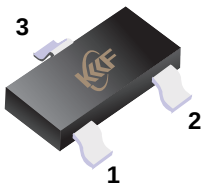
香港科范微半导体电子有限公司
HongKong KeFan Wei Semiconductor Electronics Co., Ltd.

2SC5658

NPN Transistors



1. Base
2. Emitter
3. Collector

Simplified outline(SOT-723)

Features

- Low C_{ob}

Absolute Maximum Ratings Ta = 25℃

Symbol	Parameter	Limit	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current -Continuous	150	mA
P_C	Collector Dissipation	100	mW
T_j	Junction temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

Electrical Characteristics Ta = 25℃

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

Classification of h_{fe}

Type	2SC5658-Q	2SC5658-R	2SC5658-S
Range	120-270	180-390	270-560
Marking	BQ	BR	BS

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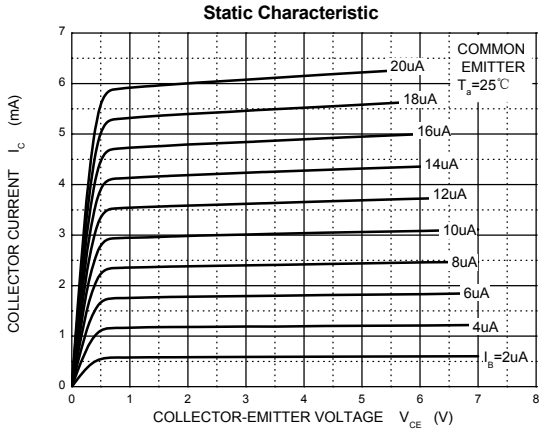
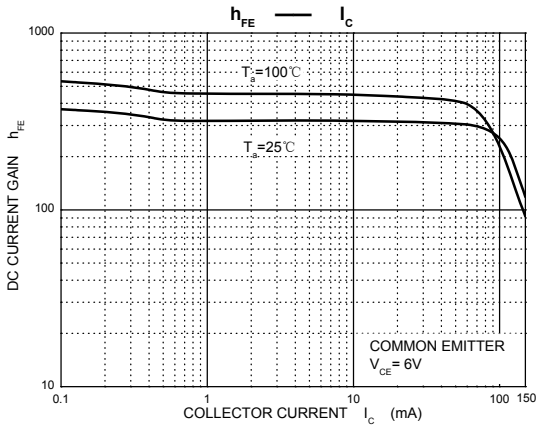
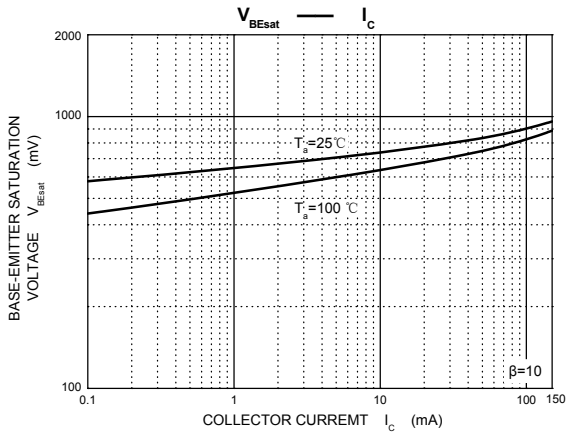
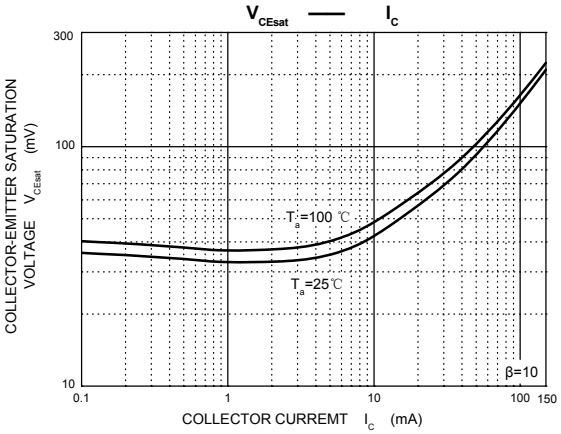
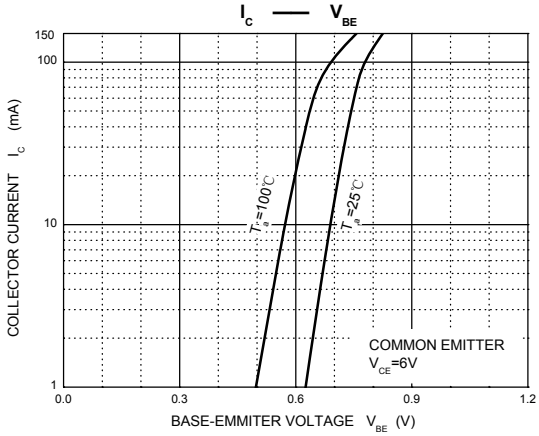
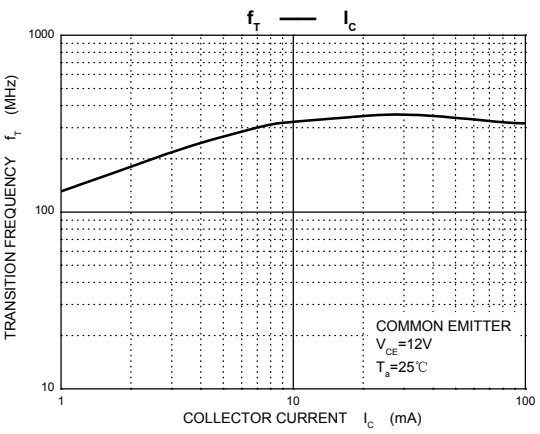

Static Characteristic
COMMON EMITTER
T_a=25℃
20uA
18uA
16uA
14uA
12uA
10uA
8uA
6uA
4uA
I_B=2uA
COLLECTOR CURRENT I_C (mA)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

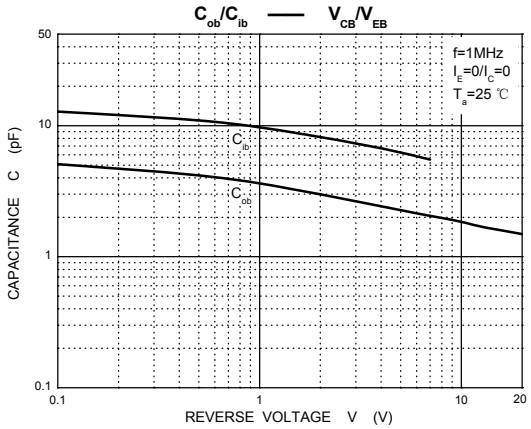

h_{FE} — I_C
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}= 6V
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)

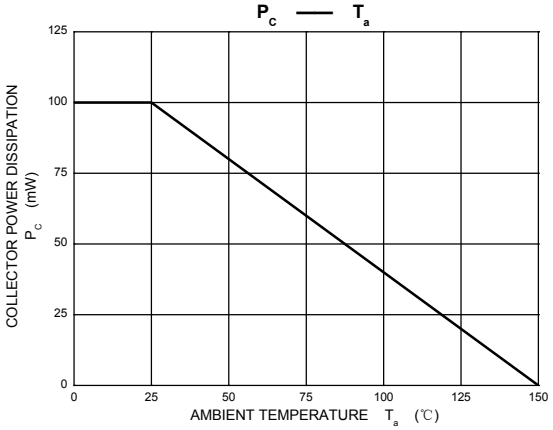

V_{BEsat} — I_C
T_a=25℃
T_a=100 ℃
β=10
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURREMT I_C (mA)


V_{CEsat} — I_C
T_a=100 ℃
T_a=25℃
β=10
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURREMT I_C (mA)


I_C — V_{BE}
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=6V
COLLECTOR CURRENT I_C (mA)
BASE-EMMITER VOLTAGE V_{BE} (V)


f_T — I_C
COMMON EMITTER
V_{CE}=12V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)


C_{ob}/C_{ib} — V_{CB}/V_{EB}
f=1MHz
I_E=0/I_C=0
T_a=25 ℃
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
AMBIENT TEMPERATURE T_a (℃)

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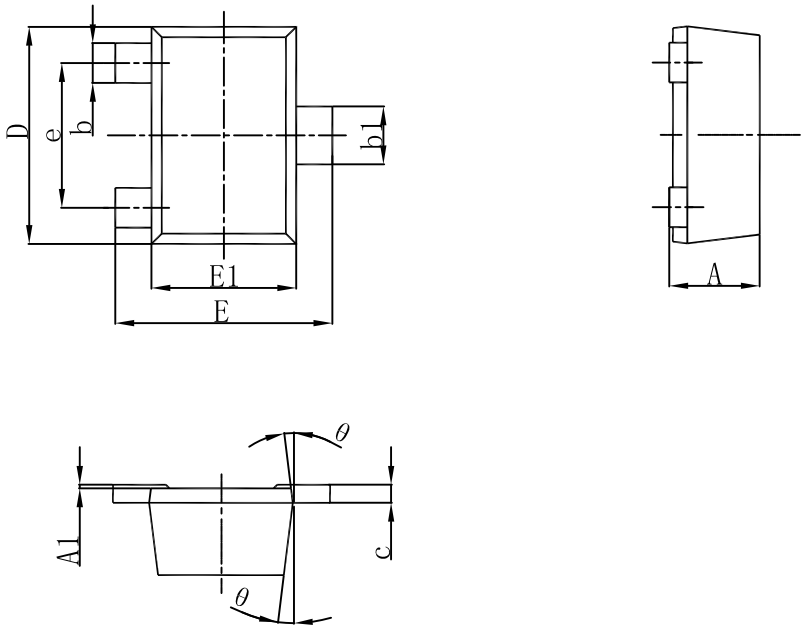
■ SOT-723



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b	b1	c	D	E	E1
mm	0.43 0.50	0.05	0.17 0.27	0.27 0.37	0.08 0.15	1.15 1.25	0.15 0.25	0.75 0.85