

## SOT-23 Plastic-Encapsulate Transistors

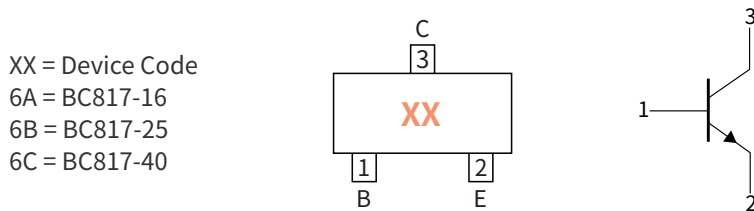
### Features

- Complementary to BC807
- Power dissipation of 300mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

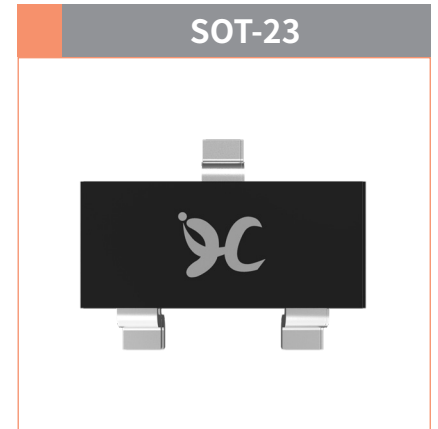
### Mechanical Data

- Case: SOT-23  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

### Function Diagram



**Collector-Base Voltage**  
VCBO 50V  
**Collector Current**  
0.5 Ampere



### Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	$V_{CBO}$	V	50
Collector-Emitter Voltage	$V_{CEO}$		45
Emitter-Base Voltage	$V_{EBO}$		5
Collector Current	$I_C$	A	0.5
Collector Power Dissipation	$P_C$	mW	300
Storage temperature	$T_{stg}$	°C	-55 ~+150
Junction temperature	$T_j$	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	417

### Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=100\mu A, I_E=0$	50	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=10mA, I_B=0$	45	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=100\mu A, I_C=0$	5	—
Collector-Base cut-off current	$I_{CBO}$	nA	$V_{CB}=45V, I_E=0$	—	100
Emitter-Base cut-off current	$I_{EBO}$		$V_{EB}=4.0V, I_C=0$	—	100
DC Current Gain	$h_{FE(1)}$	—	$I_C=100mA, V_{CE}=1.0V$	100	630
	$h_{FE(2)}$		$I_C=500mA, V_{CE}=1.0V$	40	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$	—	0.7
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C=500mA, I_B=50mA$	—	1.2

## ● Classification Of $h_{FE}$

RANK	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-630

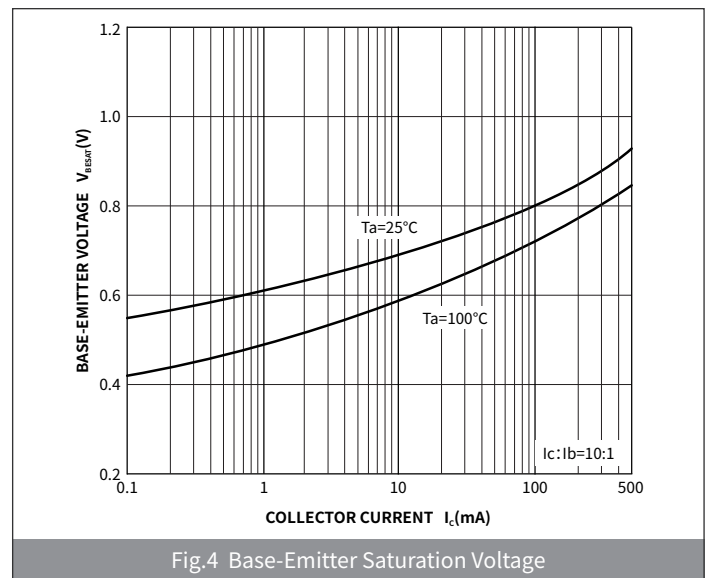
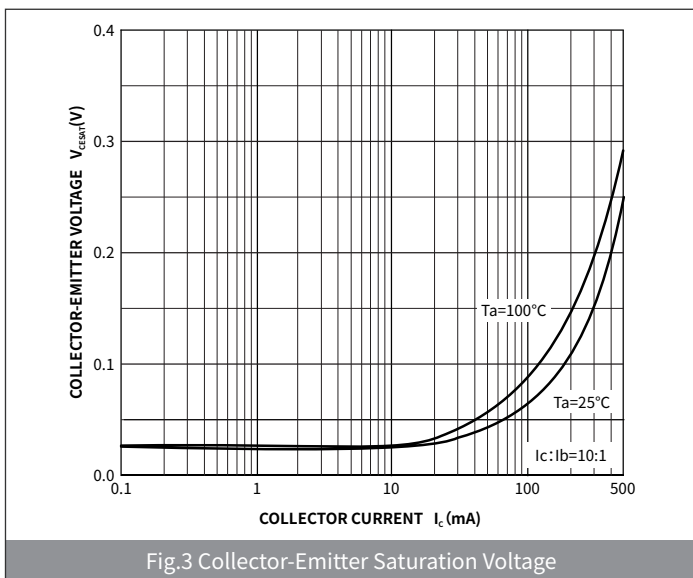
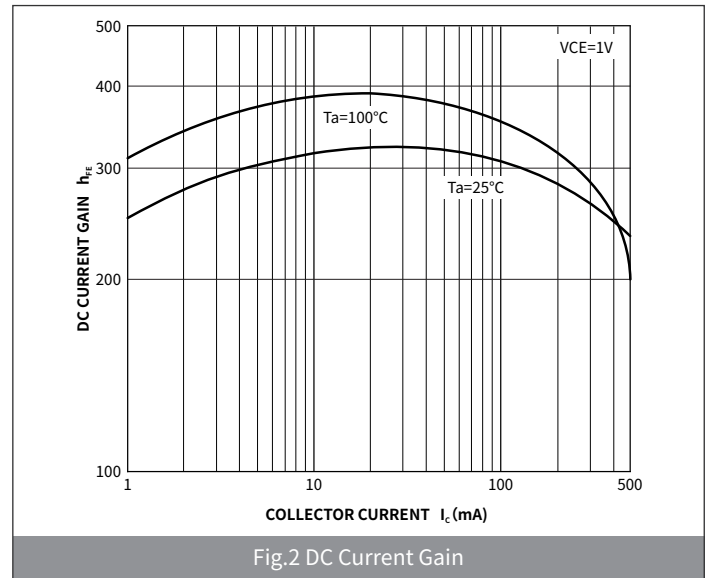
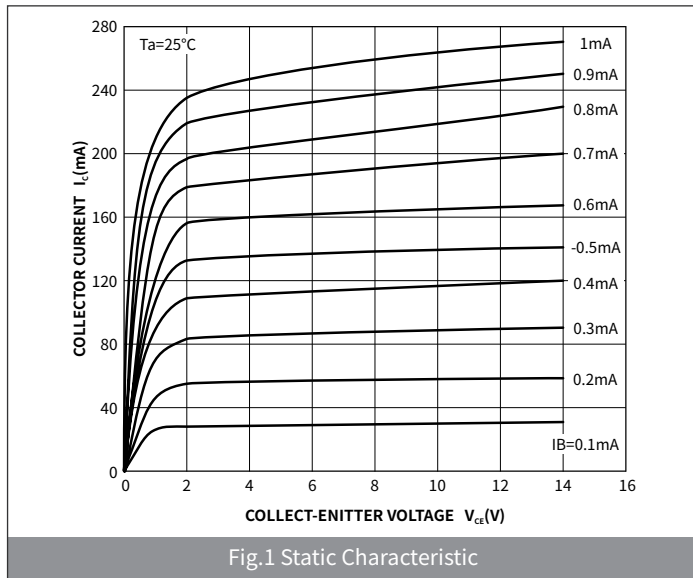
## ● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	$f_T$	$I_C=10\text{mA}, V_{CE}=5\text{V}, f=100\text{MHz}$	MHz	100	—

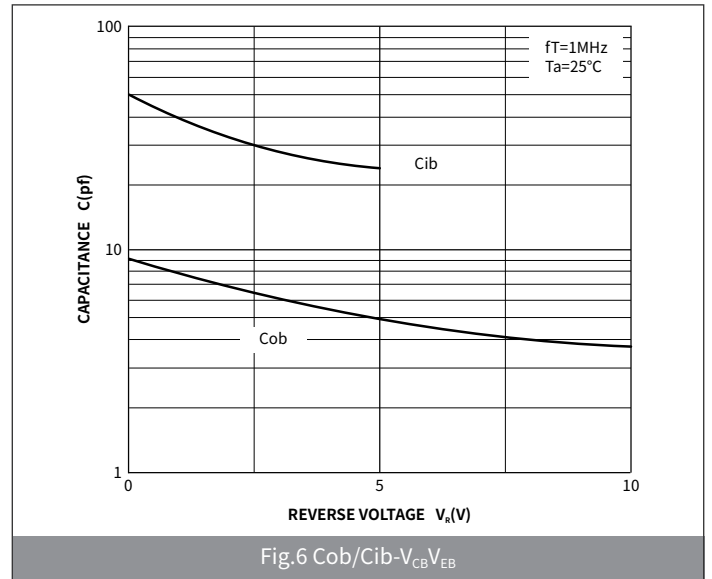
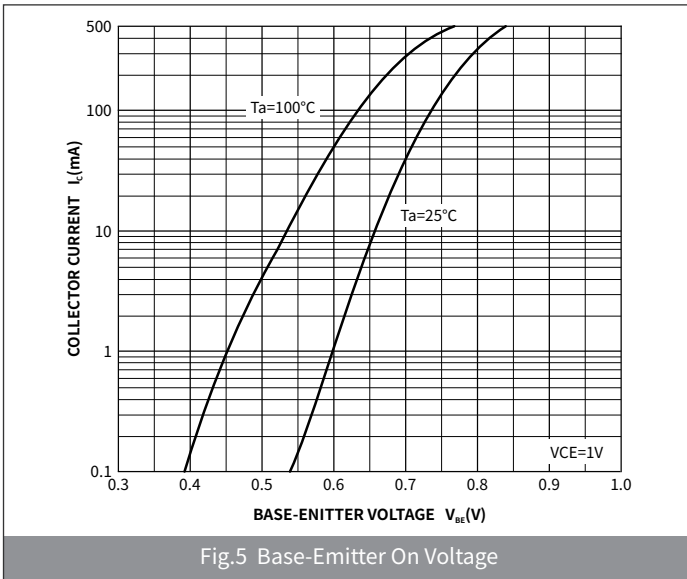
## ● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

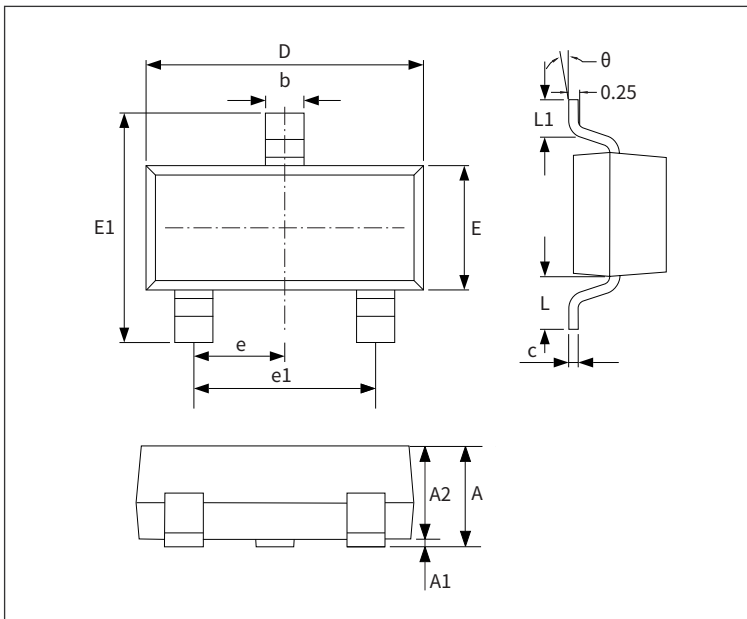
## ● Ratings And Characteristics Curves ( $T_a=25^\circ\text{C}$ Unless otherwise specified)



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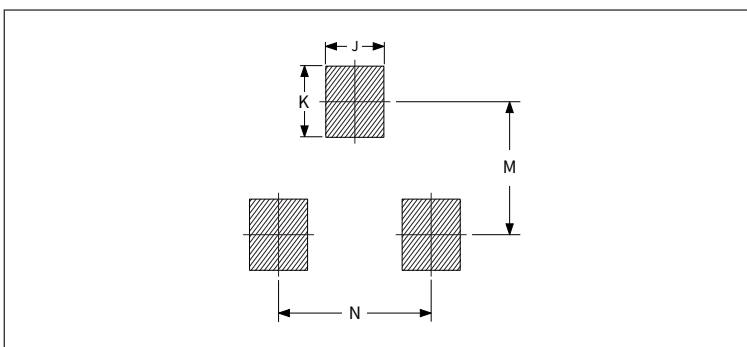


## ● Package Outline Dimensions (SOT-23)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
$\theta$	-	8°	-	8°

## ● Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074