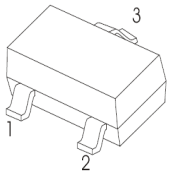
SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

TRANSISTOR (PNP)

FEATURES

- High current surface mount PNP silicon switching transistor for Load management in portable applications

MARKING :589

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

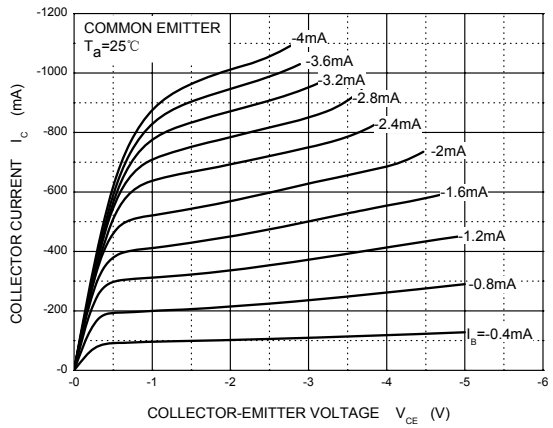
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-30	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-1	A
P_C	Collector Power Dissipation	310	mW
$R_{\theta JA}$	Thermal Resistance, junction to Ambient	403	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

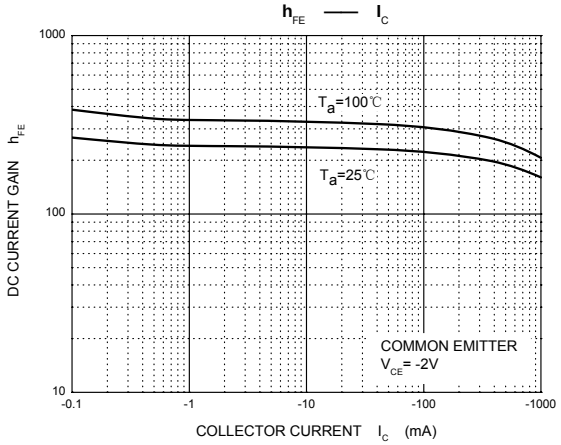
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA,I_E=0	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-10mA,I_B=0	-30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V,I_E=0			-0.1	μA
Collector-emitter cut-off current	I_{CES}	V_{CES}=-30V			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V,I_C=0			-0.1	μA
DC current gain	h_{FE1}	V_{CE}=-2V,I_C=-1mA	100			
	h_{FE2}	V_{CE}=-2V,I_C=-500mA	100		300	
	h_{FE3}	V_{CE}=-2V,I_C=-1A	80			
	h_{FE4}	V_{CE}=-2V,I_C=-2A	40			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C= -500mA, I_B=-50mA			-0.25	V
	$V_{CE(sat)2}$	I_C= -1A, I_B=-100mA			-0.3	V
	$V_{CE(sat)3}$	I_C= -2A, I_B=-200mA			-0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C= -1A, I_B=-100mA			-1.2	V
Base-emitter Turn-on voltage	$V_{BE(on)}$	V_{CE}=-2V, I_C=-1A			-1.1	V
Transition frequency	f_T	V_{CE}=-5V, I_C=-100mA , f =100MHz	100			MHz
Collector Output Capacitance	C_{ob}	f=1MHz			15	pF

Typical Characteristics

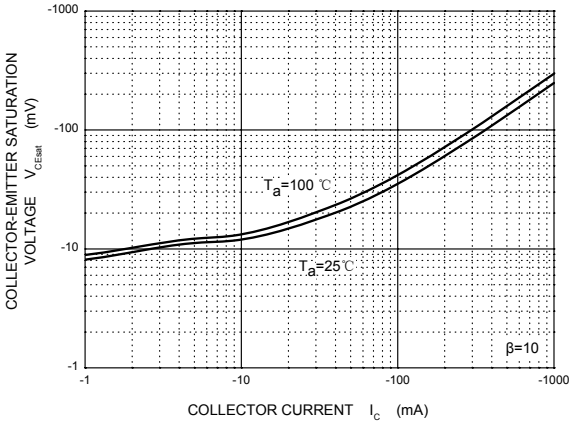
Static Characteristic



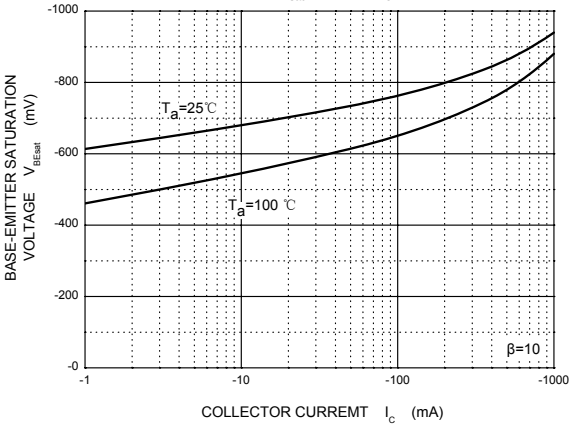
h_{FE} — I_C



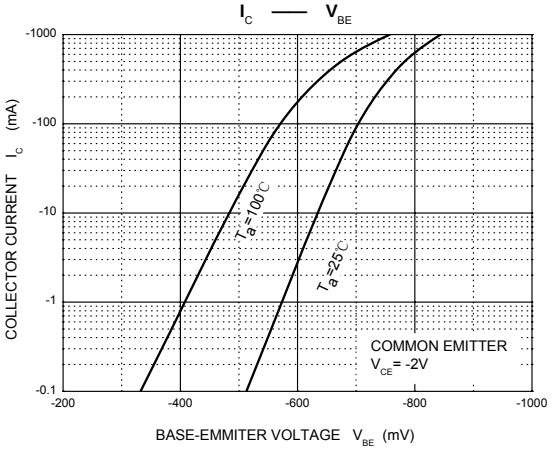
V_{CEsat} — I_C



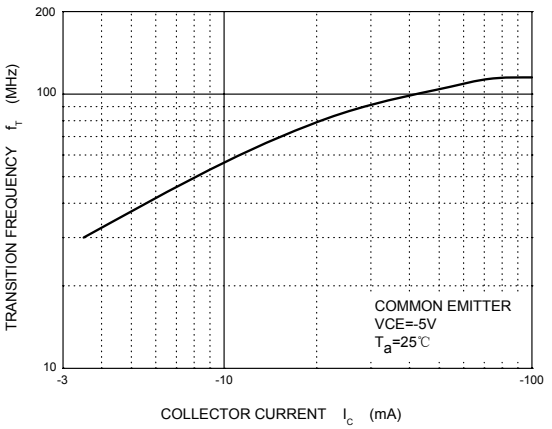
V_{BEsat} — I_C



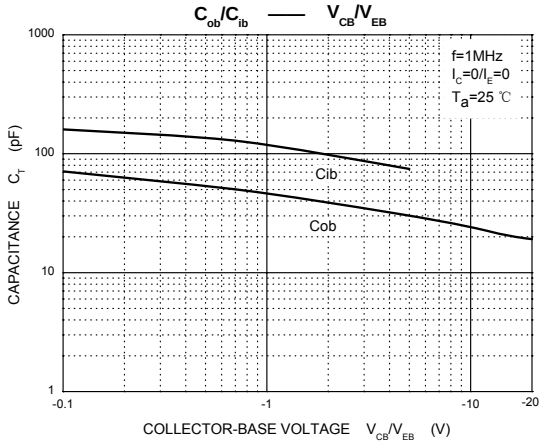
I_C — V_{BE}



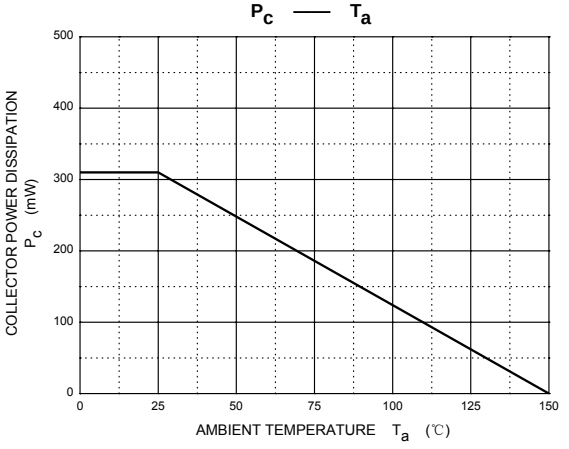
f_T — I_C



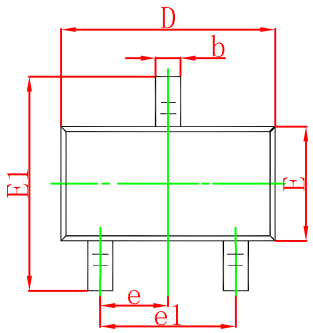
C_{ob}/C_{ib} — V_{CB}/V_{EB}

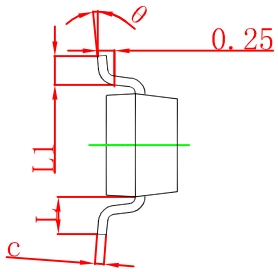


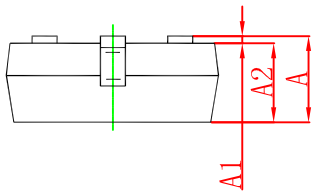
P_C — T_a



SOT-23 Package Outline Dimensions

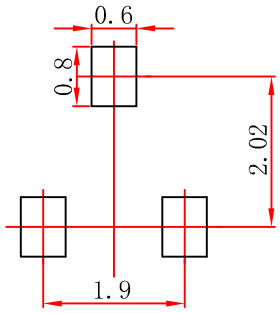






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.