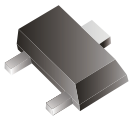
General Purpose Transistor

2SC5658-HF (NPN)

RoHS Device
Halogen Free



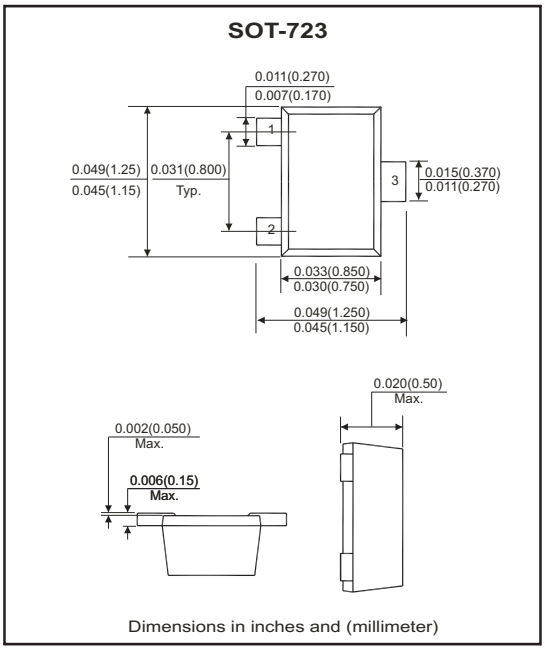
Features

-Low Cob.

Mechanical data

-Case: SOT-723, molded plastic.

-Terminals: solderable per MIL-STD-750, method 2026.

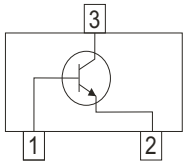


Circuit diagram

-1.BASE

-2.EMITTER

-3.COLLECTOR



Absolute Maximum Ratings (at T_A=25°C)

Parameter	Symbol	Value	Unit
Collector-Base voltage	V_{CBO}	60	V
Collector-Emitter voltage	V_{CEO}	50	V
Emitter-Base voltage	V_{EBO}	7	V
Collector current- continuous	I_C	150	mA
Collector dissipation	P_C	100	µA
Junction temperature	T_J	150	µA
Storage temperature	T_{STG}	-55 ~ +150	µA

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base breakdown voltage	I_C =50µA , I_E=0	$V_{(BR)CBO}$	60			V
Collector-Emitter breakdown voltage	I_C =1mA , I_B=0	$V_{(BR)CEO}$	50			V
Emitter-Base breakdown voltage	I_E =50µA , I_C=0	$V_{(BR)EBO}$	7			V
Collector cut-off current	V_{CB}=60V , I_E=0	I_{CBO}			0.1	µA
Emitter cut-off current	V_{EB}=7V , I_C=0	I_{EBO}			0.1	µA
DC current gain	V_{CE}=6V , I_C=1mA	h_{FE}	120		560	
Collector-Emitter saturation voltage	I_C=50mA , I_B=5mA	V_{CE}(sat)			0.4	V
Transition frequency	V_{CE}=12V , I_C=2mA f=100MHz	f_T		180		MHz
Output capacitance	V_{CB}=12V , I_E=0 f=1MHz	C_{ob}			3.5	pF

Rank	Q	R	S
Range	120~270	180~390	270~560

Company reserves the right to improve product design , functions and reliability without notice.

RATING AND CHARACTERISTIC CURVES (2SC5658-HF)

Fig.1- Static Characteristic

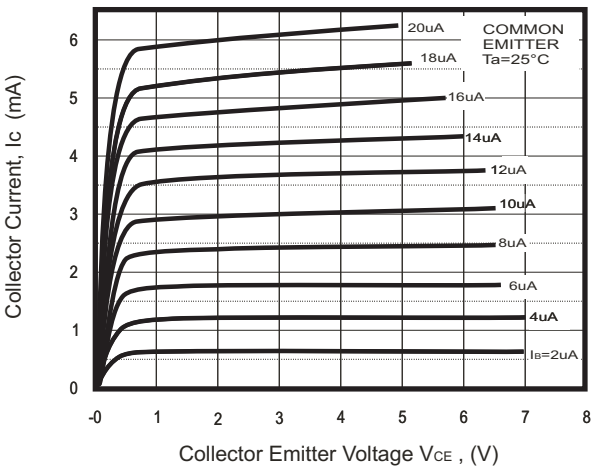


Fig.2- H_{FE} — I_C

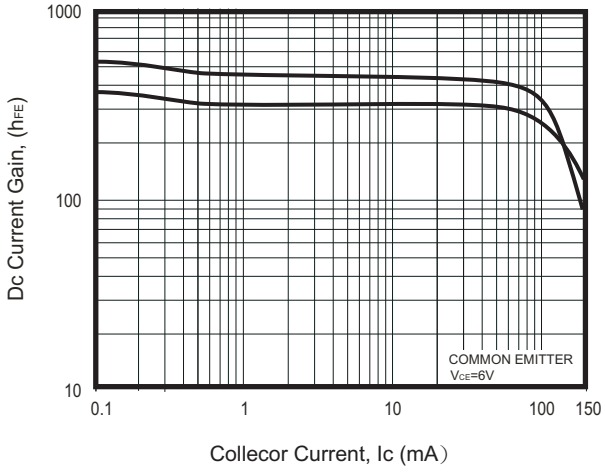


Fig.3- V_{BEsat} — I_C

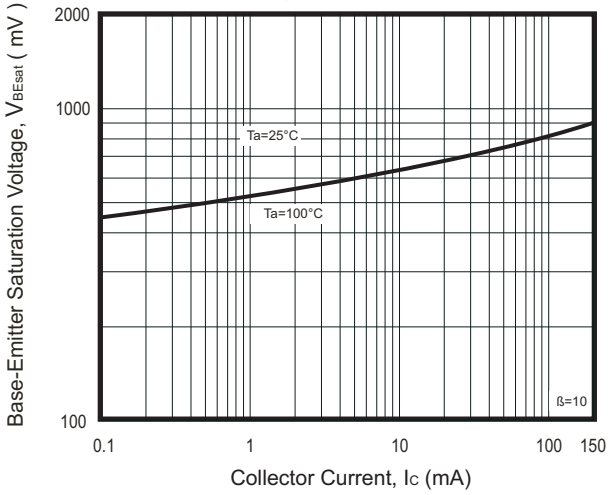


Fig.4 - V_{CEsat} — I_C

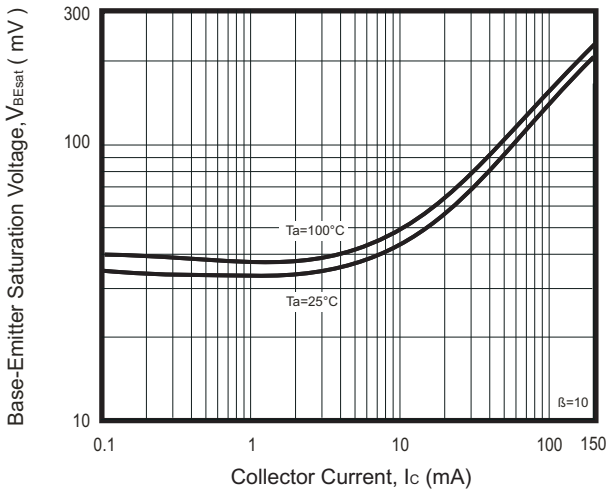


Fig.5 - I_C — V_{BE}

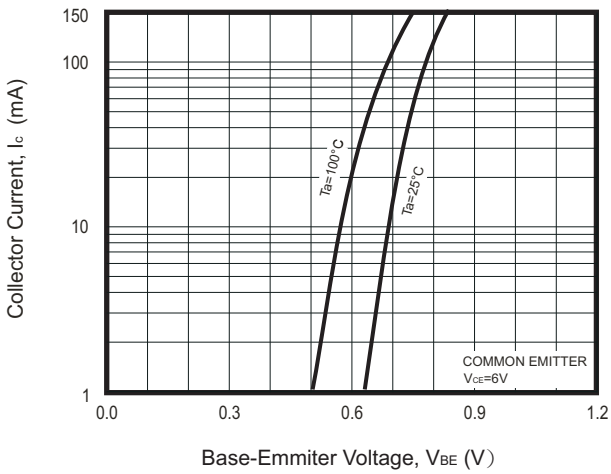
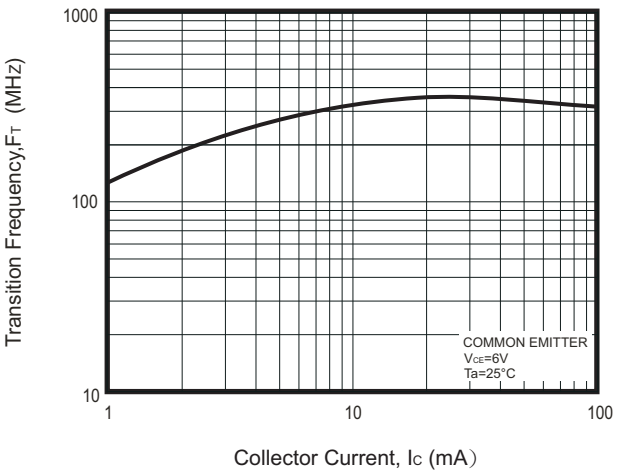


Fig.5 - f_T — I_C



RATING AND CHARACTERISTIC CURVES (2S5658-HF)

Fig.7- C_{ob}/C_{ib} — V_{CE}/V_{EB}

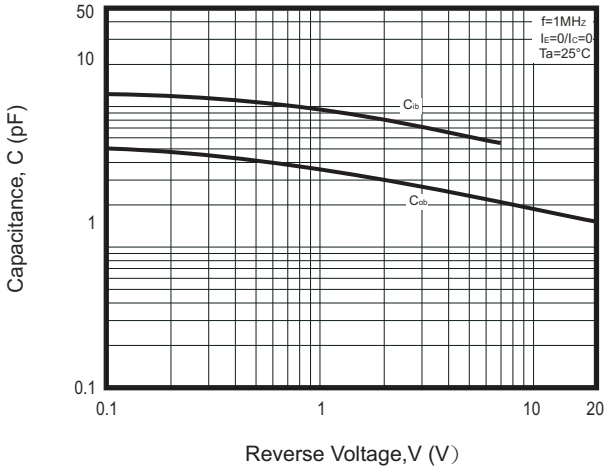
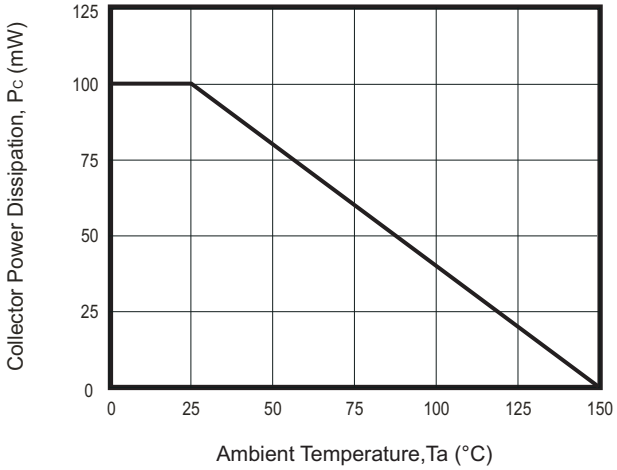
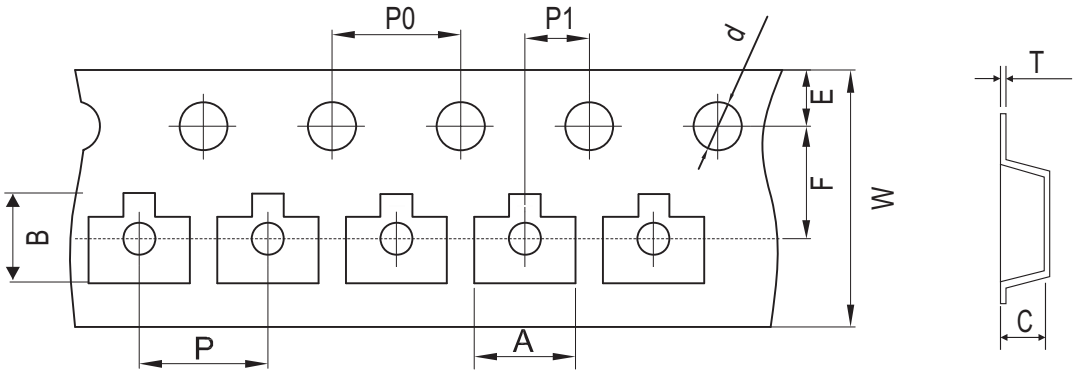
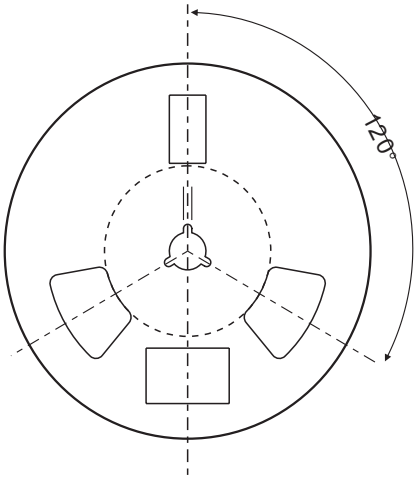


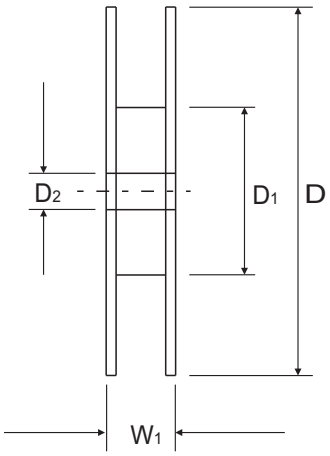
Fig.8 - P_C — T_a

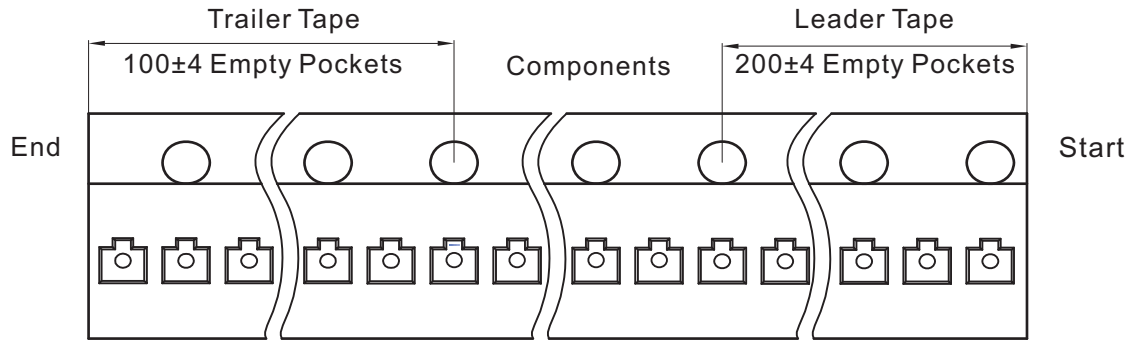


Reel Taping Specification







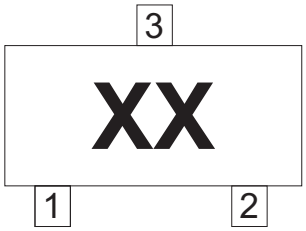


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-723	(mm)	1.33 ± 0.05	1.45 ± 0.05	0.61 ± 0.05	1.50 ± 0.10	178 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.052 ± 0.002	0.057 ± 0.002	0.024 ± 0.002	0.059 + 0.004	7.008 ± 0.078	2.142 ± 0.039	0.512 ± 0.039

	SYMBOL	E	F	P	P_0	P_1	W	W_1
SOT-723	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 / - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.004	0.158 ± 0.004	0.079 ± 0.004	0.315 + 0.012 / - 0.004	0.484 ± 0.039

Marking Code

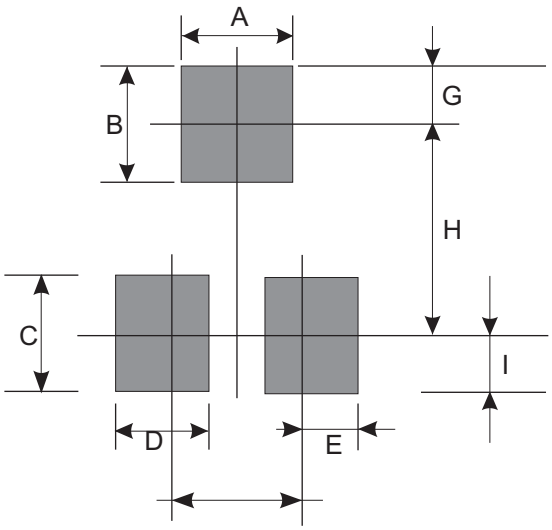
Part Number	Rank	Marking Code
2SC5658-HF	Q	BQ
	R	BR
	S	BS



xx = Product type marking code

Suggested PAD Layout

SIZE	SOT-723	
	(mm)	(inch)
A	0.70	0.003
B	0.65	0.026
C	0.65	0.026
D	0.55	0.022
E	0.30	0.012
F	0.80	0.031
G	0.35	0.014
H	0.90	0.035
I	0.35	0.014



Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
SOT-723	8,000	7