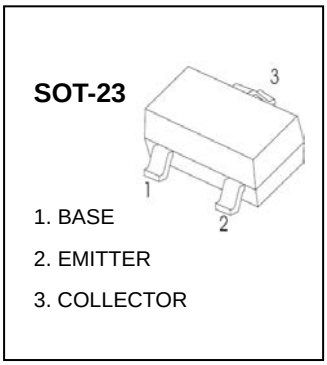
SOT-23 Plastic-Encapsulate Transistors

FEATURE

- **Audio Frequency General Purpose Amplifier Applications**
- **Low Noise: NF=1 dB (Typ),10dB(MAX)**
- **Complementary to 2SA1162**



MAXIMUM RATINGS (T_a=25℃ 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	5	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	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

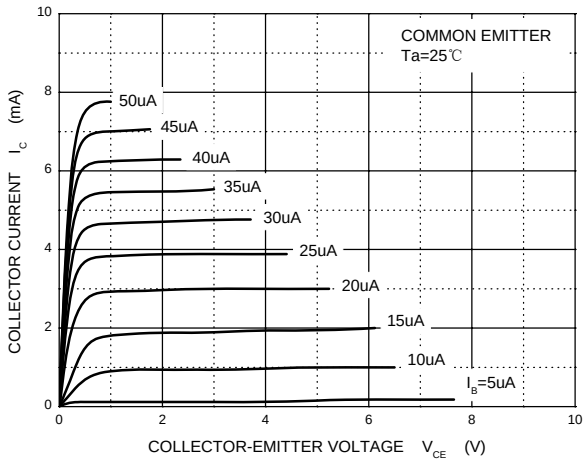
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100μA, I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA ,I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100μA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}= 60 V, I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0			0.1	μA
DC current gain	h_{FE}	V_{CE}=6V, I_C=2mA	70		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C= 100mA, I_B=10mA		0.1	0.25	V
Transition frequency	f_T	V_{CE}=10V, I_C= 1mA	80			MHz
Output capacitance	C_{ob}	V_{CB}=10V, I_E=0,f=1 MHz		2.0	3.5	pF
Noise Figure	NF	V_{CE}=6V,I_C=0.1mA,f=1kHz, Rg=10kΩ		1.0	10	dB

CLASSIFICATION OF h_{FE}

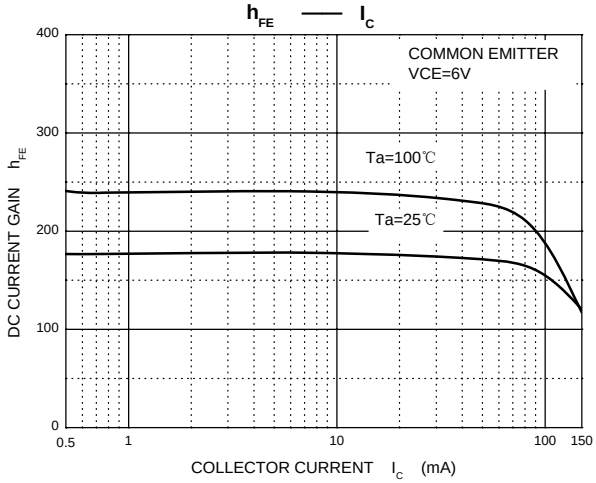
Rank	O	Y	GR	BL
Range	70-140	120-240	200-400	350-700
Marking	LO	LY	LG	LL

Typical Characteristics

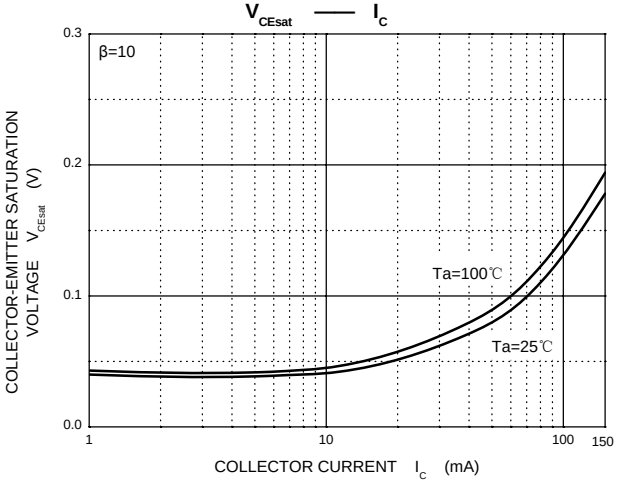
Static Characteristic



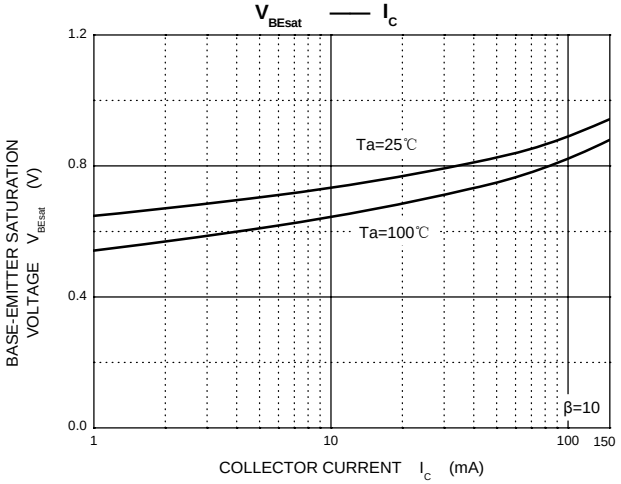
h_{FE} — I_C



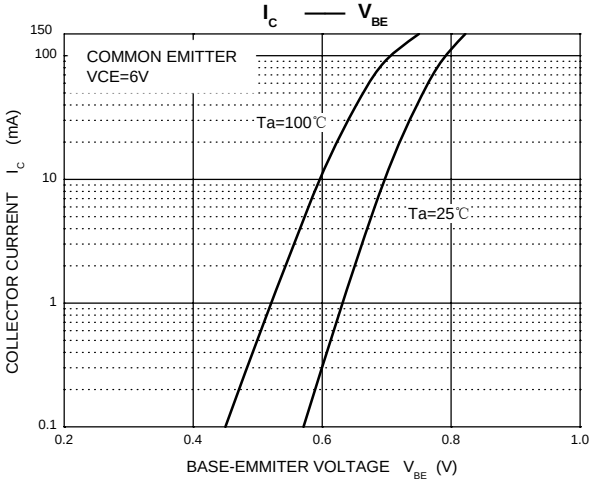
V_{CEsat} — I_C



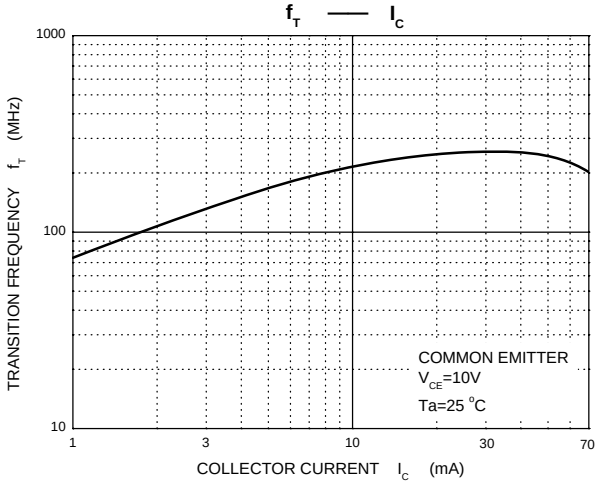
V_{BEsat} — I_C



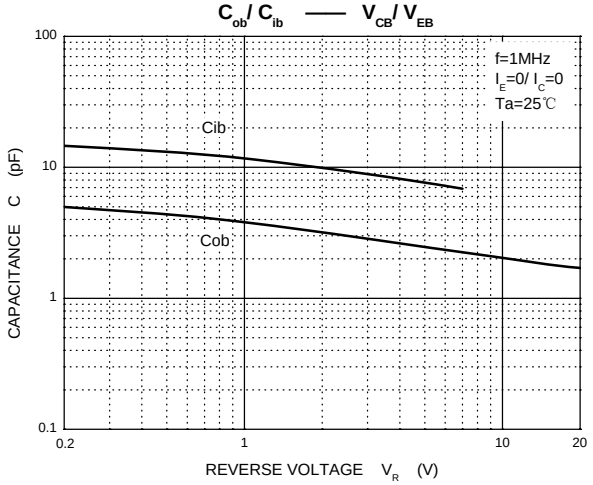
I_C — V_{BE}



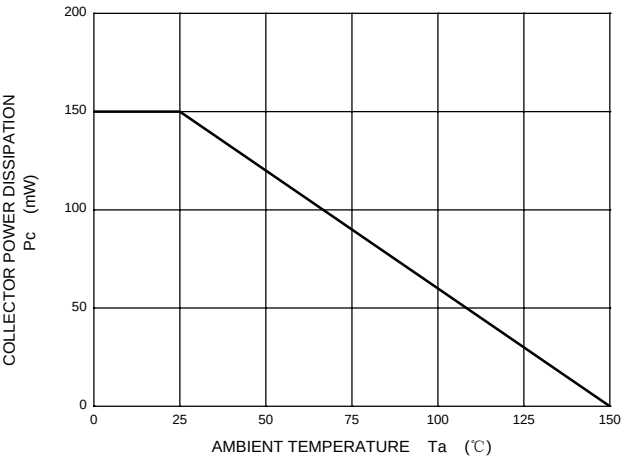
f_T — I_C

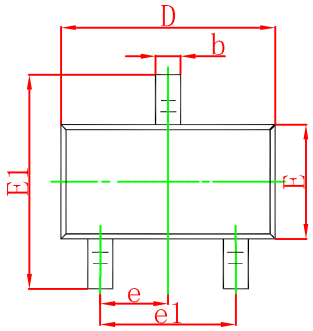


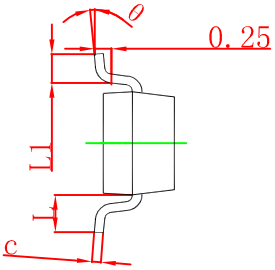
C_{ob}/ C_{ib} — V_{CB}/ V_{EB}

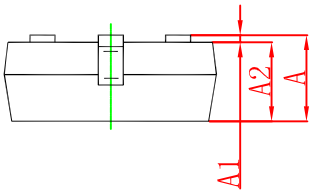


Pc — Ta



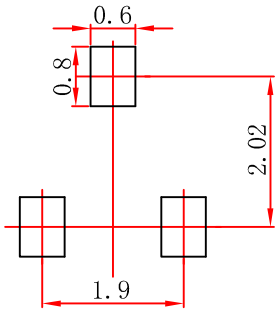






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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.