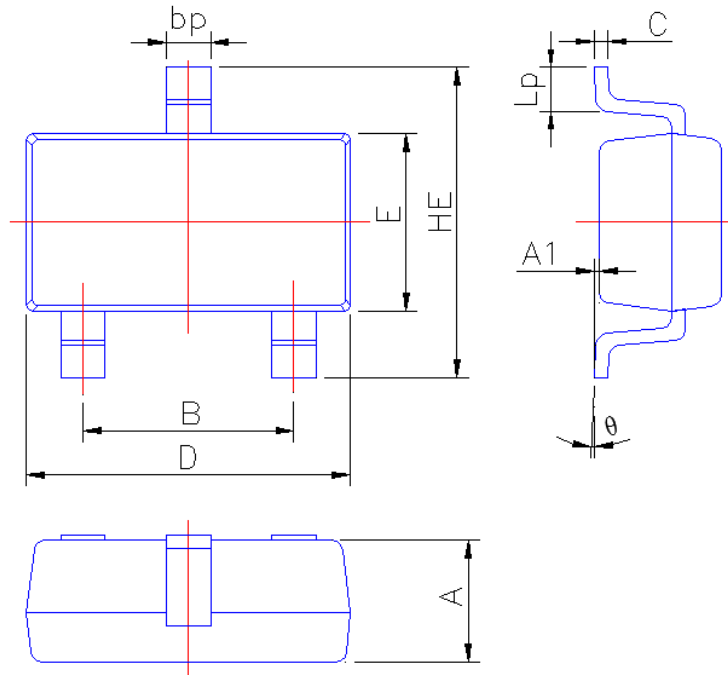


#### Collector-Base Capacitance vs Collector-Base Voltage





## SOT-23-3L Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	1.05	1.20
A1	0.010	0.100
B	1.80	2.00
bp	0.35	0.50
C	0.09	0.15
D	2.80	3.00
E	1.50	1.70
HE	2.60	3.00
Lp	0.25	0.55
$\theta$	2°	6°