

SOT-23 Plastic-Encapsulate Transistors

Features

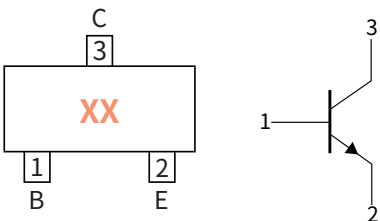
- Power dissipation of 300mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

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

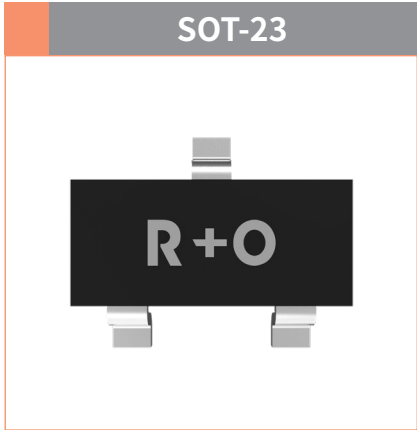
Function Diagram

XX = Device Code
6A=BC817-16,6B=BC817-25,6C=BC817-40
6E=BC818-16,6F=BC818-25,6G=BC818-40



Collector-Base Voltage
VCBO 50/30V

Collector Current
0.5 Ampere



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

PARAMETER	SYMBOL	UNIT	CONDLITIONS	VALUE
Collector-Base Voltage	V _{CBO}	V	BC817-16/25/40	50
			BC818-16/25/40	30
Collector-Emitter Voltage	V _{CEO}		BC817-16/25/40	45
			BC818-16/25/40	25
Emitter-Base Voltage	V _{EBO}		—	5.0
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 _{θJ-A}	°C /W	—	417

BC817 THRU BC818

NPN TRANSISTORS

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

PARAMETER	SYMBOL	UNIT	Condition		Min	Typ	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=10\mu A, I_E=0$	BC817-16/25/40	50	—	—
				BC818-16/25/40	30	—	—
$I_C=10mA, I_B=0$	BC817-16/25/40		45	—	—		
	BC818-16/25/40		25	—	—		
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=10\mu A, I_C=0$		5.0	—	—
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB}=50V, I_E=0$	BC817-16/25/40	—	—	100
			$V_{CB}=30V, I_E=0$	BC818-16/25/40	—	—	
Emitter-Base cut-off current	I_{EBO}		$V_{EB}=4.0V, I_C=0$		—	—	100
DC Current Gain	$h_{FE(1)}$	—	$I_C=100mA, V_{CE}=1.0V$	BC817-16/BC818-16	100	—	250
	$h_{FE(2)}$			BC817-25/BC818-25	160	—	400
	$h_{FE(3)}$			BC817-40/BC818-40	250	—	600
DC Current Gain	h_{FE}	—	$I_C=500mA, V_{CE}=1.0V$		40	—	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$		—	—	0.7
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		$I_C=500mA, I_B=50mA$		—	—	1.2
Base-Emitter On Voltage	$V_{BE(on)}$	V	$I_C=500mA, V_{CE}=1.0V$		—	—	1.2
Output Capacitance	V_{ob}	pF	$V_{CB}=10V, I_E=0, f=1MHz$		—	10	—

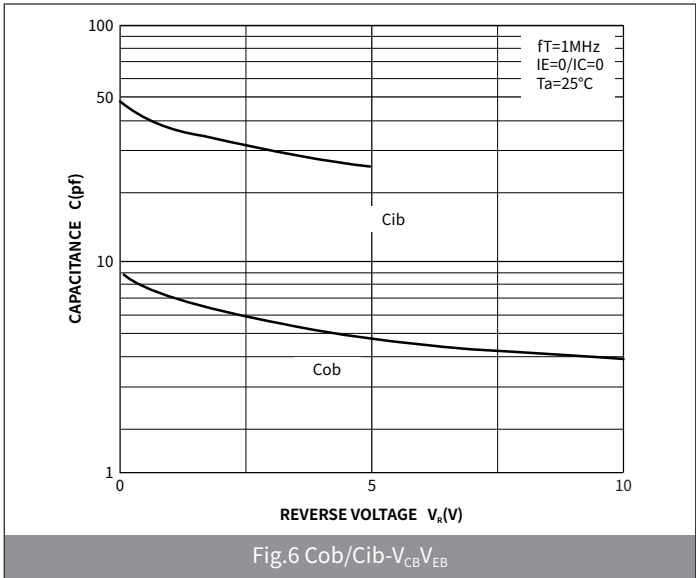
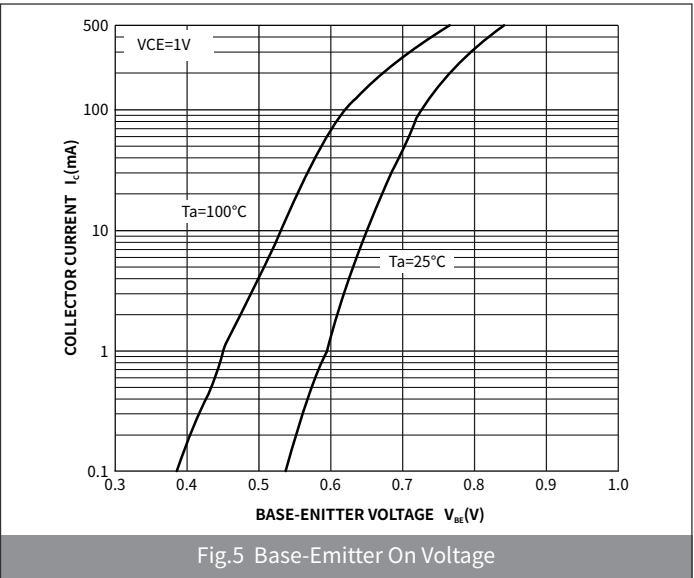
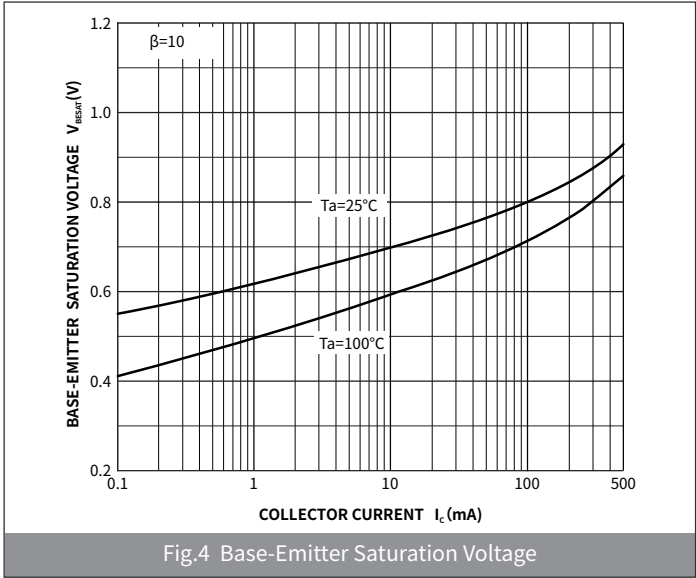
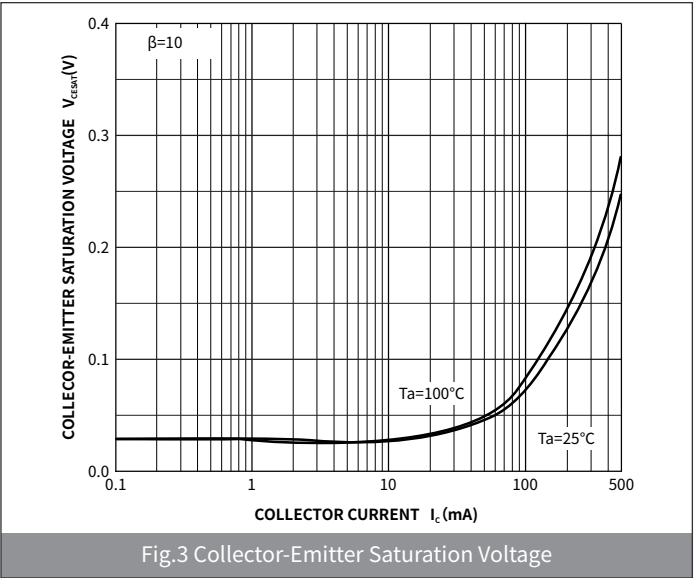
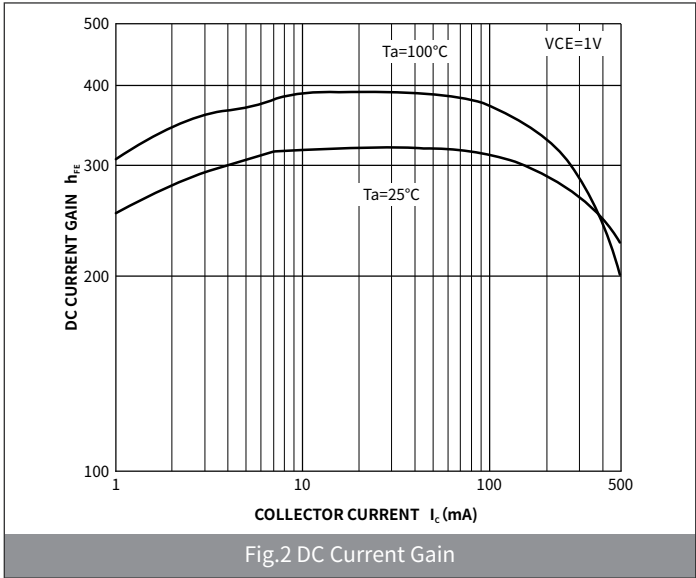
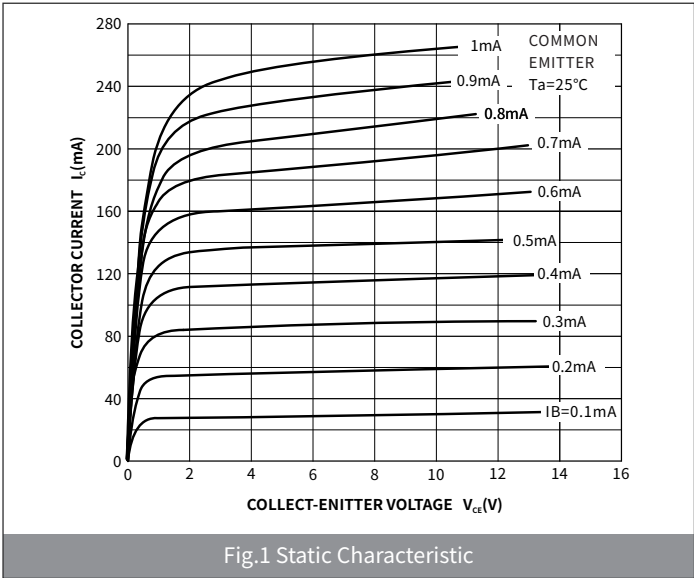
● Classification Of h_{FE}

RANK	BC817-16/BC818-16	BC817-25/BC818-25	BC817-40/BC818-40
Range	100-250	160-400	250-600

● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=10mA, V_{CE}=5.0V$	MHz	100	—

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

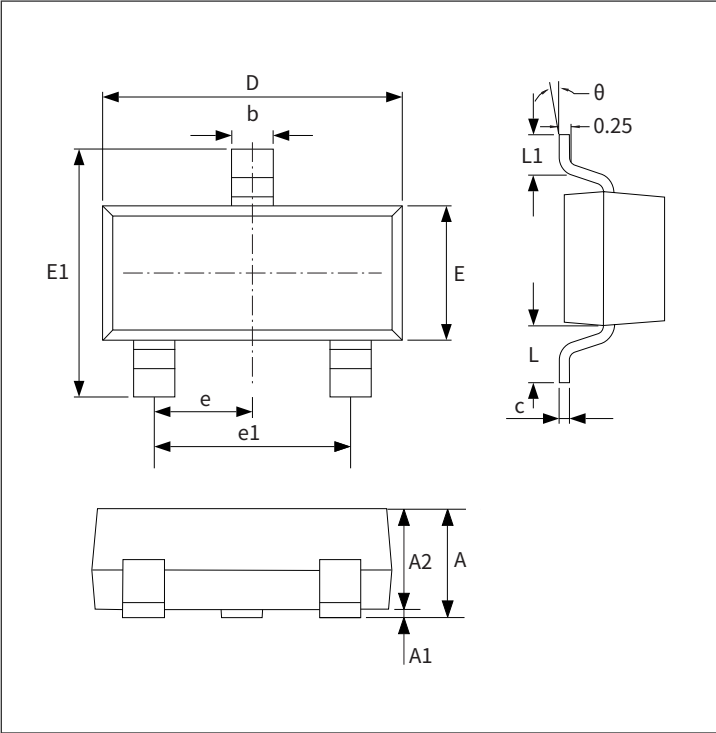


● Ordering Information

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

● Package Outline Dimensions (SOT-23)

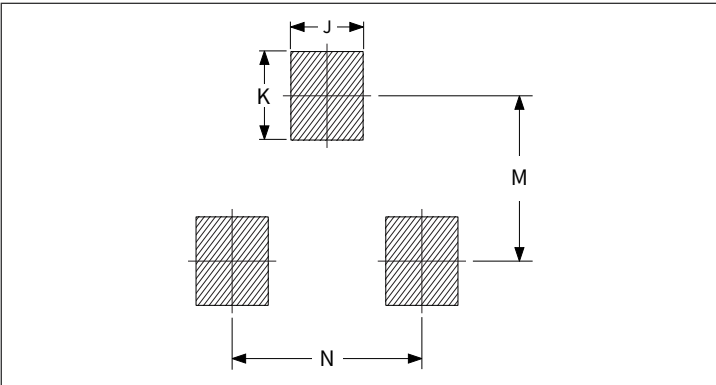
Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L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



The diagram illustrates the SOT-23 package outline with various dimensions labeled. The top view shows dimensions D (width), b (lead width), and E1 (body width). The side view shows dimensions E (height), e (lead thickness), e1 (lead width), L (lead length), L1 (lead tip length), and θ (lead angle). The bottom view shows dimensions A1 (lead height), A2 (lead thickness), and A (lead width).

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077



The diagram shows the suggested pad layout for the SOT-23 package. It includes dimensions J (pad width), K (pad height), M (pad spacing), and N (pad width).