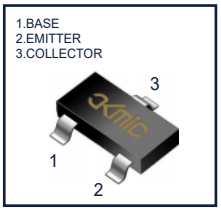
BC817-16,215

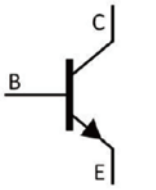
SOT-23 Plastic-Encapsulate Transistors (NPN)

Features

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



SOT23



Equivalent Circuit

Ordering information

Product ID	Pack	Marking	hFE(1)	Qty(PCS)
BC817-16,215	SOT-23	6A	100 ~ 250	3000
BC817-25		6B	160 ~ 400	
BC817-40		6C	250 ~ 600	

Absolute Maximum Ratings(T_A=25℃)

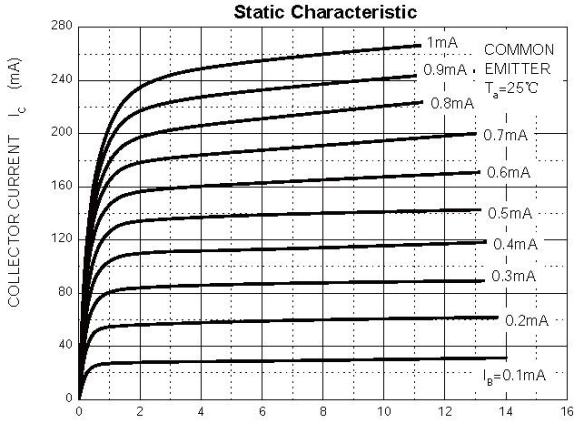
Symbol	Parameter	Value	Uniat
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	0.5	A
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	℃/W
T_J,T_{stg}	Operation Junction And Storage Temperature Range	-55 ~ +150	℃

Electrical Characteristics (T_A=25℃ unless otherwise specified)

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

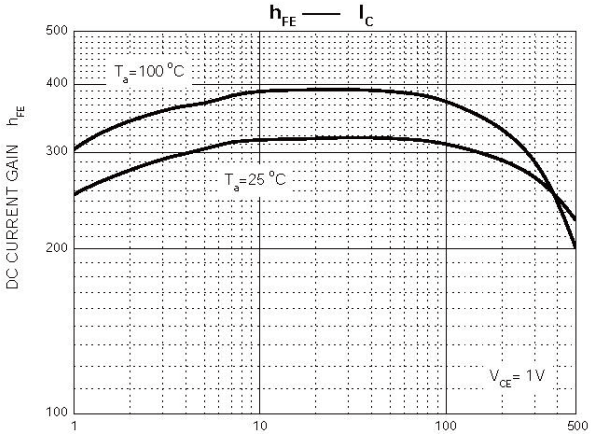
Typical Characteristics

Static Characteristic



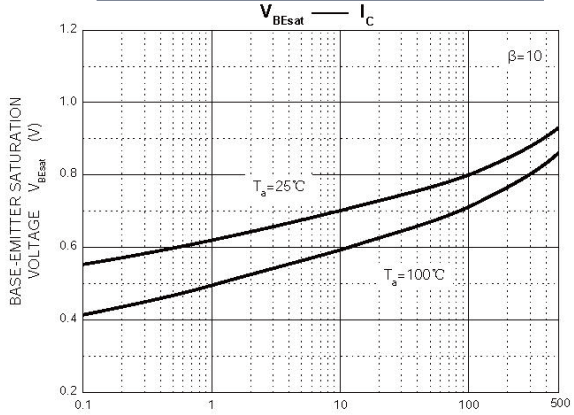
COLLECTOR-EMITTER VOLTAGE V_{CE}(V)

h_{FE} —— I_C



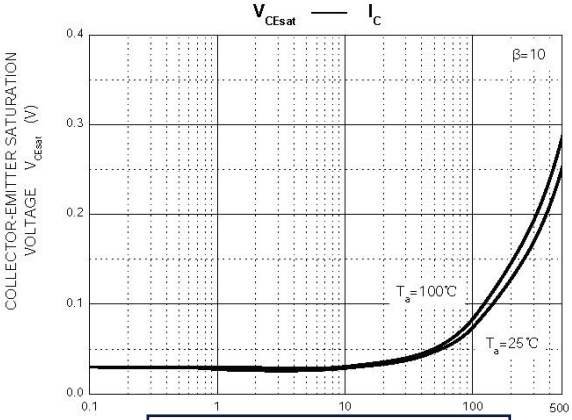
COLLECTOR CURRENT Ic(mA)

V_{BEsat} —— I_C



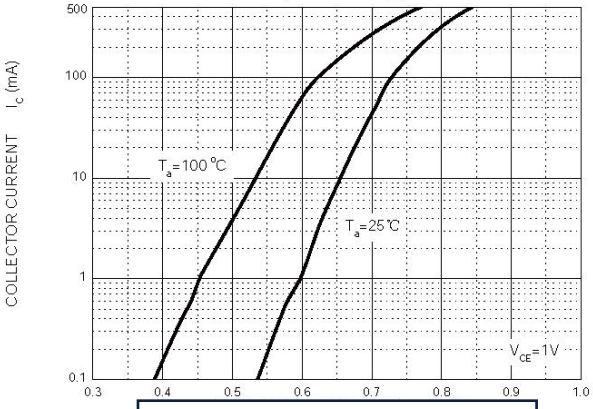
COLLECTOR CURRENT Ic(mA)

V_{CEsat} —— I_C



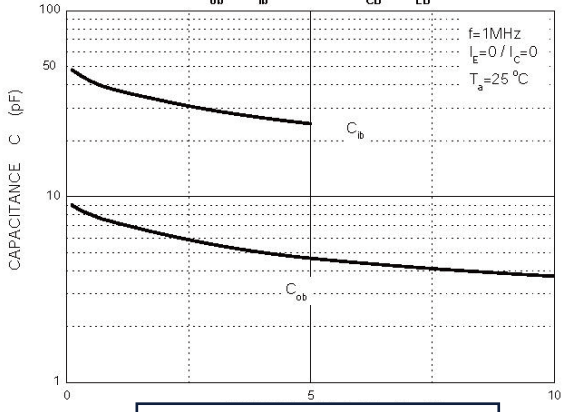
COLLECTOR CURRENT Ic(mA)

I_C —— V_{BE}



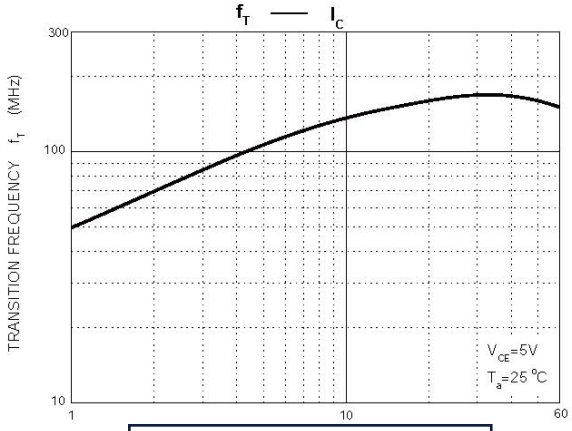
BESE-EMMITER VOLTAGE V_{BE}(V)

C_{ob} / C_{ib} —— V_{CB} / V_{EB}



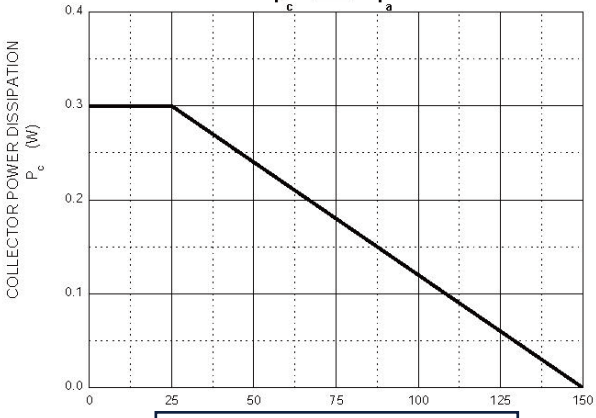
REVERSE VOLTAGE V(V)

f_T —— I_C



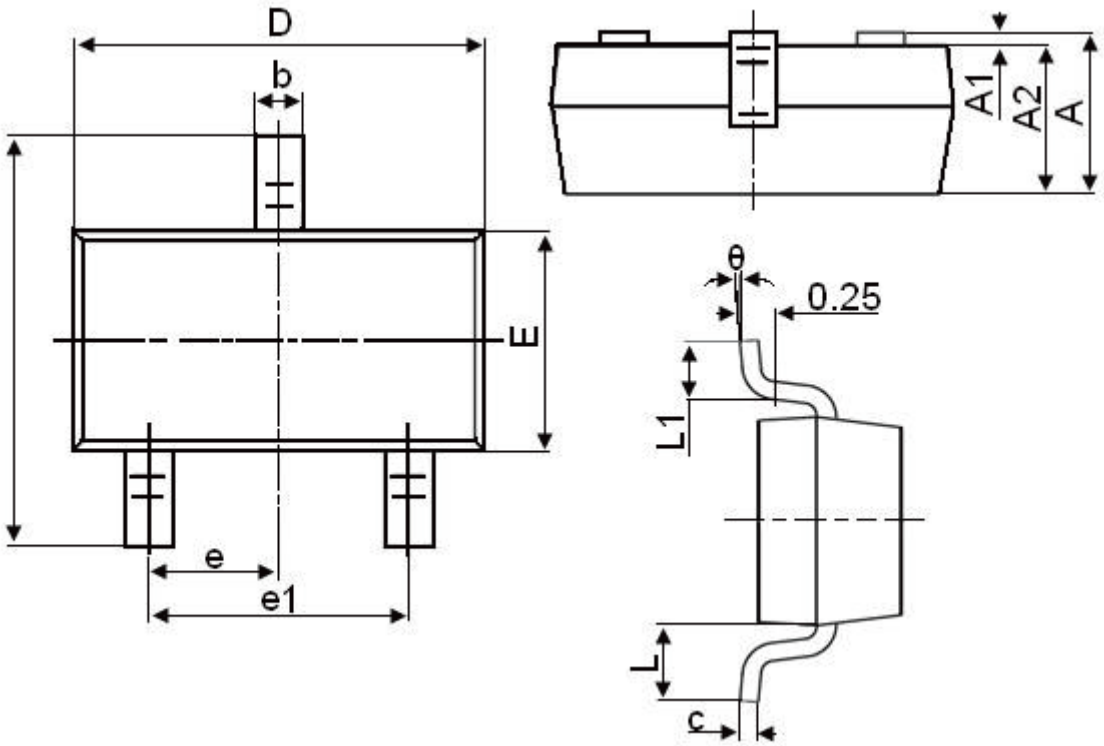
COLLECTOR CURRENT Ic(mA)

P_c —— T_a



AMBIENT TEMPERATURE Ta(°C)

SOT23 Package Outline Dimensions



Symbol	Dimensions in Millimeters	
	mm	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°