2SC5209

FOR RELAY DRAIVE POWER SUPPLY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

2SC5209 is a silicon NPN epitaxial type transistor. It designed with high voltage, high collector current and high hFE.

Complementary with 2SA1944.

FEATURE

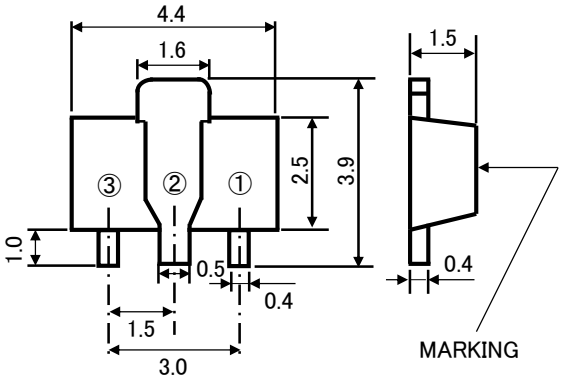
- Small package for mounting.
- High hFE hFE=600～1800
- Small collector to emitter saturation voltage.
  VCE(sat)=0.15V typ (@IC=500mA, IB=10mA)
- High voltage VCEO=50V

APPLICATION

Audio machine, VTR, relay drive of other electronic machine, power supply.

OUTLINE DRAWING

UNIT:mm



TERMINAL CONNECTOR

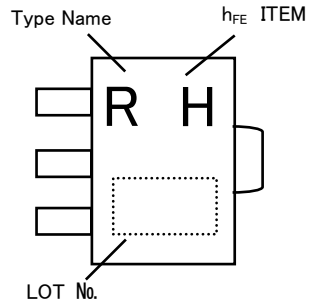
①:BASE
②:COLLECTOR
③:EMITTER

JEITA:SC-62
JEDEC:SOT-89

MAXIMUM RATING(Ta=25℃)

SYMBOL	PARAMETER	RATING	UNIT
V_{CBO}	Collector to Base voltage	50	V
V_{EBO}	Emitter to Base voltage	6	V
V_{CEO}	Collector to Emitter voltage	50	V
I_C	Collector current	1	A
I_{CM}	Peak collector current	2	A
P_C	Collector dissipation(Ta=25℃)	500	mW
T_j	Junction temperature	+150	℃
T_{stg}	Storage temperature	−55～+150	℃

MARKING



ELECTRICAL CHARACTERISTICS(Ta=25℃)

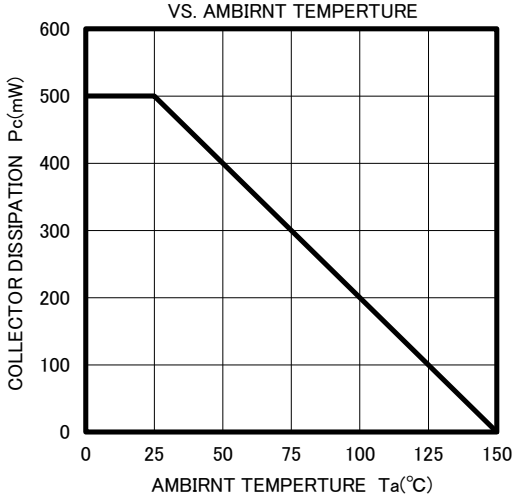
SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{(BR)CBO}$	C to B breakdown voltage	I_C=10μA, I_E=0mA	50	−	−	V
$V_{(BR)EBO}$	E to B breakdown voltage	I_E=10μA, I_C=0mA	6	−	−	V
$V_{(BR)CEO}$	C to E breakdown voltage	I_C=1mA, R_{BE}=∞	50	−	−	V
I_{CBO}	Collector cut off current	V_{CB}=40V, I_E=0mA	−	−	0.1	μA
I_{EBO}	Emitter cut off current	V_{EB}=2V, I_C=0mA	−	−	0.1	μA
h_{FE} ※	DC forward current gain	V_{CE}=6V, I_C=100mA	600	−	1800	−
$V_{CE(sat)}$	C to E saturation voltage	I_C=500mA, I_B=10mA	−	0.15	0.5	V
fT	Gain bandwidth product	V_{CE}=10V, I_E=−10mA	−	130	−	MHz
Cob	Collector output capacitance	V_{CB}=10V, I_E=0mA, f=1MHz	−	12	−	pF

※) It shows hFE classification at right table.

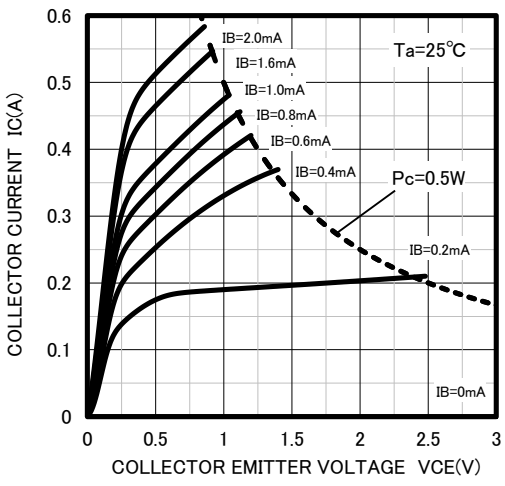
Item	H	J
hFE	600～1200	900～1800

TYPICIAL CHARACTERISTICS

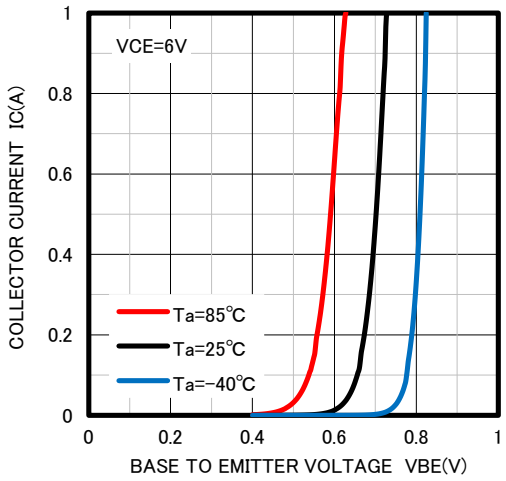
COLLECTOR DISSIPATION
VS. AMBIRNT TEMPERTURE



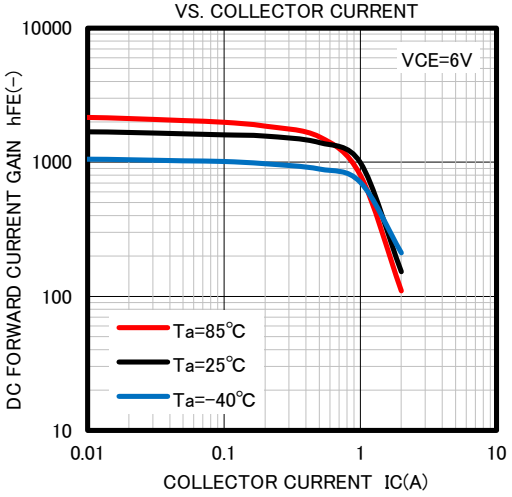
COMMON EMITTER OUTPUT



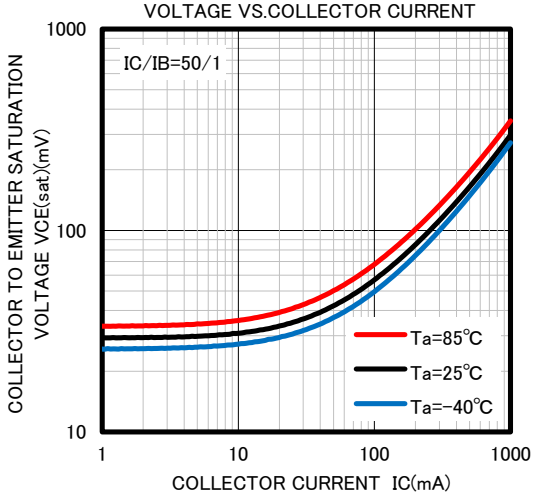
COMMON EMITTER TRANSFER



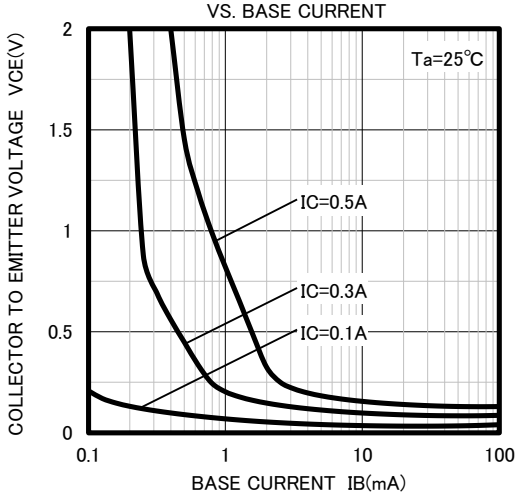
DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



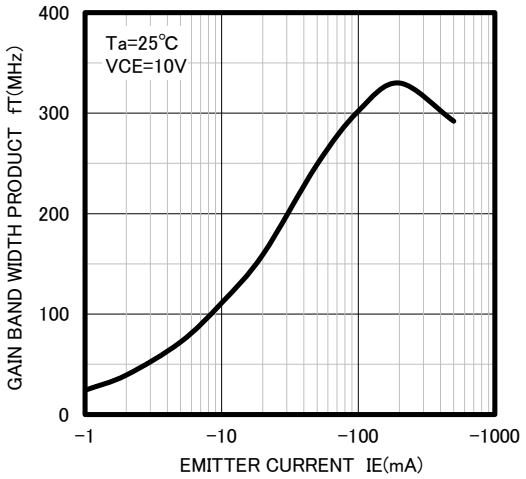
COLLECTOR TO EMITTER SATURATION
VOLTAGE VS.COLLECTOR CURRENT



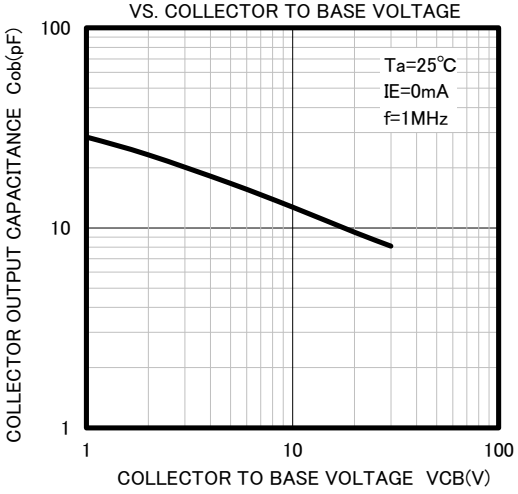
COLLECTOR TO EMITTER VOLTAGE
VS. BASE CURRENT



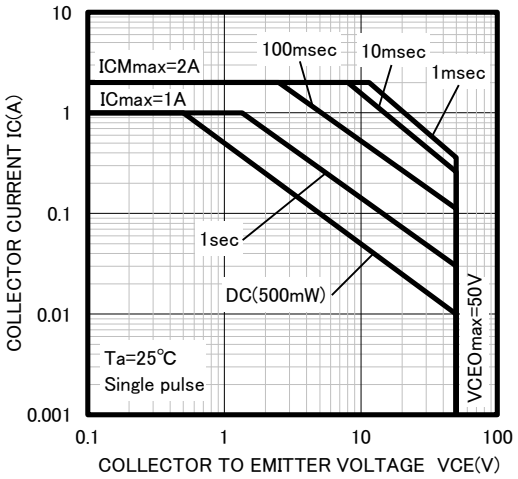
GAIN BAND WDTH PRODUCT
VS.EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE



ASO



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