

Features

- Epitaxial planar die construction
- Ideal for medium power amplification and switching.

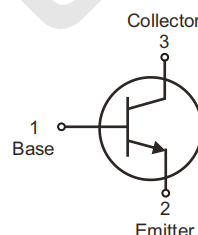
Mechanical data

- Case: SOT-323 , Molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

SOT323



Circuit Diagram



Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	40	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	200	mA
Collector power dissipation	P_C	200	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	625	°C/W
Junction temperature range	T_J	150	°C
Storage temperature range	T_{STG}	-55 ~ +150	°C

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

Parameter	Conditions	Symbol	Min	Max	Unit
Collector-Base breakdown voltage	$I_C = 10\mu A, I_E = 0$	$V_{(BR)CBO}^*$	60		V
Collector-Emitter breakdown voltage	$I_C = 1mA, I_B = 0$	$V_{(BR)CEO}^*$	40		V
Emitter-Base breakdown voltage	$I_E = 10\mu A, I_C = 0$	$V_{(BR)EBO}^*$	5		V
Collector cut-off current	$V_{CB} = 60V, I_E = 0$	I_{CBO}^*		60	nA
Collector cut-off current	$V_{CE} = 40V, I_B = 0$	I_{CEO}^*		500	nA
Collector cut-off current	$V_{CE} = 30V, V_{BE(off)} = 3V$	I_{CEX}		50	nA
DC current gain	$V_{CE} = 1V, I_C = 100\mu A$	h_{FE}^*	40		
	$V_{CE} = 1V, I_C = 1mA$		70		
	$V_{CE} = 1V, I_C = 10mA$		100	300	
	$V_{CE} = 1V, I_C = 50mA$		60		
Collector-Emitter saturation voltage	$I_C = 10mA, I_B = 1mA$	$V_{CE(sat)}^*$		0.25	V
	$I_C = 50mA, I_B = 5mA$			0.3	V
Base-Emitter saturation voltage	$I_C = 10mA, I_B = 1mA$	$V_{BE(sat)}^*$		0.85	V
	$I_C = 50mA, I_B = 5mA$			0.95	V
Transition frequency	$V_{CE} = 20V, I_C = 10mA, f = 100MHz$	f_T	300		MHZ
Output capacitance	$V_{CB} = 5V, I_E = 0, f = 1MHz$	C_{ob}		4	pF
Input capacitance	$V_{EB} = 0.5V, I_C = 0, f = 1MHz$	C_{ib}		8	pF
Delay time	$V_{CC} = 3V, V_{BE(off)} = 0.5V, I_C = 10mA, I_{B1} = 1mA$	t_d		35	nS
Rise time		t_r		35	nS
Storage time	$V_{CC} = 3V, I_C = 10mA, I_{B1} = I_{B2} = 1mA$	t_s		225	nS
Fall time		t_f		75	nS

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



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

Fig.1 - Static Characteristic

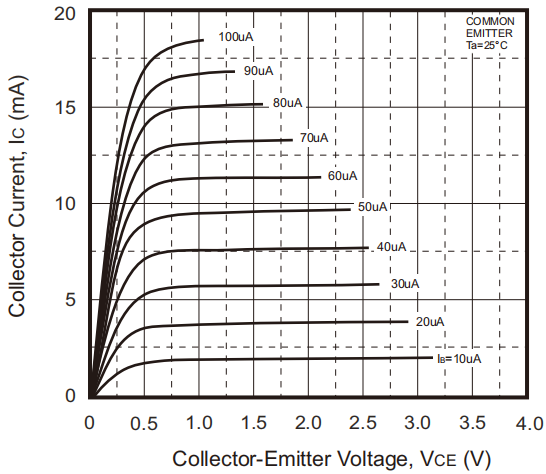


Fig.2 - $h_{FE} - I_c$

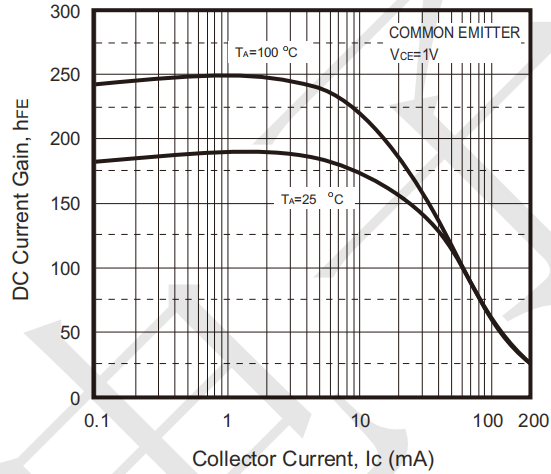


Fig.3 - $V_{BEsat} - I_c$

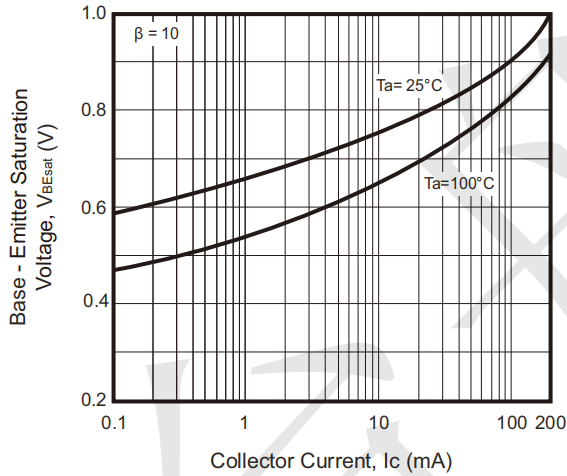


Fig.4 - $V_{CEsat} - I_c$

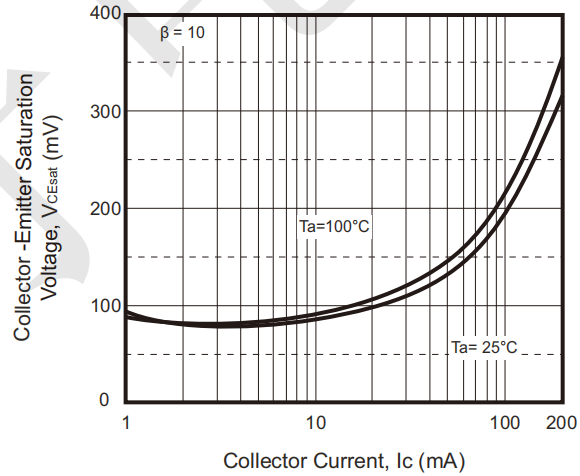


Fig.5 - $I_c - V_{BE}$

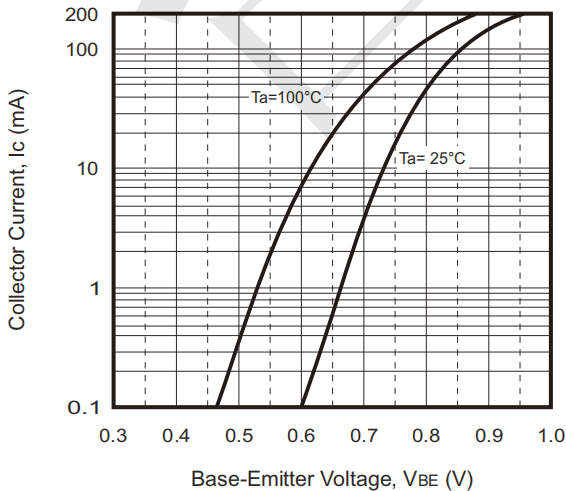
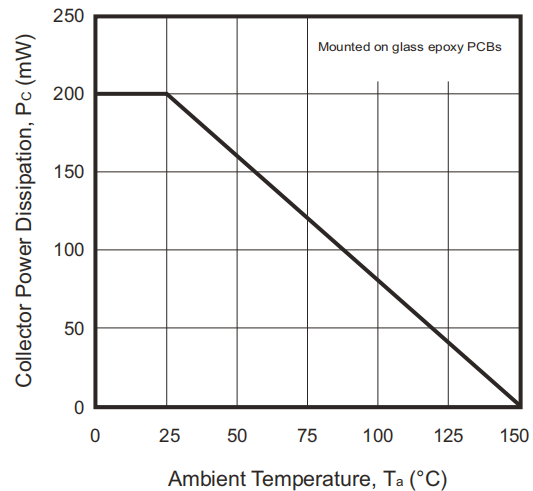
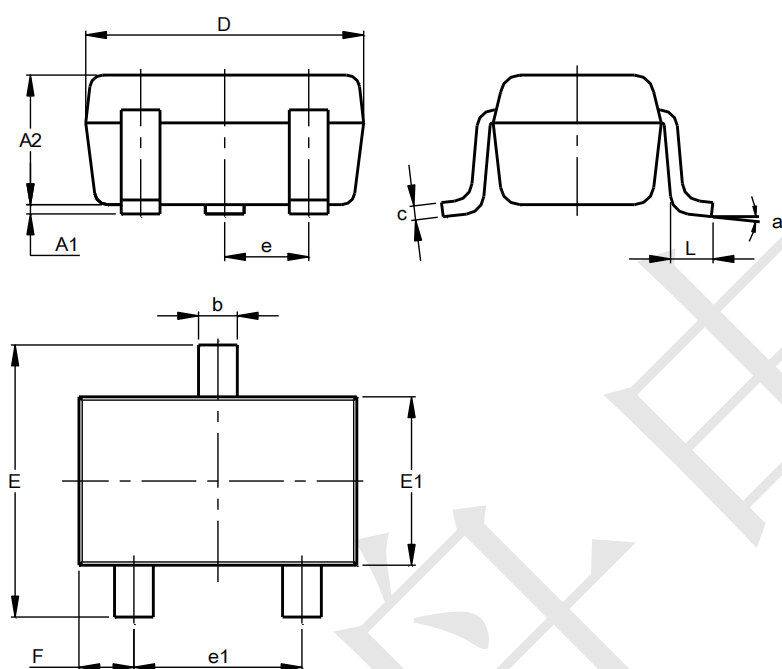


Fig.6 - $P_c - T_a$

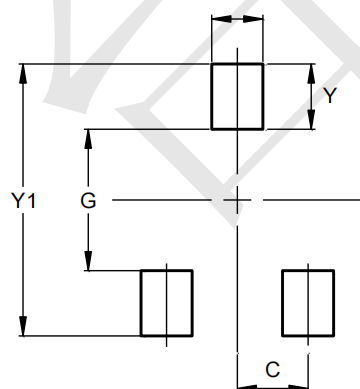


Outline Drawing - SOT323



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Land Pattern - SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500