

Small Signal Transistor

180V NPN
SOT23

Features

- Power Dissipation of 300mW
- High Stability and High Reliability
- Moisture Sensitivity Level 1

Mechanical Data

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

Classification Rating 94V-0

- Halogen Free

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

Ordering Information

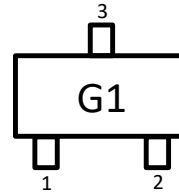
- Package :SOT23
- Reel Size :7 (inches)
- Quantity Per Reel :3,000 pcs
- Quantity One Box :45,000 pcs
- Quantity One Carton :180,000 pcs

Package Outline



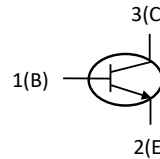
SOT23 Top View

Marking Information



"G1" = Product Type Marking Code

Device Schematic & PIN Configuration



Pin Assignment	
1	Base
2	Emitter
3	Collector

Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	180	V
Collector-Emitter Voltage	V_{CEO}	160	
Emitter-Base Voltage	V_{EBO}	6	
Collector Current-Continuous	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	416	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

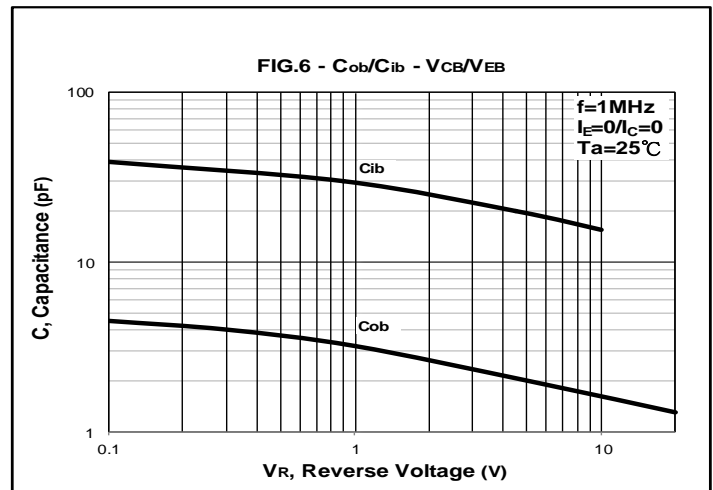
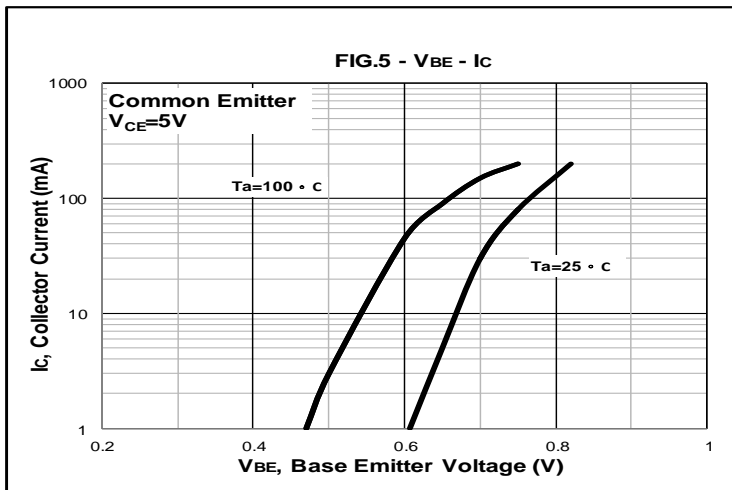
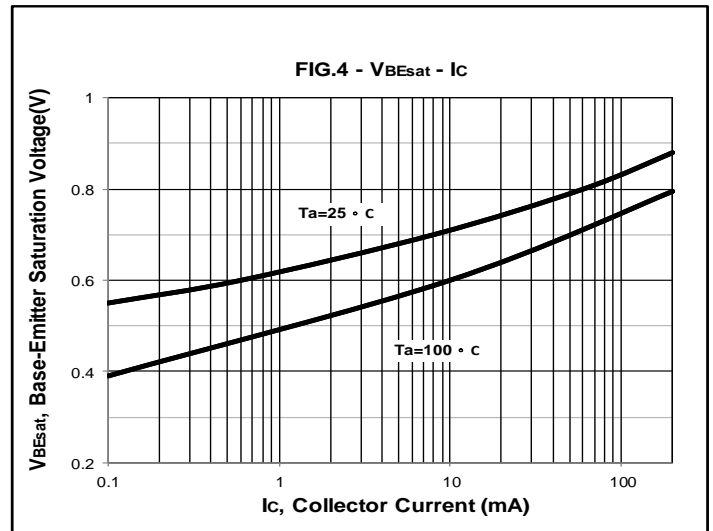
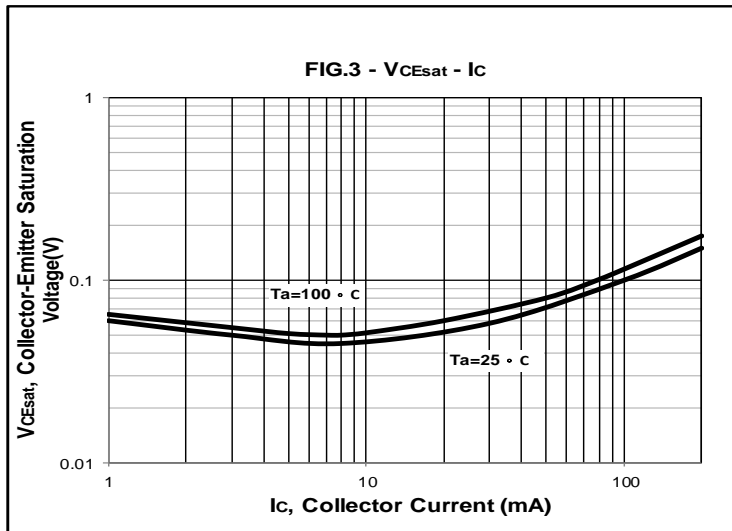
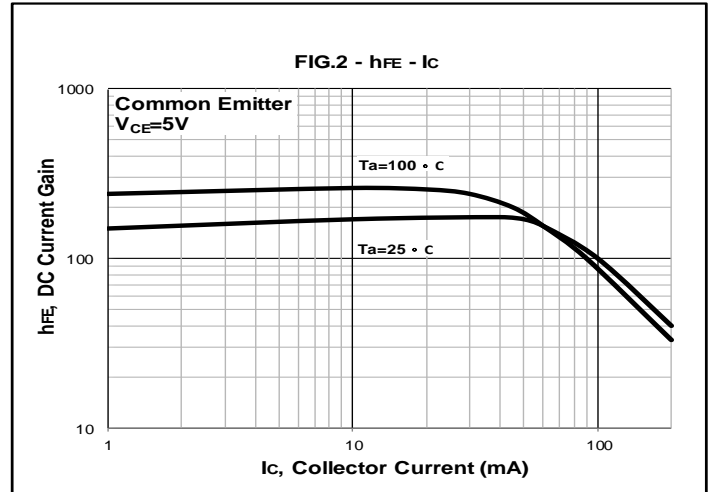
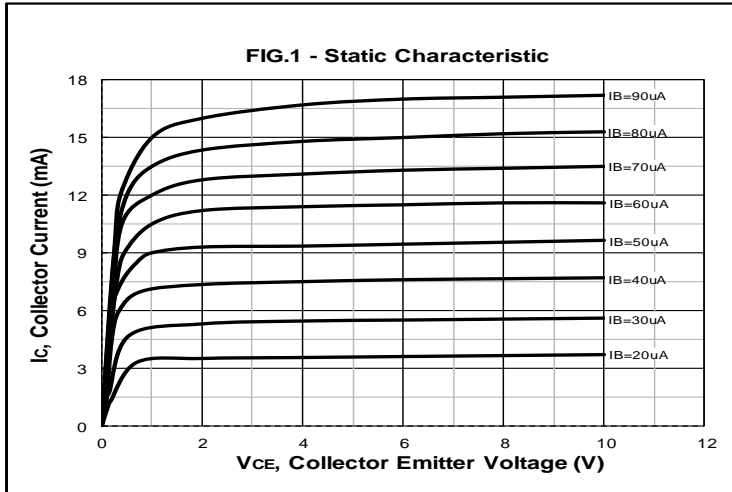
Electrical Characteristics(@TA = +25°C, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage	$I_C=100\mu A, I_E=0$	$V_{(BR)CB0}$	180	-	V
Collector-Emitter Breakdown Voltage	$I_C=1mA, I_B=0$	$V_{(BR)CEO}^*$	160	-	
Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	$V_{(BR)EBO}$	6	-	
Collector Cut-Off Current	$V_{CB}=120V, I_E=0$	I_{CBO}	-	50	nA
Emitter Cut-Off Current	$V_{EB}=4V, I_C=0$	I_{EBO}	-	50	
DC Current Gain	$V_{CE}=5V, I_C=1mA$	$h_{FE(1)}^*$	80	-	-
	$V_{CE}=5V, I_C=10mA$	$h_{FE(2)}^*$	100	300	
	$V_{CE}=5V, I_C=50mA$	$h_{FE(3)}^*$	30	-	
Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{CE(sat)1}^*$	-	0.15	V
	$I_C=50mA, I_B=5mA$	$V_{CE(sat)2}^*$	-	0.20	
Base-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{BE(sat)1}^*$	-	1.00	V
	$I_C=50mA, I_B=5mA$	$V_{BE(sat)2}^*$	-	1.00	
Transition Frequency	$V_{CE}=10V, I_C=10mA, F=100MHz$	f_T	100	300	MHz
Collector Output Capacitance	$V_{CB}=10V, I_E=0, F=1MHz$	C_{ob}	-	6	pF

* Pulse test : pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$

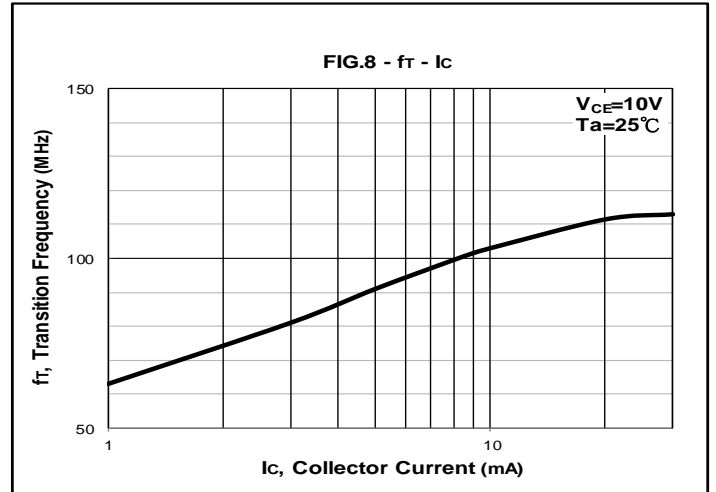
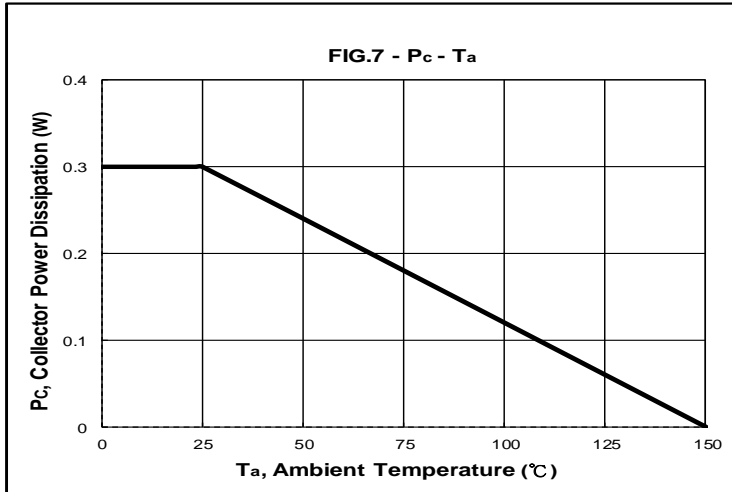


Rating and Characteristic Curves



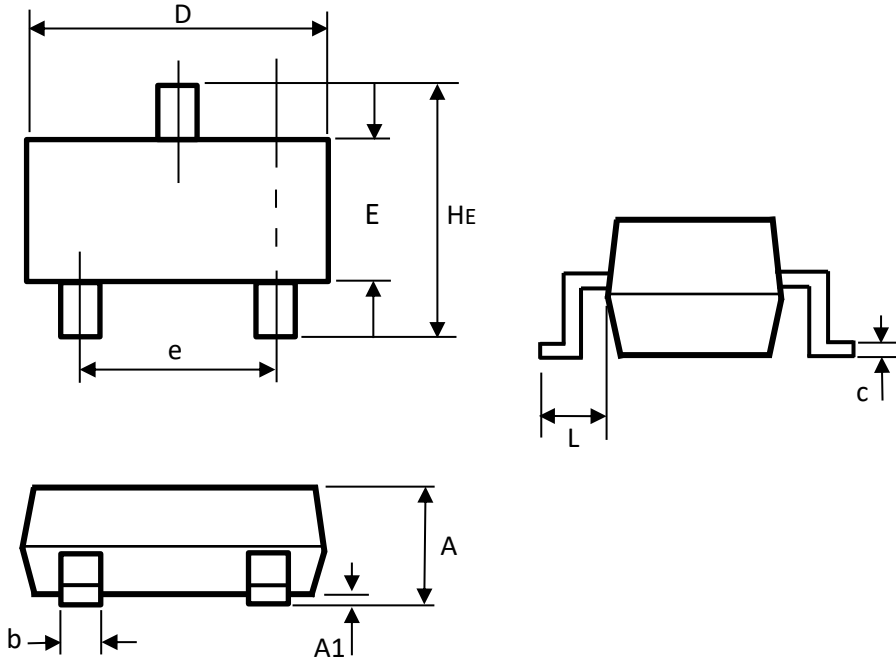


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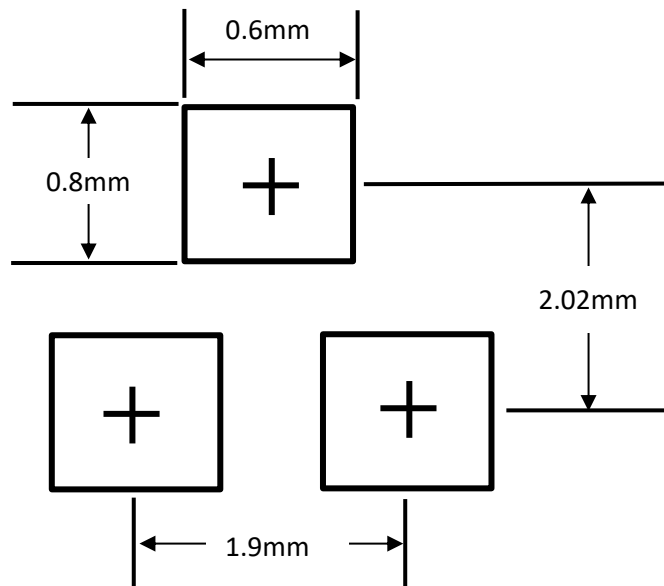


Package Outline Dimensions



SOT23 Package		
Dim	Min	Max
A	0.90	1.15
A1	0.00	0.10
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
e	1.80	2.00
L	0.55 REF	
HE	2.25	2.55
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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