

2SC5658-HF (NPN)

RoHS Device
Halogen Free



Features

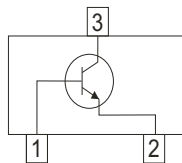
-Low Cob.

Mechanical data

-Case: SOT-723, molded plastic.
-Terminals: solderable per MIL-STD-750, method 2026.

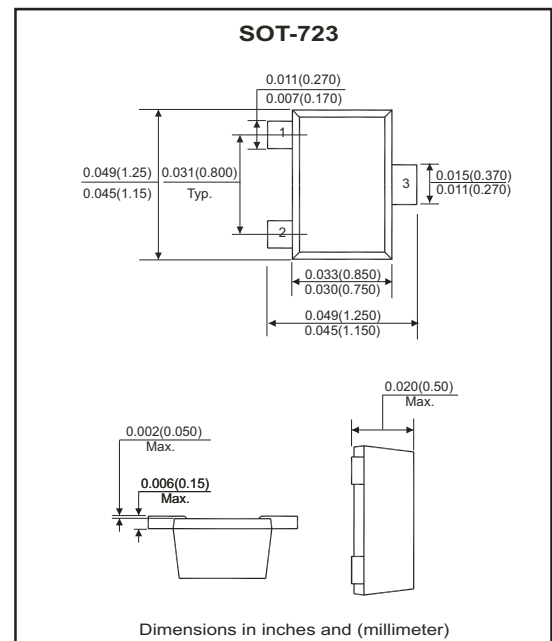
Circuit diagram

-1.BASE
-2.EMITTER
-3.COLLECTOR



Absolute Maximum Ratings (at TA=25°C)

Parameter	Symbol	Value	Unit
Collector-Base voltage	V _{CB0}	60	V
Collector-Emitter voltage	V _{CE0}	50	V
Emitter-Base voltage	V _{EB0}	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

RATING AND CHARACTERISTIC CURVES (2SC5658-HF)

Fig.1- Static Characteristic

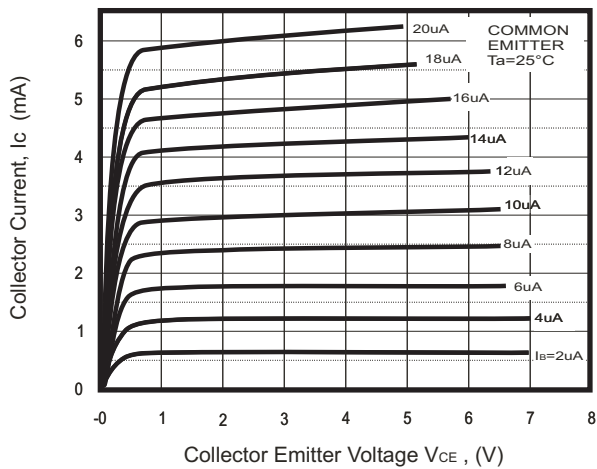


Fig.2- $H_{FE} - I_c$

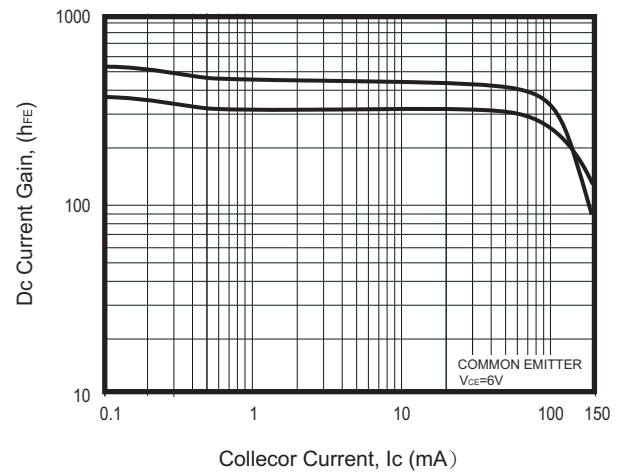


Fig.3- $V_{BEsat} - I_c$

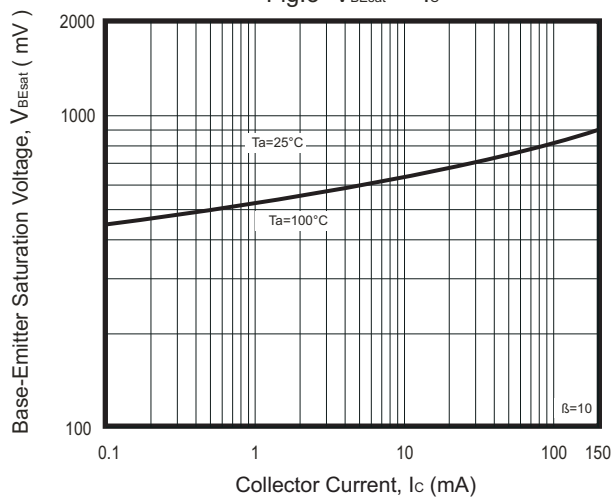


Fig.4 - $V_{CEsat} - I_c$

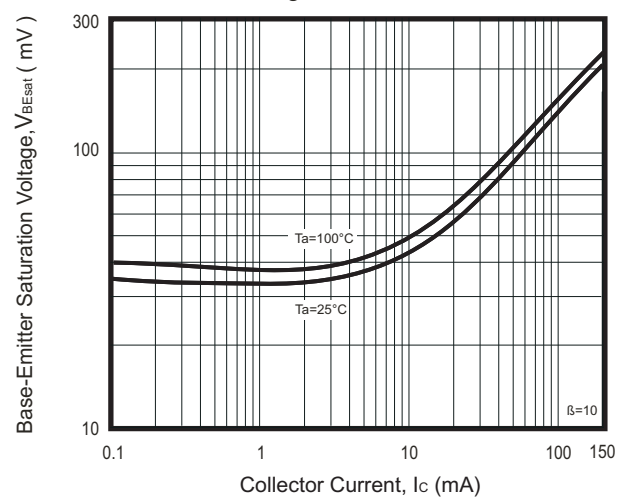


Fig.5 - $I_c - V_{BE}$

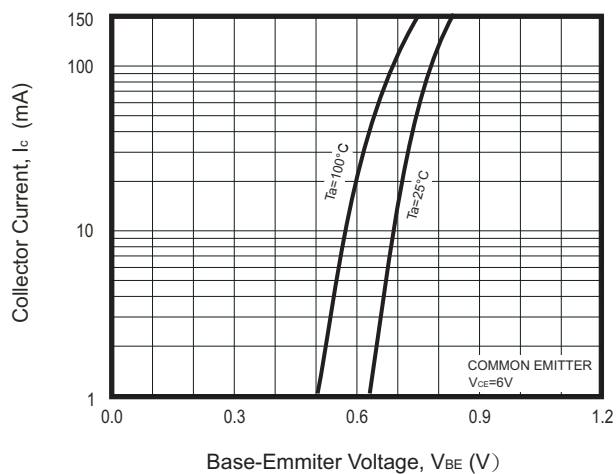
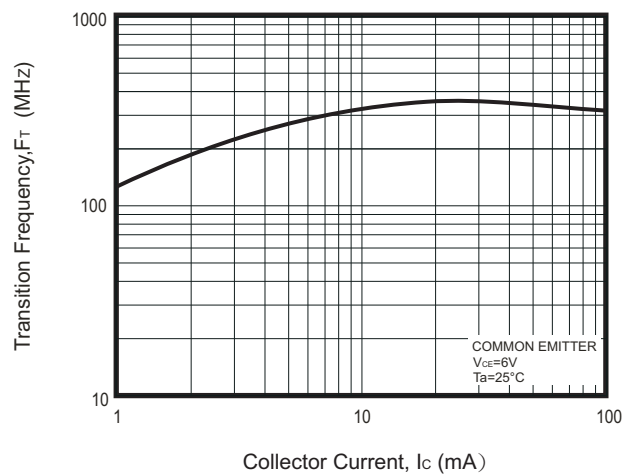


Fig.5 - $f_T - I_c$



RATING AND CHARACTERISTIC CURVES (2S5658-HF)

Fig.7- $C_{ob}/C_{ib} \text{ --- } V_{CE}/V_{EB}$

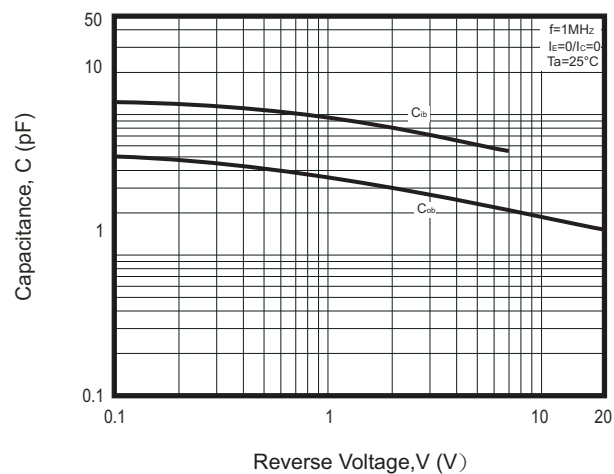
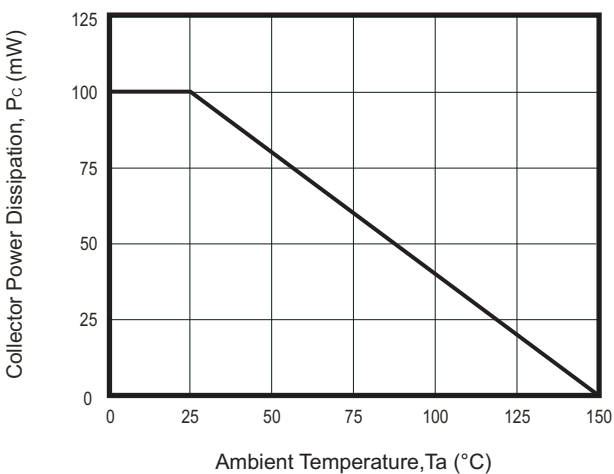
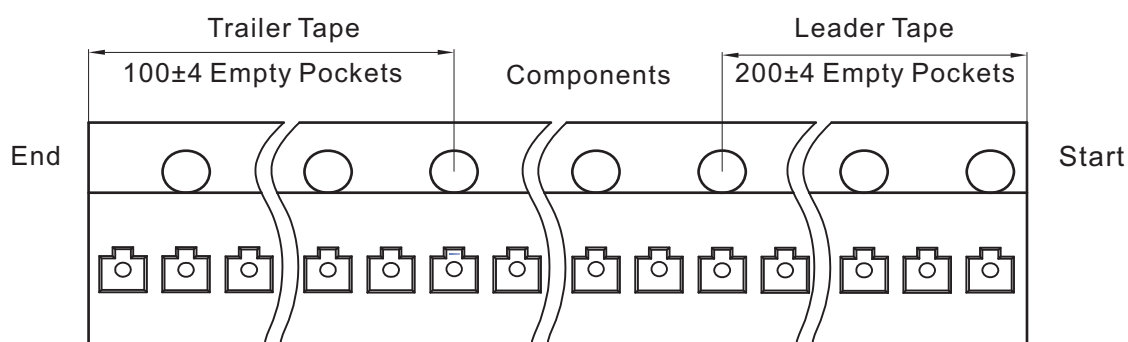
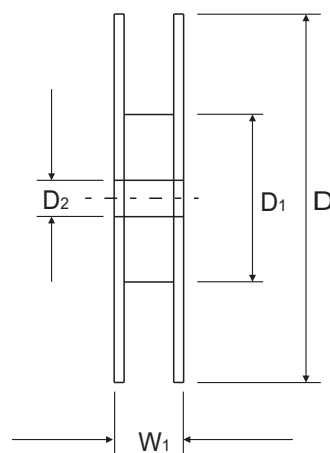
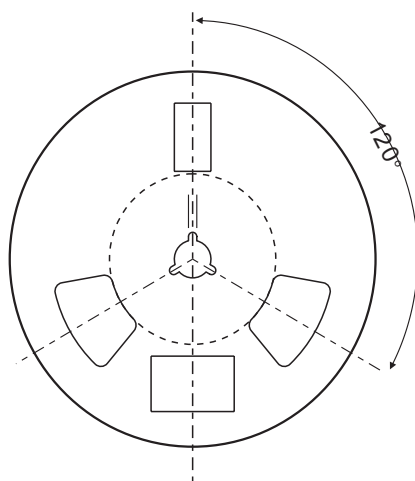
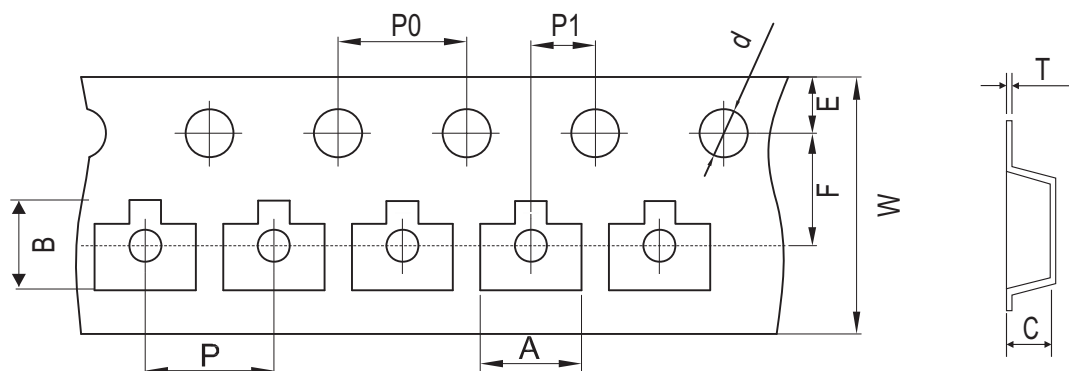


Fig.8 - $P_c \text{ --- } T_a$



Reel Taping Specification

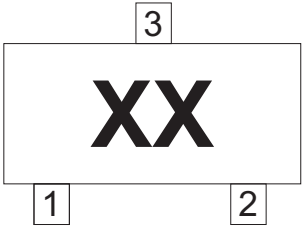


SOT-723	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.33 ± 0.05	1.45 ± 0.05	0.61 ± 0.05	1.50 ± 0.10	178 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.052 ± 0.002	0.057 ± 0.002	0.024 ± 0.002	0.059 ± 0.004	7.008 ± 0.078	2.142 ± 0.039	0.512 ± 0.039

SOT-723	SYMBOL	E	F	P	P0	P1	W	W1
	(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

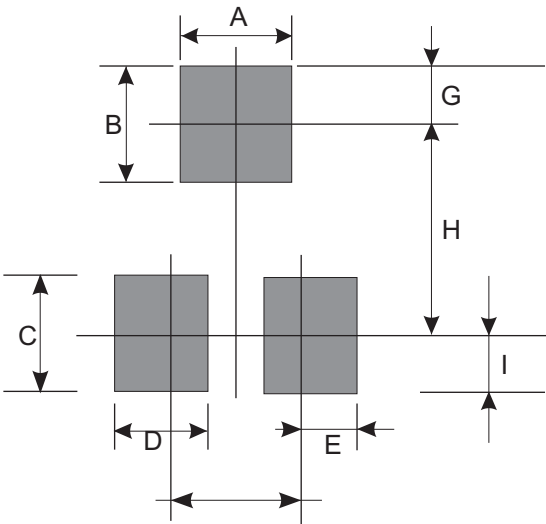
Part Number	Rank	Marking Code
2SC5658-HF	Q	BQ
	R	BR
	S	BS



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