

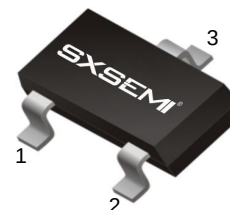
FEATURES

Low equivalent on-resistance

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	80	V
V _{CEO}	Collector-Emitter Voltage	60	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current	1	A
I _{CM}	Peak Pulse Current	2	A
P _C	Collector Power Dissipation	250	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	500	°C/W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	°C

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

Marking :491

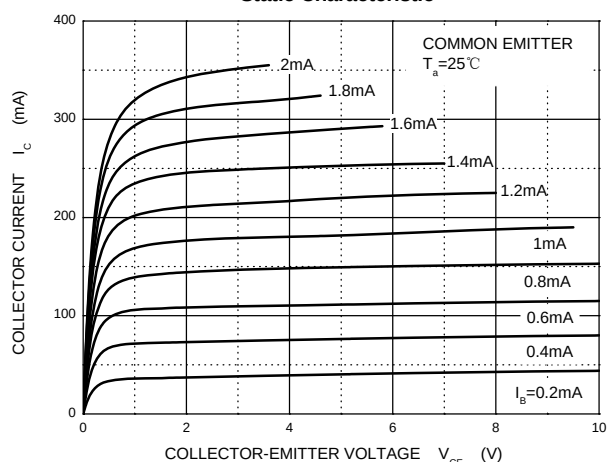
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	80			V
Collector-emitter breakdown voltage	V _{(BR)CEO} ¹	I _C =10mA, I _B =0	60			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =4V, I _C =0			0.1	μA
DC current gain	h _{FE(1)}	V _{CE} =5V, I _C =1mA	100			
	h _{FE(2)} ¹	V _{CE} =5V, I _C =500mA	100		300	
	h _{FE(3)} ¹	V _{CE} =5V, I _C =1A	80			
	h _{FE(4)} ¹	V _{CE} =5V, I _C =2A	30			
Collector-emitter saturation voltage	V _{CE(sat)1} ¹	I _C =500mA, I _B =50mA			0.25	V
	V _{CE(sat)2} ¹	I _C =1A, I _B =100mA			0.5	V
Base-emitter saturation voltage	V _{BE(sat)} ¹	I _C =1A, I _B =100mA			1.1	V
Base-emitter voltage	V _{BE} ¹	V _{CE} =5V, I _C =1A			1	V
Transition frequency	f _T	V _{CE} =10V, I _C =50mA, f=100MHz	150			MHz
Collector output capacitance	C _{ob}	V _{CB} =10V, f=1MHz			10	pF

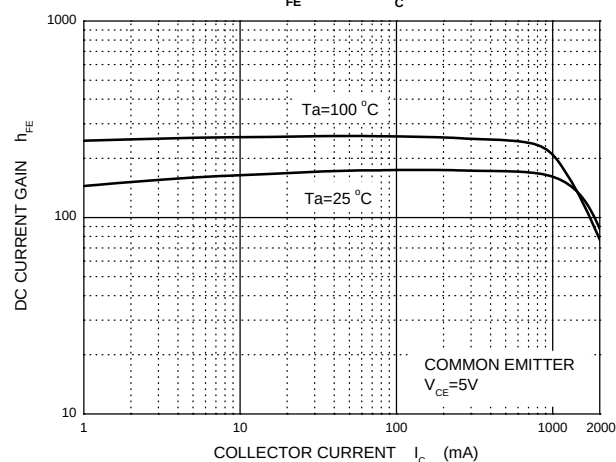
¹Measured under pulsed conditions, Pulse width=300μs, Duty cycle≤2%.

Typical Characteristics

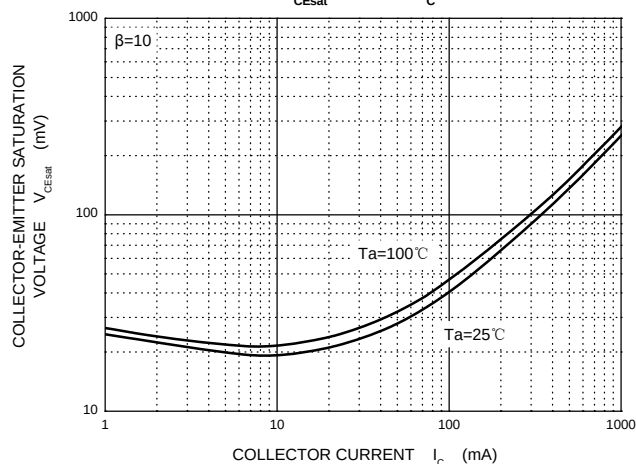
Static Characteristic



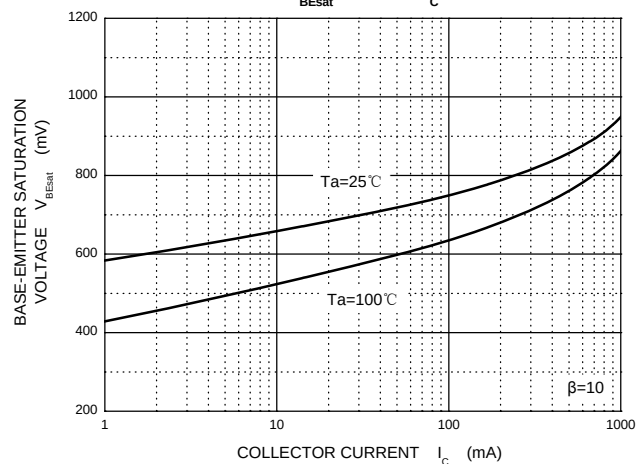
h_{FE} — I_C



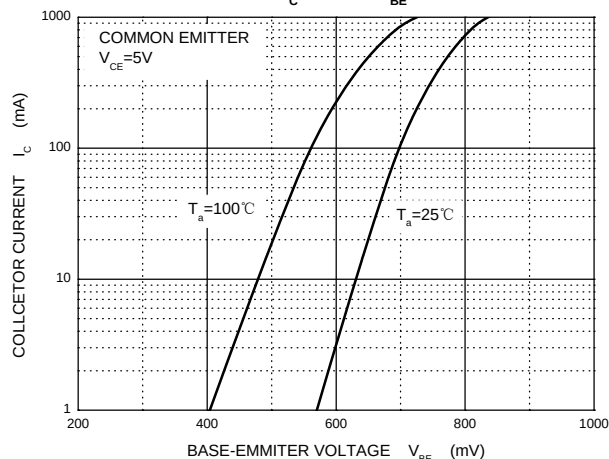
V_{CEsat} — I_C



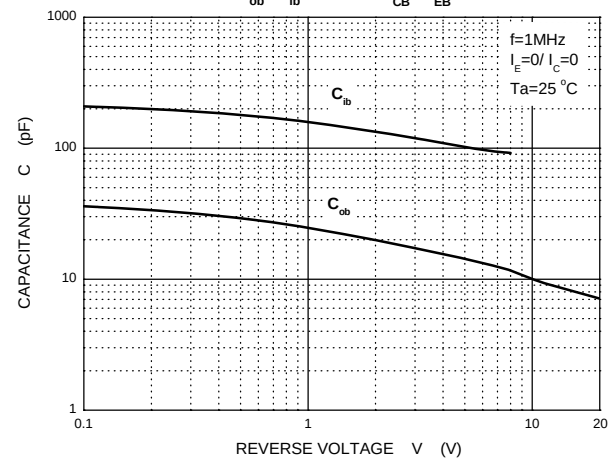
V_{BEsat} — I_C



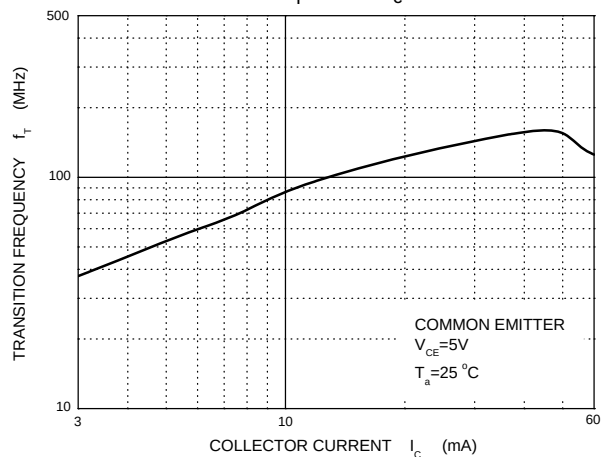
I_C — V_{BE}



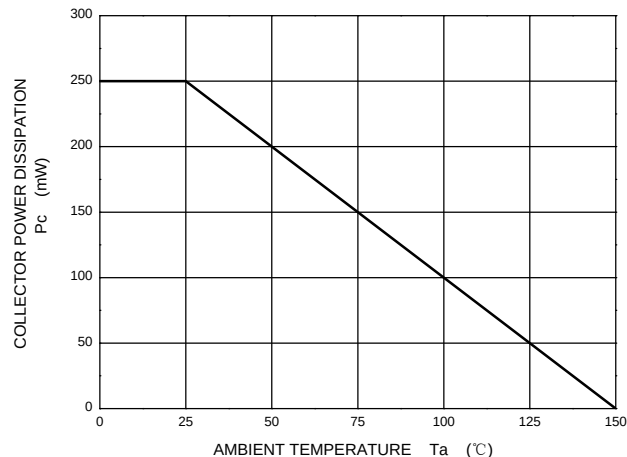
C_{ob}/C_{ib} — V_{CB}/V_{EB}



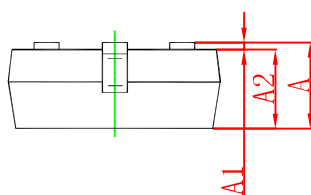
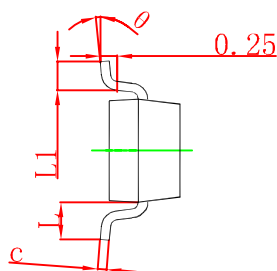
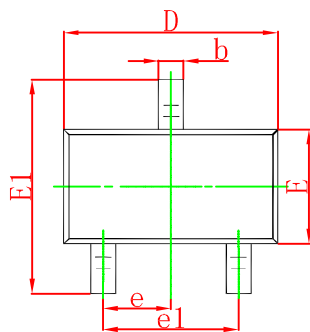
f_T — I_C



P_c — T_a

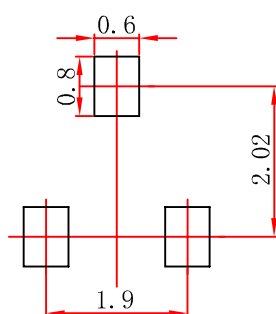


SOT-23 Package Outline Dimensions



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: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.