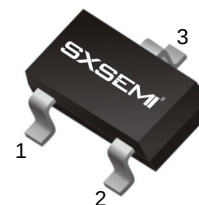


SOT-523



1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

- ▮ Ideally suited for automatic insertion
- ▮ For Switching and AF Amplifier Applications

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current –Continuous	-0.1	A
P_C	Collector Power Dissipation	150	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	$^{\circ}\text{C}$

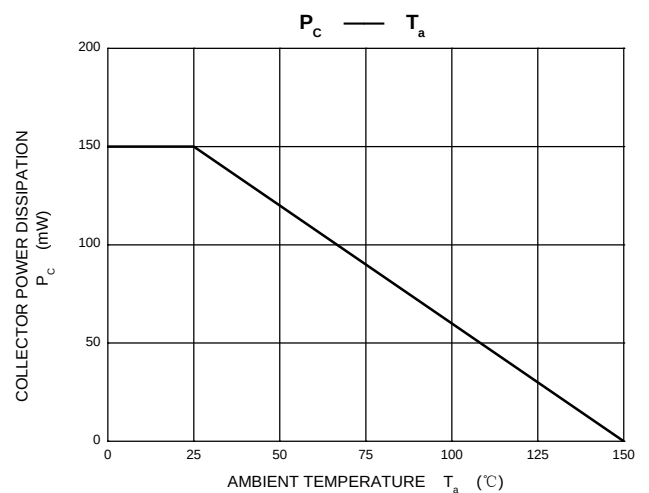
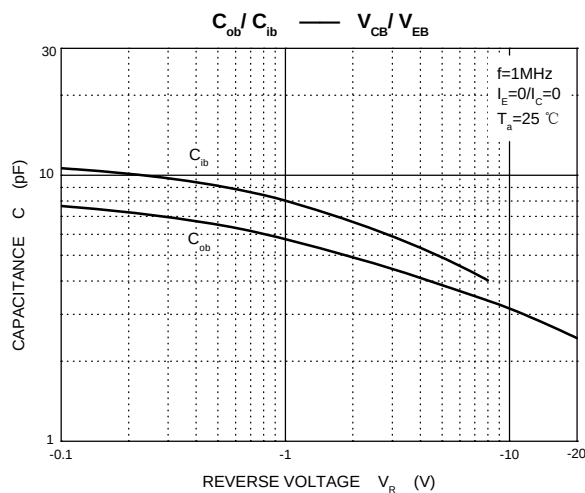
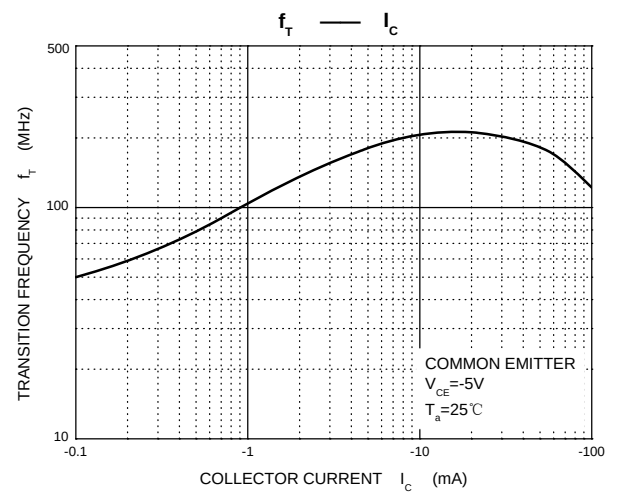
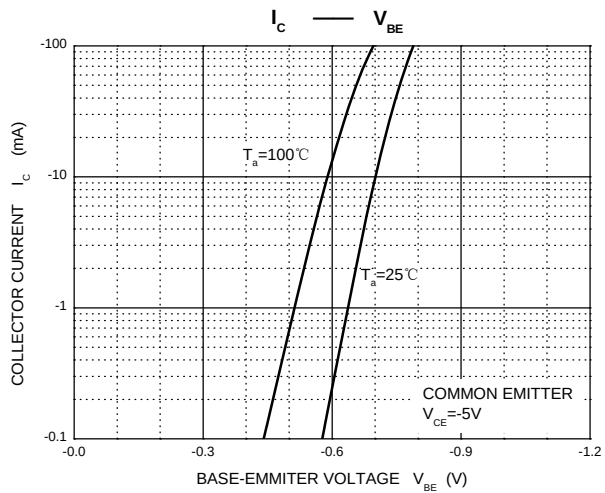
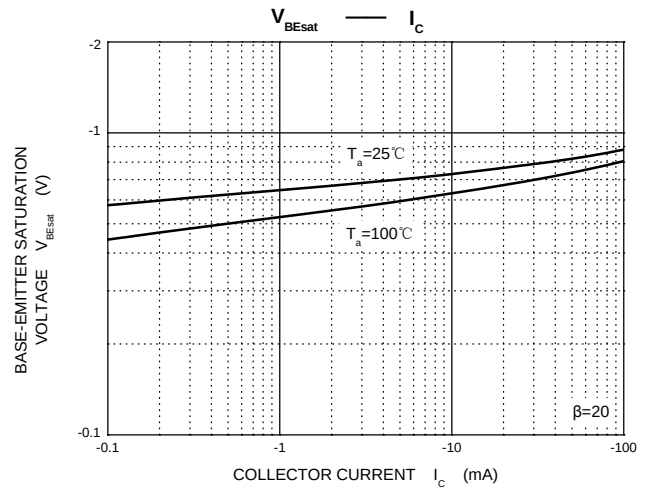
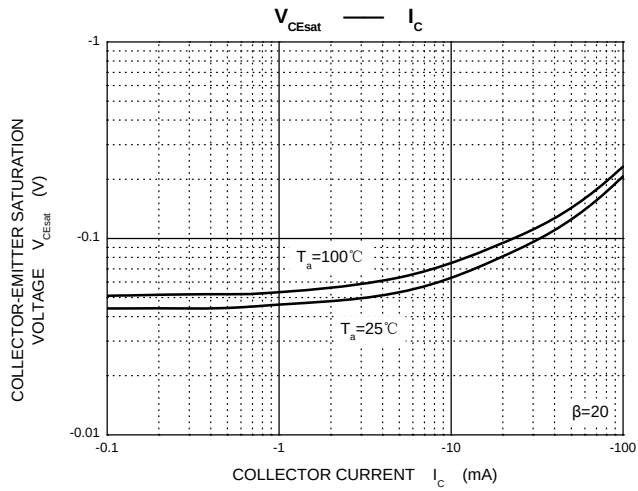
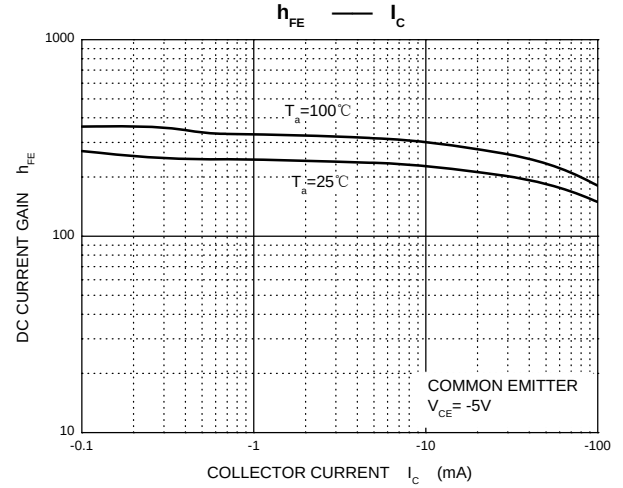
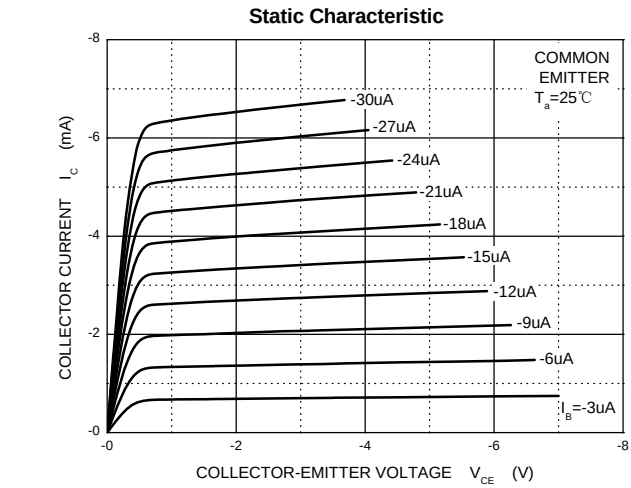
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -1\mu\text{A}, I_C = 0$	-6			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = -30\text{V}$			-15	nA
DC current gain	h_{FE}	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	125		800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$			-0.3 -0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$		-0.7 -0.9		V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$ $V_{CE} = -5\text{V}, I_C = -10\text{mA}$	-600		-750 -820	mV
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$			4.5	pF
Noise figure	NF	$V_{CE} = -5\text{V}, I_C = -0.2\text{mA}$, $f = 1\text{kHz}$, $R_S = 2\text{k}\Omega, BW = 200\text{Hz}$			10	dB

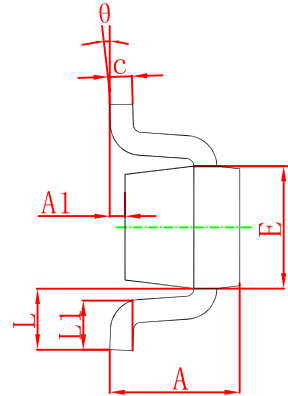
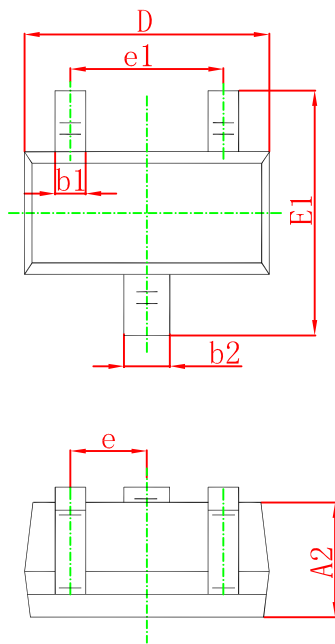
CLASSIFICATION OF h_{FE}

Rank	A	B	C
Range	125-250	220-475	420-800
Marking	3E	3F	3G

Typical Characteristics

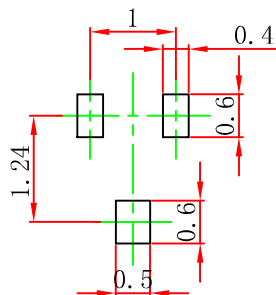


SOT-523 Package Outline Dimensions



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
θ	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.