

Features

- Epoxy meets UL-94 V-0 flammability rating.
- Moisture sensitivity Level 1.
- High conductance.
- Surface mount package ideally suited for automatic insertion.

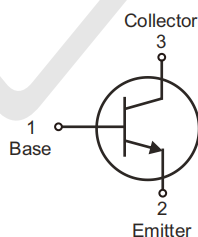
Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102.

SOT23



Circuit Diagram



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

Parameter	Symbol	Value	Unit
Collector-base voltage	V _{CB0}	75	V
Collector-emitter voltage	V _{CEO}	40	V
Emitter-base voltage	V _{EB0}	6	V
Collector current	I _c	600	mA
Collector power dissipation	P _c	300	mW
Thermal resistance from junction to ambient	R _{θJA}	417	°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	Conditions	Symbol	Min	Max	Unit
Collector-base breakdown voltage	$I_C = 10\mu A, I_E = 0$	V_{CBO}	75		V
Collector-emitter breakdown voltage	$I_C = 10mA, I_B = 0$	V_{CEO}	40		V
Emitter-base breakdown voltage	$I_E = 10\mu A, I_C = 0$	V_{EBO}	6		V
Collector-emitter cut-off current	$V_{CE} = 60V, V_{EB} = 3V$	I_{CEX}		10	nA
Collector-base cut-off current	$V_{CB} = 60V, I_E = 0$	I_{CBO}		100	nA
Emitter-base cut-off current	$V_{EB} = 3V, I_C = 0$	I_{EBO}		100	nA
DC current gain	$V_{CE} = 10V, I_C = 0.1mA$	$h_{FE(1)}$	20		
	$V_{CE} = 10V, I_C = 1mA$	$h_{FE(2)}$	40		
	$V_{CE} = 10V, I_C = 10mA$	$h_{FE(3)}$	80		
	$V_{CE} = 10V, I_C = 150mA$	$h_{FE(4)}$	100	300	
	$V_{CE} = 1V, I_C = 150mA$	$h_{FE(5)}$	50		
	$V_{CE} = 10V, I_C = 500mA$	$h_{FE(6)}$	40		
Collector-emitter saturation voltage	$I_C = 150mA, I_B = 15mA$	$V_{CE(sat)}$		0.3	V
Base-emitter saturation voltage	$I_C = 150mA, I_B = 15mA$	$V_{BE(sat)}$	0.6	1.2	V
Transition frequency	$V_{CE} = 20V, I_C = 20mA, f = 100MHz$	f_T	300		MHz
Delay time	$V_{CC} = 30V, V_{BE(off)} = -0.5V,$	t_d		15	ns
Rise time	$I_C = 150mA, I_{B1} = 15mA$	t_r		25	ns
Storage time	$V_{CC} = 30V, I_C = 150mA, I_{B1} = I_{B2} = 15mA$	t_s		225	ns
Fall time		t_f		60	ns

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

Fig.1 - Static Characteristic

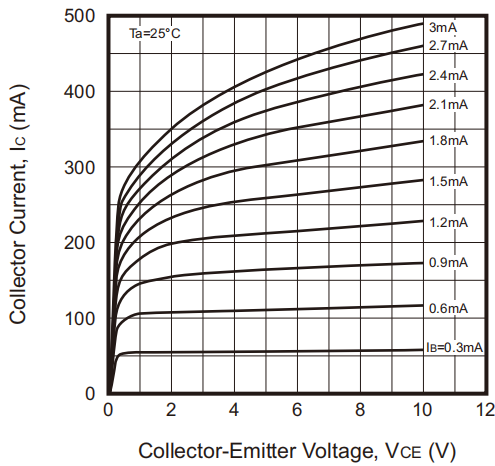


Fig.2 - DC Current Gain

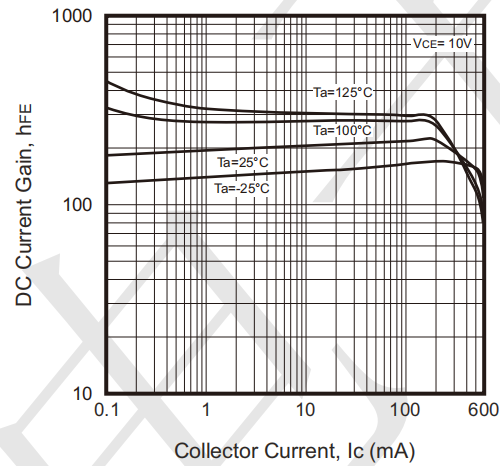


Fig.3 - Collector-Emitter Saturation Voltage

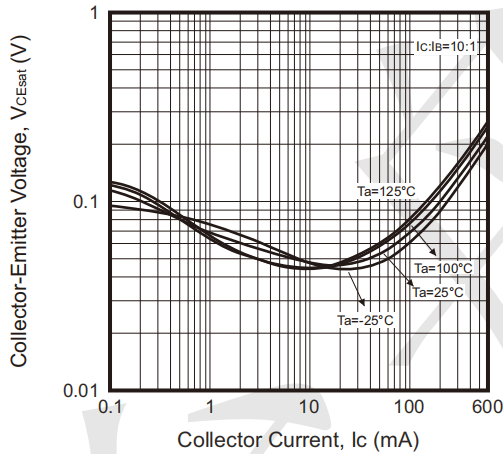
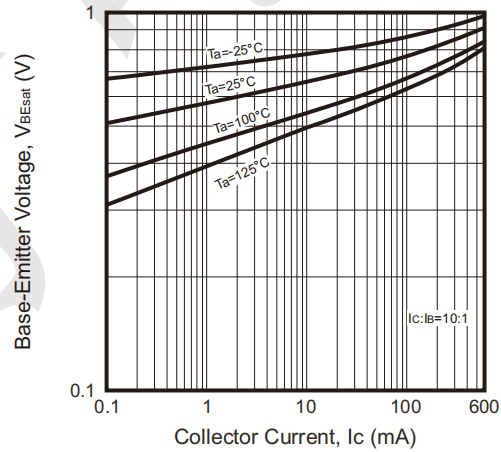


Fig.4 - Base-Emitter Saturation Voltage



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

Fig.5 - Base-Emitter on Voltage

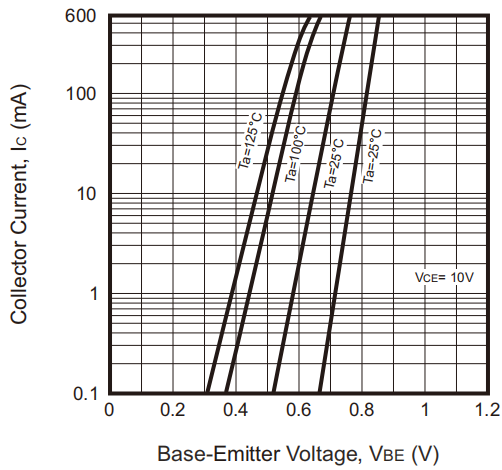


Fig.6 - $C_{ob}/C_{ib} \sim V_{CB}/V_{EB}$

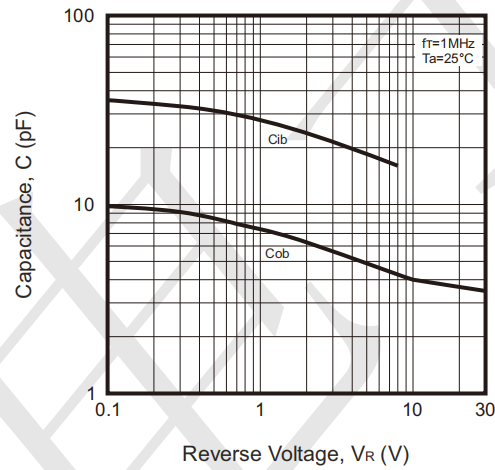
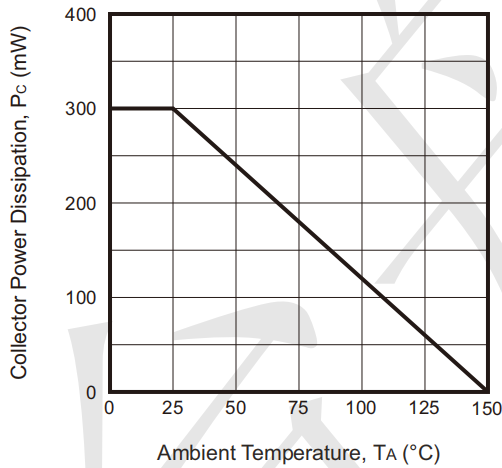
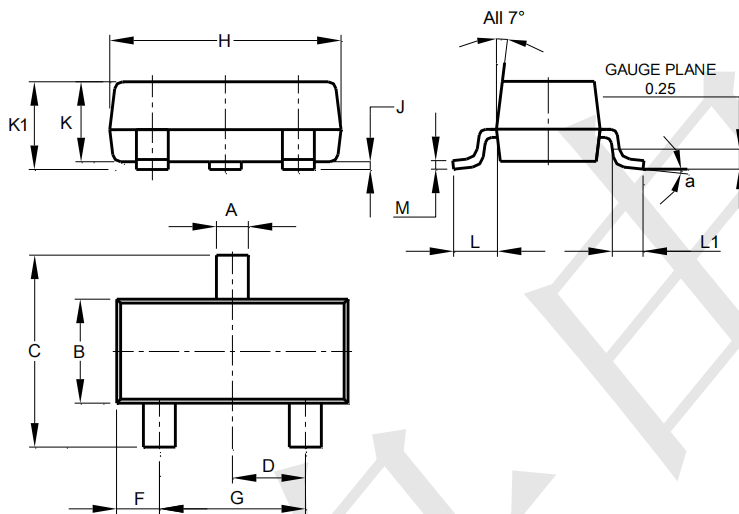


Fig.7 - Collector Power Derating Curve

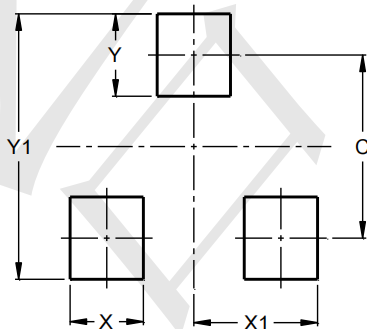


Outline Drawing - SOT23



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