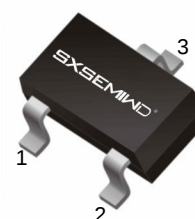


FEATURES

Reduces Board Space

 High h_{FE}

 Low $V_{CE(sat)}$
SOT-523


1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current -Continuous	-150	mA
P_C	Collector Power Dissipation	150	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-50\mu\text{A}$, $I_E=0$	-60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1.0\text{mA}$, $I_B=0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-50\mu\text{A}$, $I_C=0$	-6.0			V
Collector cut-off current	I_{CBO}	$V_{CB}=-60\text{V}$, $I_E=0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-6\text{V}$, $I_C=0$			-0.1	μA
DC current gain	$h_{FE}^{(1)}$	$V_{CE}=-6.0\text{V}$, $I_C=-1.0\text{mA}$	120		560	
Collector-emitter saturation voltage	$V_{CE(sat)}^{(2)}$	$I_C=-50\text{mA}$, $I_B=-5.0\text{mA}$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}^{(2)}$	$I_C=-50\text{mA}$, $I_B=-5.0\text{mA}$			-1.2	V
Transition frequency	f_T	$V_{CE}=-12\text{V}$, $I_C=-2.0\text{mA}$, $f=30\text{MHz}$		140		MHz
Collector output capacitance	C_{ob}	$V_{CB}=-12\text{V}$, $I_E=0$, $f=1\text{MHz}$		3.5	5	pF

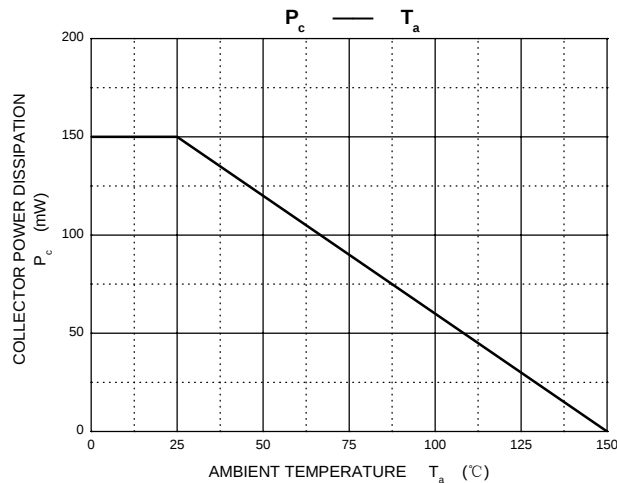
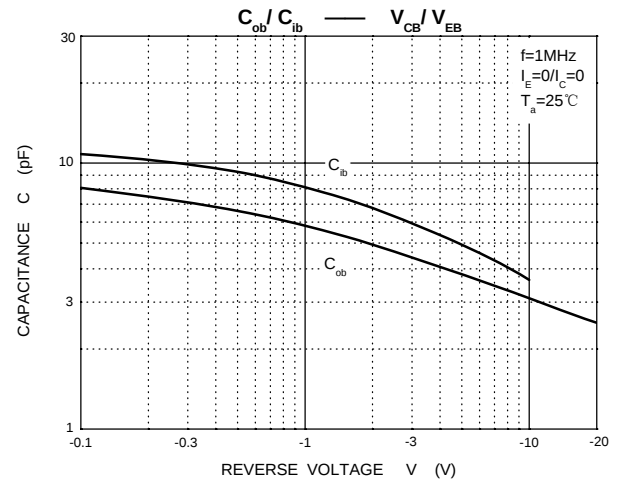
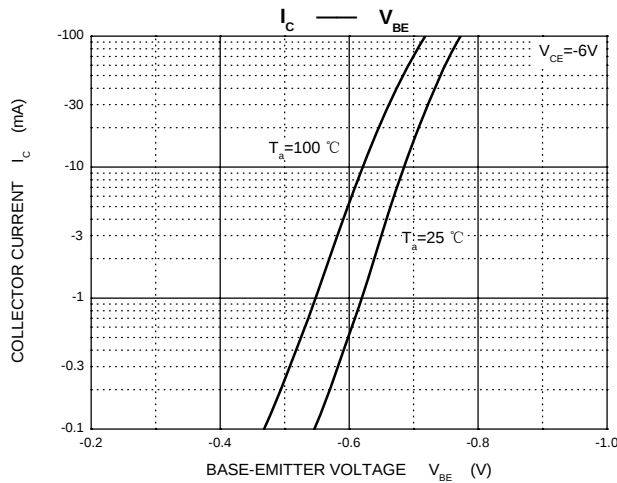
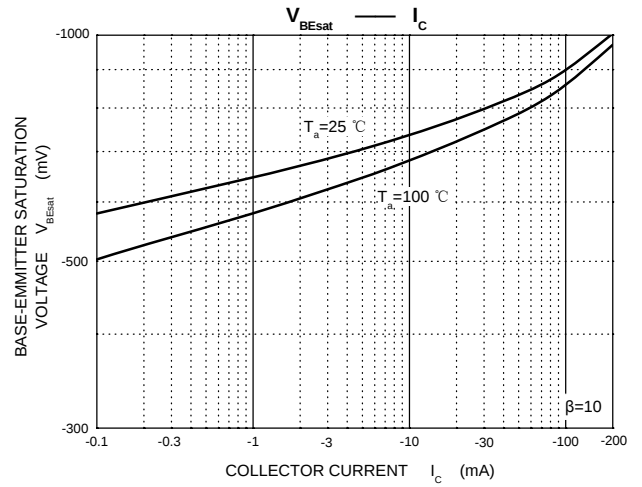
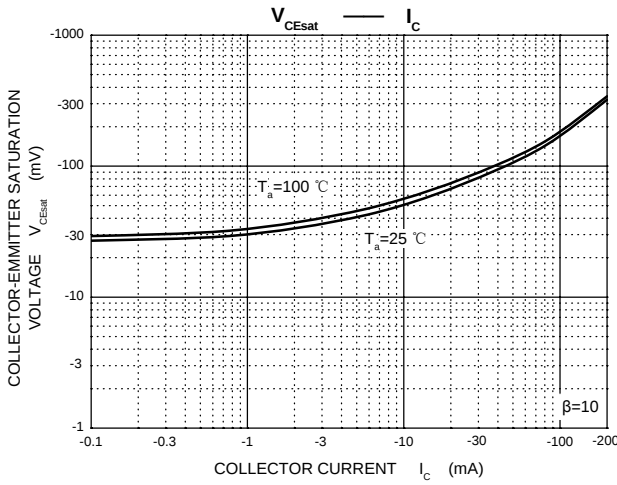
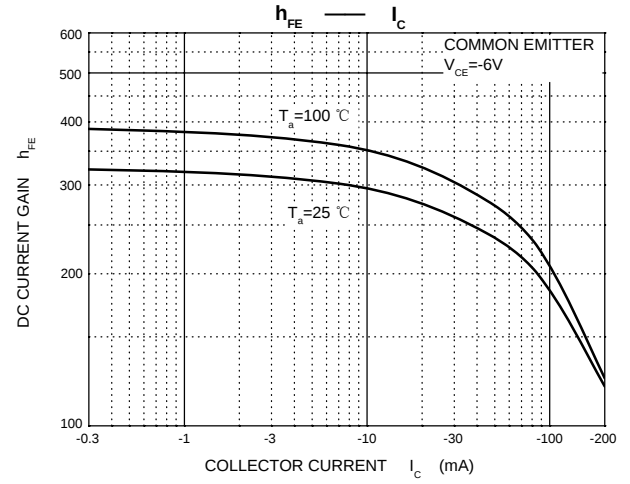
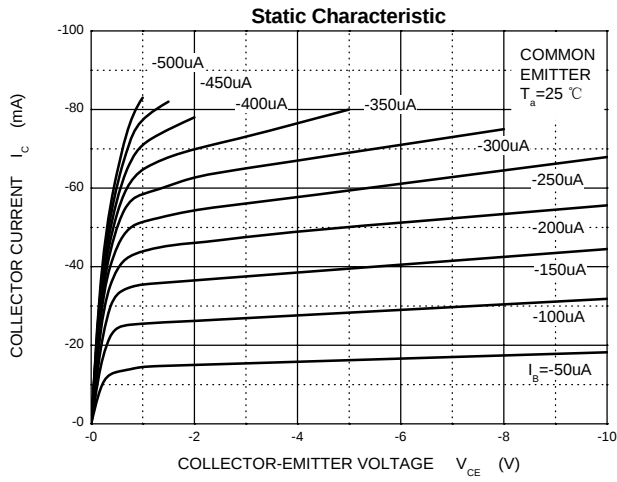
Note(1):

 CLASSIFICATION OF h_{FE}

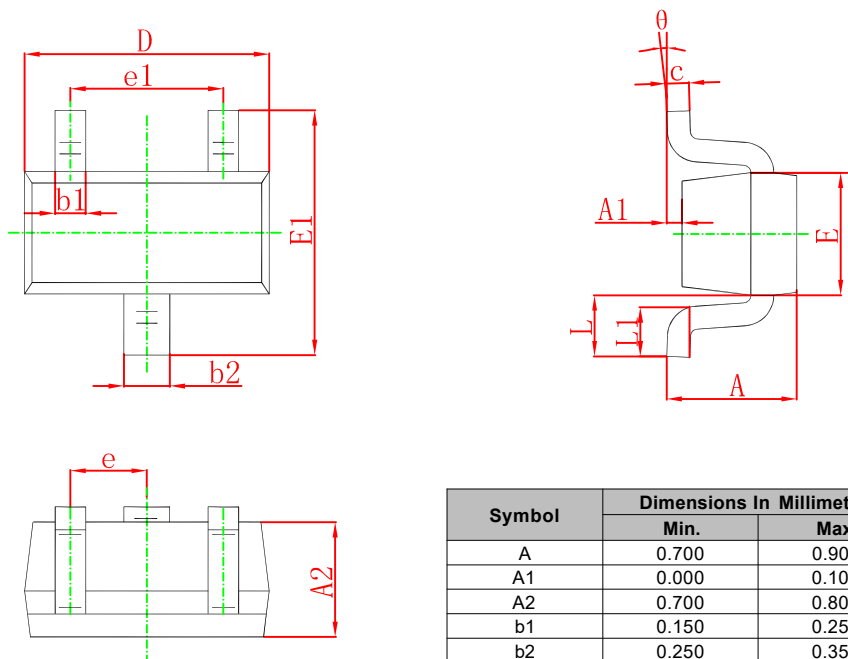
Rank	Q	R	S
Range	120-270	180-390	270-560
Marking	FQ	FR	FS

 (2).Pulse Test :Pulse Width $\leq 300\mu\text{s}$, D.C $\leq 2\%$

Typical Characteristics

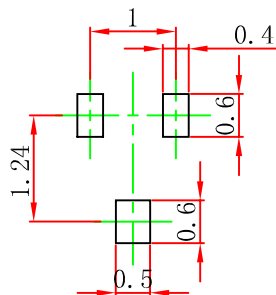


SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



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