

Features

- For general AF applications.
- High collector current.
- High current gain.
- Low collector-emitter saturation voltage.

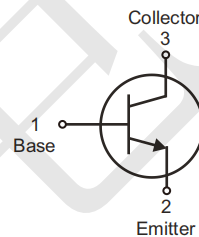
Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Weight: 0.0078 grams(approx.).

SOT23



Circuit Diagram



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base voltage	V _{CBO}	50	V
Collector-Emitter voltage	V _{CEO}	45	V
Emitter-Base voltage	V _{EB0}	5	V
Collector current-continuous	I _C	500	mA
Collector power dissipation	P _C	300	mW
Thermal resistance from junction to ambient	R _{θJA}	417	°C/W
Junction temperature range	T _J	150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

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

Classification of $h_{FE(1)}$

Rank	BC817-25
Range	160-400

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig.1 - Static Characteristic

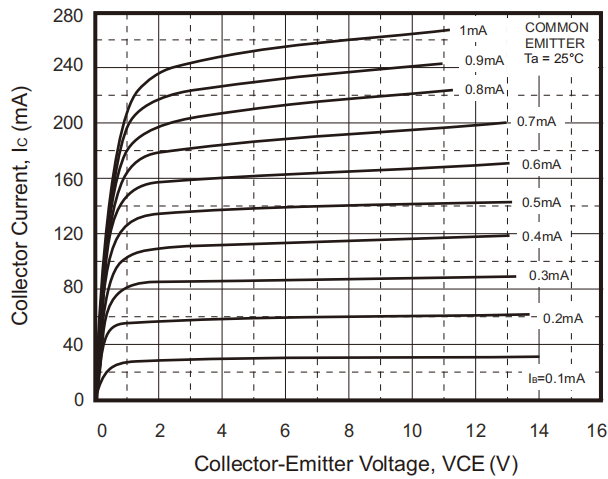


Fig.2 - $h_{FE} - I_C$

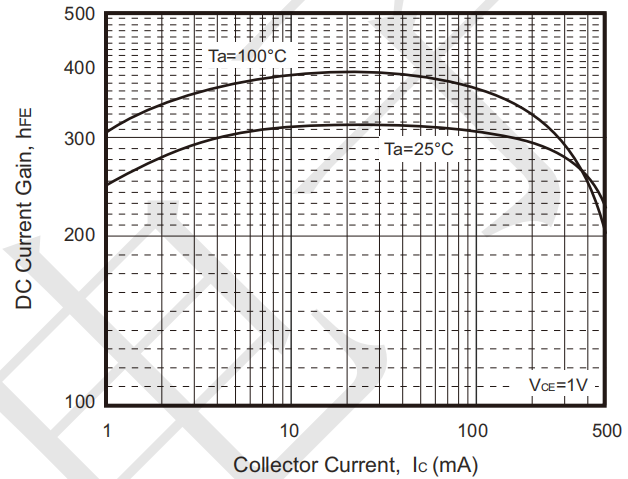


Fig.3 - $V_{BEsat} - I_C$

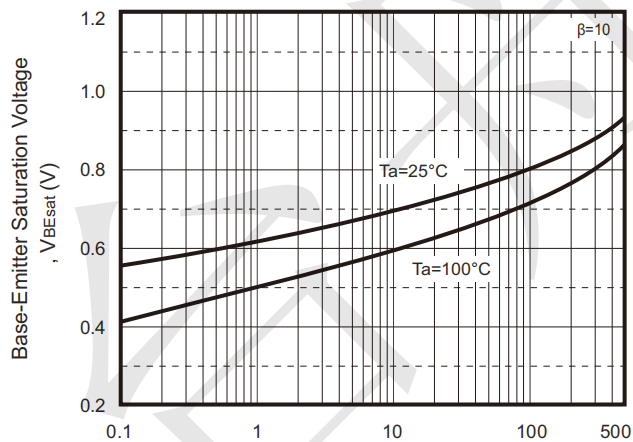
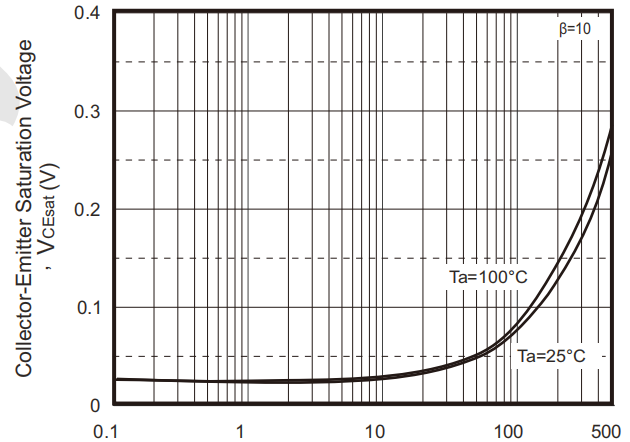


Fig.4 - $V_{CEsat} - I_C$



Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig.5 - I_C — V_{BE}

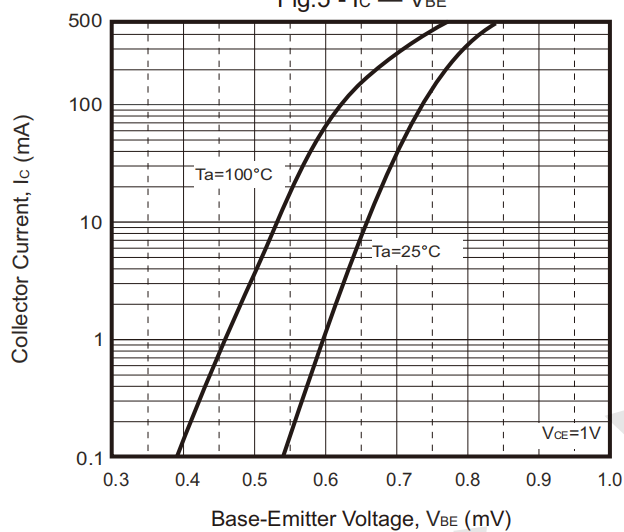


Fig.6 - C_{ob}/C_{ib} — V_{CB}/V_{EB}

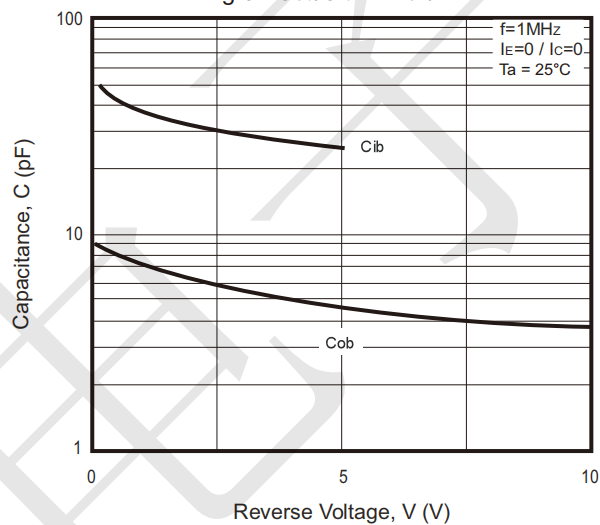


Fig.7 - f_T — I_C

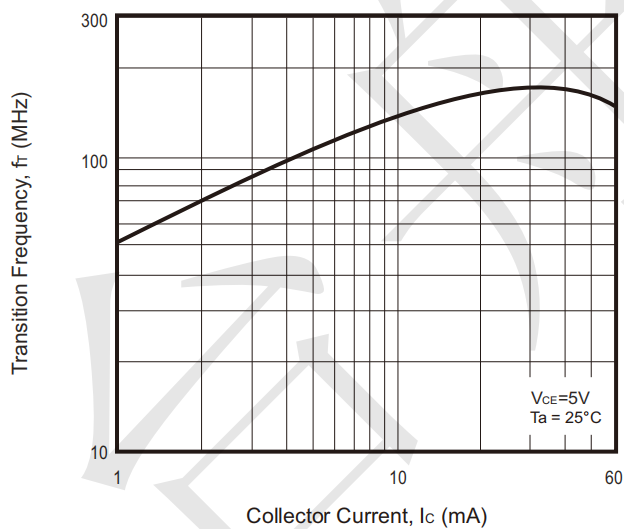
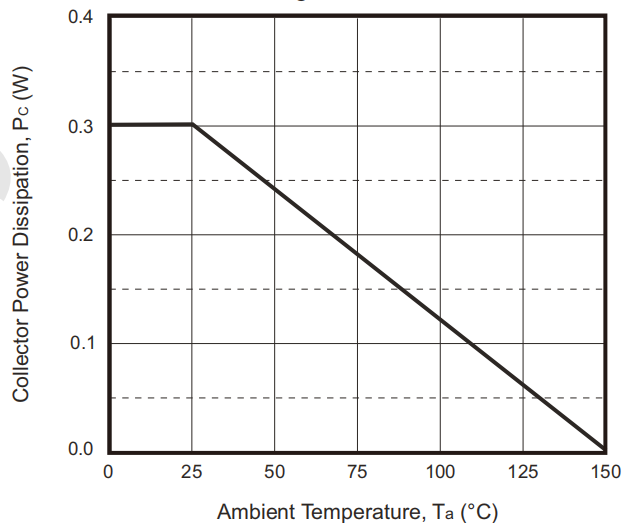
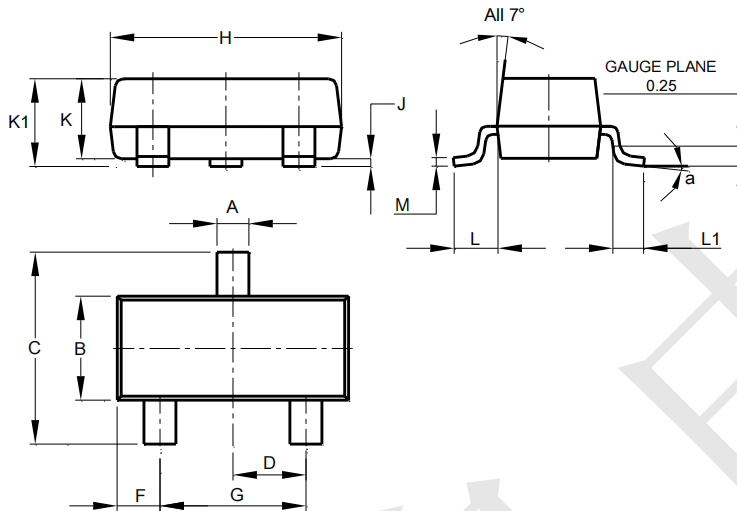


Fig.8 - P_C — T_A

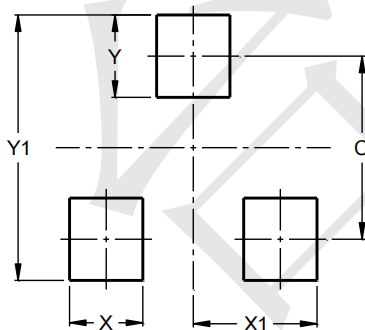


Outline Drawing - SOT23



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Land Pattern - SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9