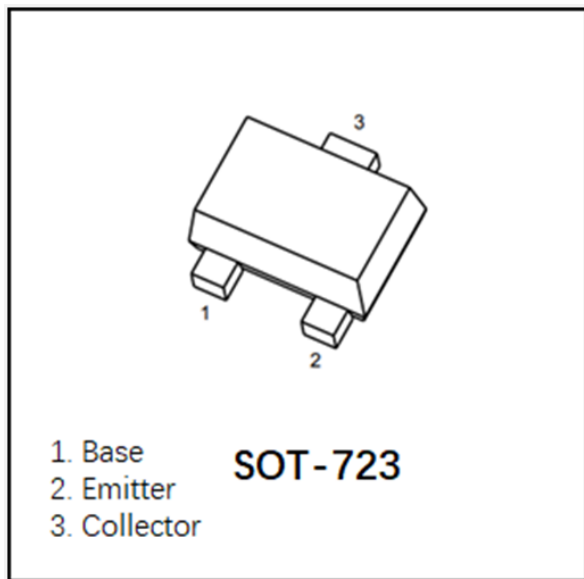


NPN Transistor



Features

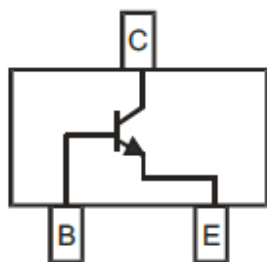
- Epoxy meets UL-94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "HF"
- NPN

Mechanical Data

- **Package:** SOT-723
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:**

2SC5658-Q	BQ
2SC5658-R	BR
2SC5658-S	BS

Equivalent circuit



Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V	$I_C=50\mu A, I_E=0$	60
Collector-Emitter Voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	50
Emitter-Base Voltage	V_{EBO}	V	$I_E=50\mu A, I_C=0$	7
Collector Current	I_C	A		0.15
Collector Power Dissipation	P_C	mW		100
Operation Junction Temperature	T_j	°C		150
Storage Temperature	T_{stg}	°C		-55 to +150

2SC5658

■ Electrical Characteristics (Ta=25°C unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Type	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=50\mu A, I_E=0$	60		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	50		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=50\mu A, I_C=0$	7		
Collector-base cut-off current	I_{CBO}	μA	$V_{CB}=60V, I_E=0$			0.1
Emitter-base cut-off current	I_{EBO}	μA	$V_{EB}=7V, I_C=0$			0.1
DC current gain	h_{FE}		$V_{CE}=6V, I_C=1mA$	120		560
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=50mA, I_B=5mA$			0.4
Transition frequency	f_T	MHz	$V_{CE}=12V, I_C=2mA, f=100MHz$		160	
Collector-base output capacitance	C_{ob}	pF	$V_{CB}=12V, I_E=0, f=1MHz$		2.0	3.5

■ CLASSIFICATION OF HFE

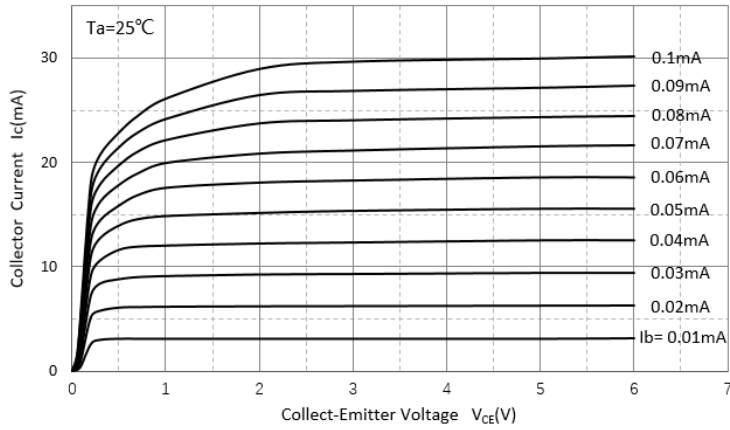
Rank	Q	R	S
Range	120-270	180-390	270-560

■ Ordering Information (Example)

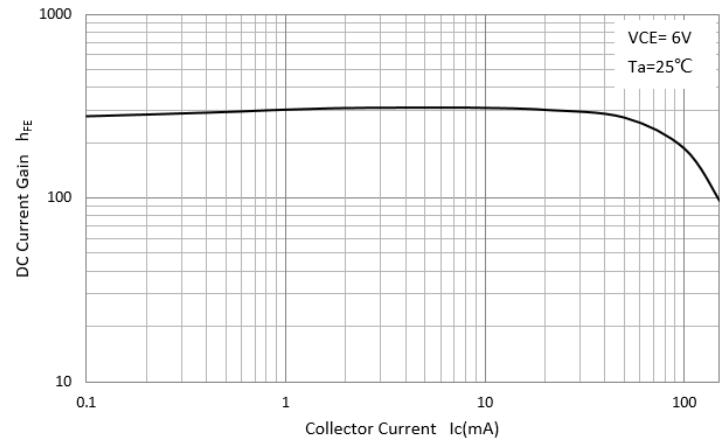
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
2SC5658	F2	Approximate 0.0013	8000	80000	320000	7" reel

■ Characteristics (Typical)

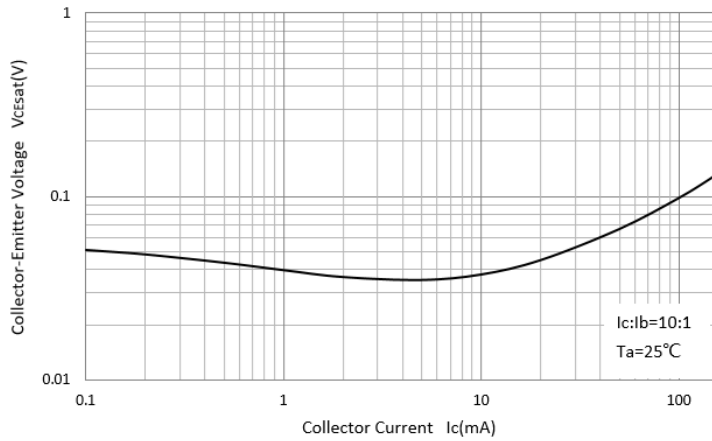
Static Characteristic



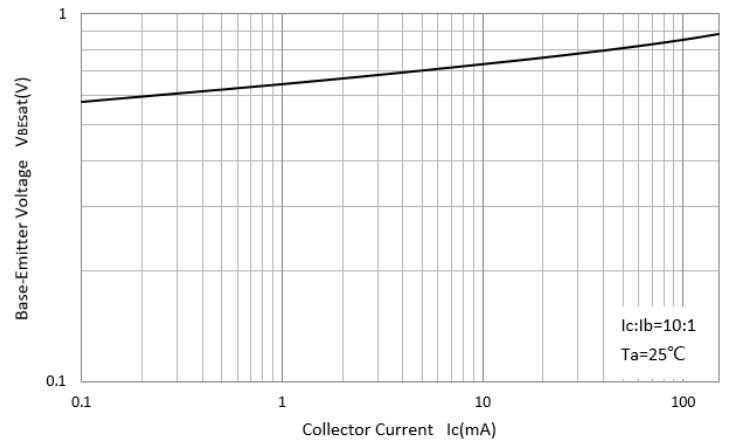
DC Current Gain



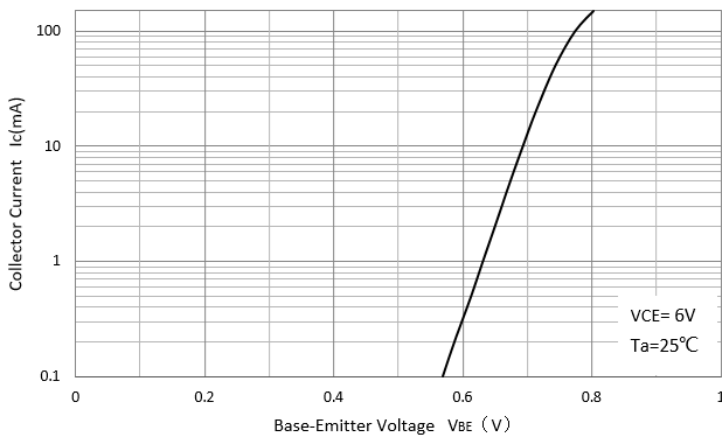
Collector-Emitter Saturation Voltage



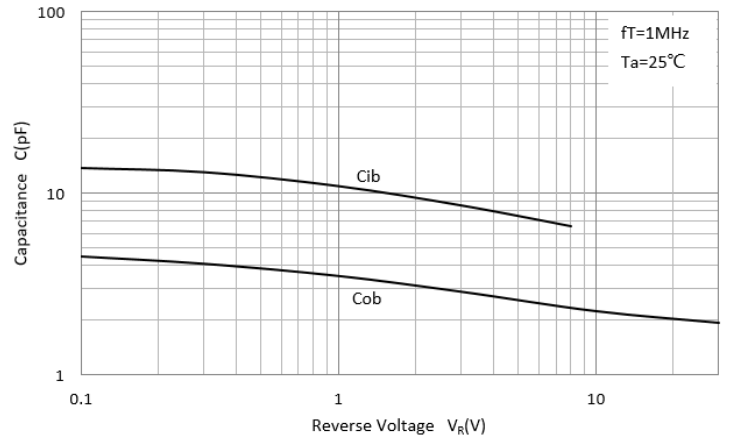
Base-Emitter Saturation Voltage



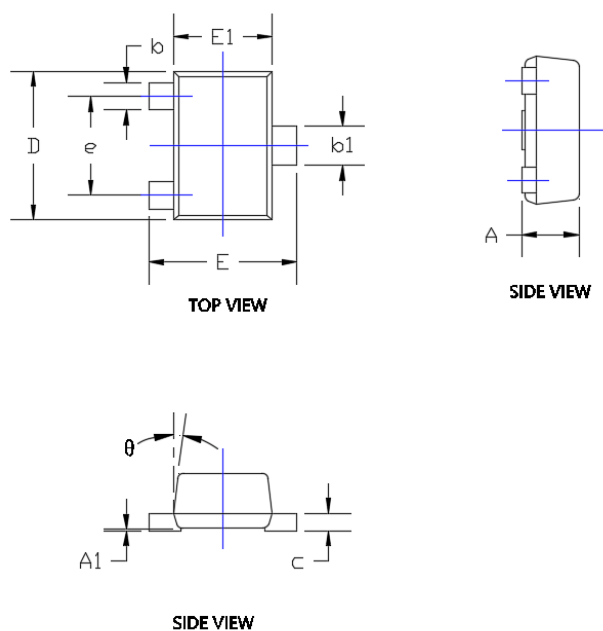
Base-Emitter On Voltage



$C_{ob}/C_{ib}-V_{CB}/V_{EB}$

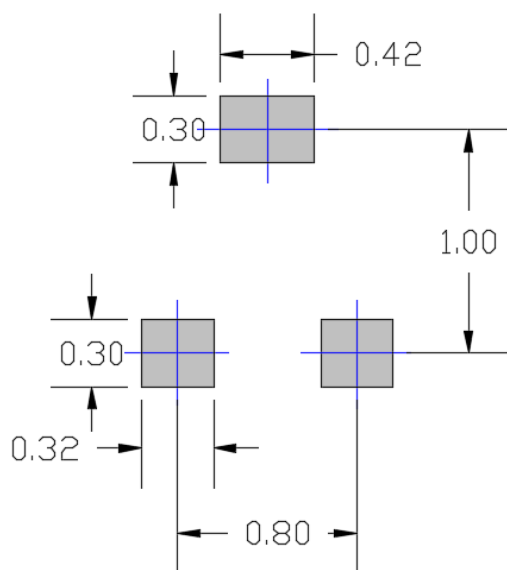


■SOT-723 Package Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.017	0.022	0.430	0.550
A1	0.000	0.002	0.000	0.050
b	0.007	0.011	0.170	0.270
b1	0.011	0.015	0.270	0.370
c	0.003	0.008	0.080	0.200
D	0.045	0.049	1.150	1.250
E	0.045	0.049	1.150	1.250
E1	0.030	0.033	0.750	0.850
e	0.031TYP.		0.800TYP.	
θ	7°REF.		7°REF.	

■SOT-723 Suggested Pad Layout



NOTE:

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

Disclaimer

The information presented in this document is for reference only. Shanghai Sunco Electronics Co., Ltd reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Russiansunco or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.russiansunco.com](http://www.russiansunco.com) , or consult your nearest Russiansunco's sales office for further assistance.