



Small Signal Transistor

45V NPN
SOT23

Features

- Collector Current : $I_C = 500\text{mA}$
- Power Dissipation of 300mW
- High Stability and High Reliability

Mechanical Data

- Case: SOT23 Package
- Case Material: "Green" Molding Compound UL Flammability

Classification Rating 94V-0

- Halogen Free

- High reliability and automotive grade (AEC-Q101 qualified)

Note: Products with logo  or  are made by HY Electronic (Cayman) Limited.

Ordering Information

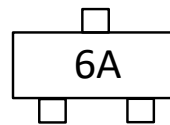
- Package :SOT23
- Reel Size :7 (inches)
- Quantity Per Reel :3,000 pcs
- Quantity One Box :24,000 pcs
- Quantity One Carton :120,000 pcs

Package Outline

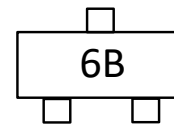


SOT23 Top View

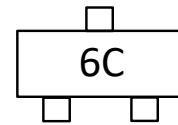
Marking Information



BC817-16

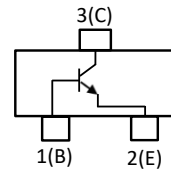


BC817-25



BC817-40

Device Schematic & PIN Configuration



Pin Assignment

Pin	Assignment
1	Base
2	Emitter
3	Collector

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

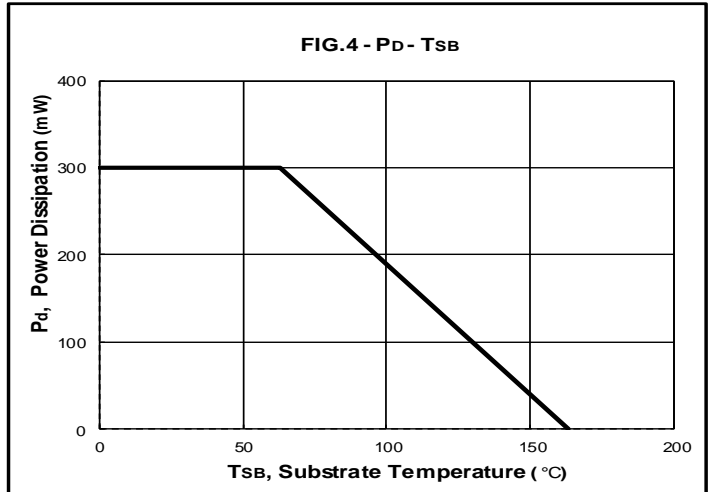
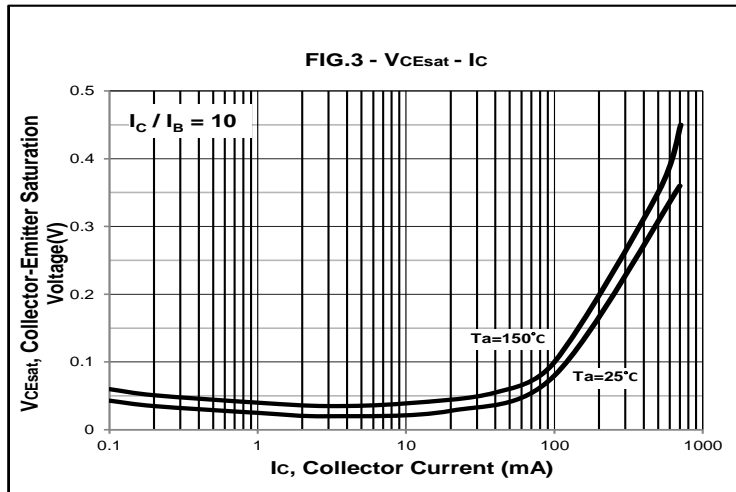
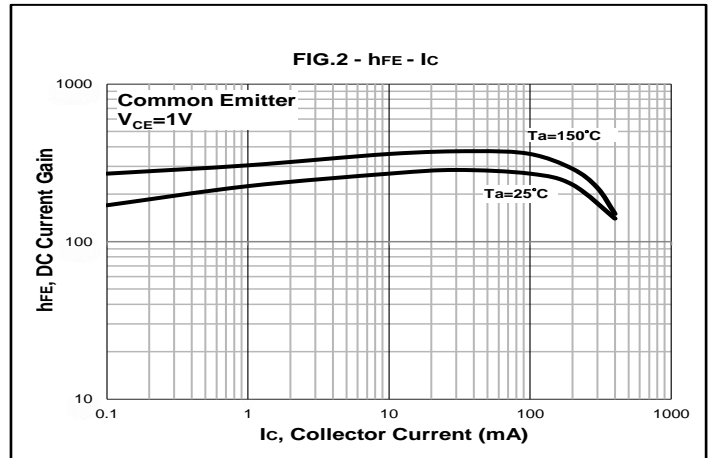
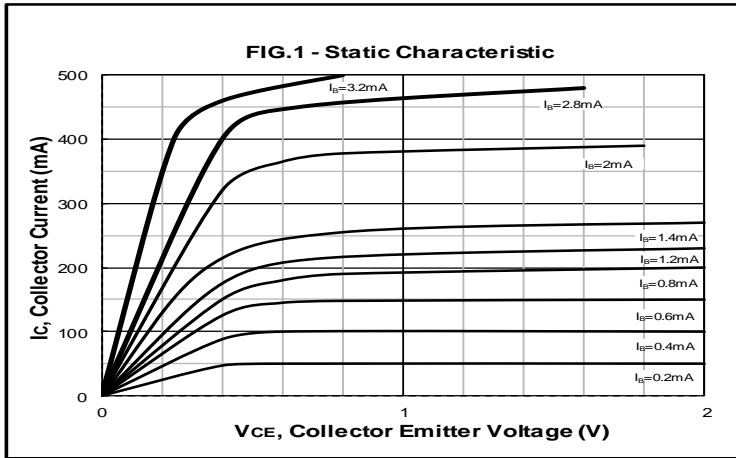
Parameter	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CE0}	45	V
Collector-Base Voltage	V_{CB0}	50	
Emitter-Base Voltage	V_{EB0}	5	
Collector Current-Continuous	I_C	500	mA
Total Device Dissipation	P_{tot}	300	mW
Junction Temperature Range	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics(@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Max	Unit	
Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}, I_B=0$	V_{CE0}	45	-	V	
Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}, I_E=0$	V_{CB0}	50	-		
Emitter-Base Breakdown Voltage	$I_E=1\mu\text{A}, I_C=0$	V_{EB0}	5	-		
Collector Cut-Off Current	$V_{CB}=45\text{V}, I_E=0$	I_{CB0}	-	0.1	μA	
Emitter Cut-Off Current	$V_{EB}=4\text{V}, I_C=0$	I_{EB0}	-	0.1		
DC Current Gain	$I_C=100\text{mA}, V_{CE}=1\text{V}$	$h_{FE(1)}$	BC817-16	100	250	-
			BC817-25	160	400	
$I_C=500\text{mA}, V_{CE}=1\text{V}$	$h_{FE(2)}$		40	-		
Collector-Emitter Saturation Voltage	$I_C=500\text{mA}, I_B=50\text{mA}$	$V_{CE(sat)}$	-	0.7	V	
Base-Emitter Saturation Voltage	$I_C=500\text{mA}, I_B=50\text{mA}$	$V_{BE(sat)}$	-	1.2	V	
Current Gain-Bandwidth Product	$I_C=10\text{mA}, V_{CE}=5\text{V}, f=100\text{MHz}$	f_T	100	-	MHz	

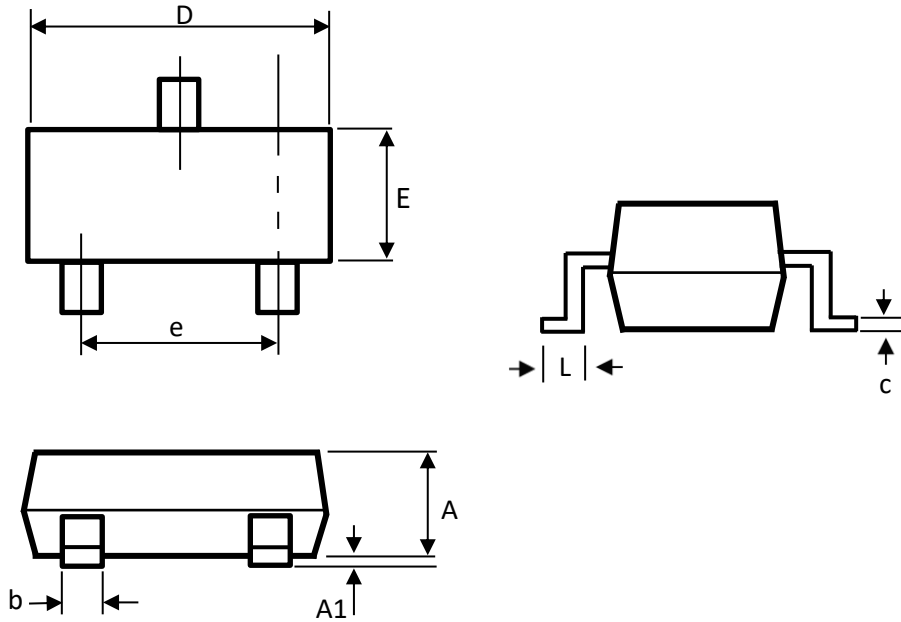


Rating and Characteristic Curves



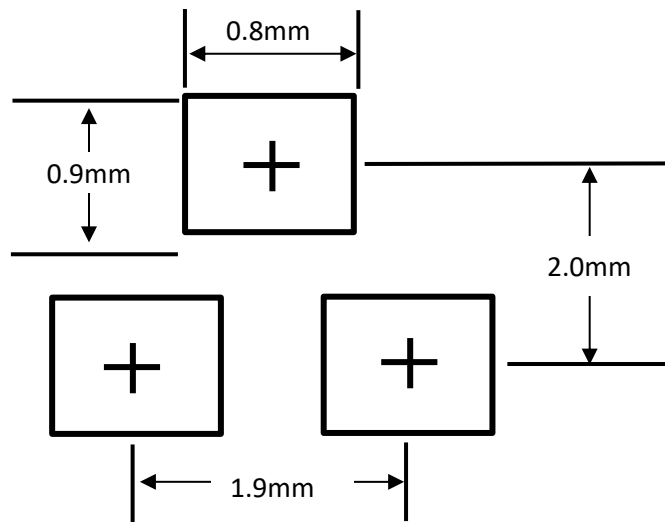


Package Outline Dimensions



SOT23 Package		
Dim	Min	Max
A	0.890	1.000
A1	0.013	0.100
b	0.370	0.510
c	0.085	0.180
D	2.800	3.000
E	1.200	1.400
e	1.780	2.050
L	0.450	0.610
All Dimensions in mm		

Suggested Soldering Pad Layout



Note:

- 1.The pad layout is for reference purposes only.
- 2.General tolerance $\pm 0.05\text{mm}$



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