

〈SMALL-SIGNAL TRANSISTOR〉

2SC5209

**FOR RELAY DRIVE 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

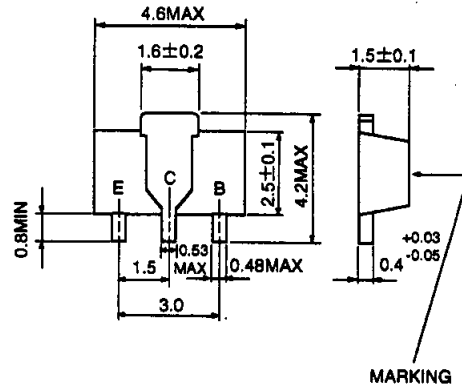
- High voltage $V_{CE0}=50V$
- Small collector to emitter saturation voltage
 $V_{CE(sat)}=0.15V$ typ (@ $I_C=500mA, I_B=10mA$)
- High hFE $h_{FE}=600$ to 1800
- Small package for mounting

APPLICATION

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

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

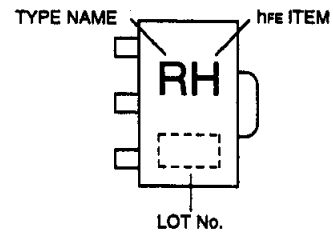
E : EMITTER
C : COLLECTOR
B : BASE
EIAJ : SC-62
JEDEC : -

Note)
The dimension without tolerance represent central value.

MAXIMUM RATINGS ($T_a=25^{\circ}C$)

Symbol	Parameter	Ratings	Unit
V_{CB0}	Collector to Base voltage	50	V
V_{EB0}	Emitter to Base voltage	6	V
V_{CE0}	Collector to Emitter voltage	50	V
I_{CM}	Peak collector current	2	A
I_C	Collector current	1	A
P_C	Collector dissipation($T_a=25^{\circ}C$)	500	mW
T_J	Junction temperature	+150	$^{\circ}C$
T_{stg}	Storage temperature	-55 to +150	$^{\circ}C$

MARKING



ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}C$)

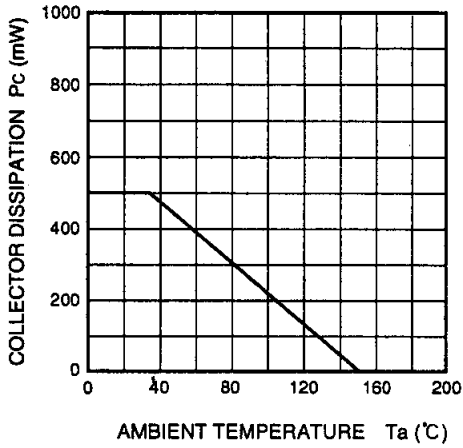
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CBO}$	C to B break down voltage	$I_C=10 \mu A, I_E=0$	50			V
$V_{(BR)EBO}$	E to B break down voltage	$I_E=10 \mu A, I_C=0$	6			V
$V_{(BR)CEO}$	C to E break down voltage	$I_C=1mA, R_{BE}=\infty$	50			V
I_{CBO}	Collector cut off current	$V_{CB}=40V, I_E=0$			0.1	μA
I_{EBO}	Emitter cut off current	$V_{EB}=2V, I_C=0$			0.1	μA
hFE*	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 band width product	$V_{CE}=10V, I_E=-10mA$		130		MHz
C_{ob}	Collector output capacitance	$V_{CB}=10V, I_E=0, f=1MHz$		12		pF

* : It shows hFE classification in right table.

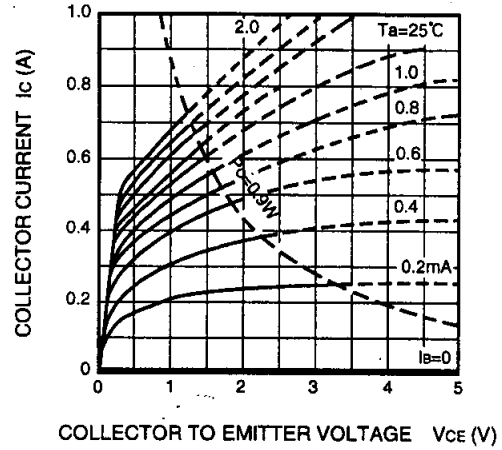
Marking	RH	RJ
hFE	600 to 1200	900 to 1800

TYPICAL CHARACTERISTICS

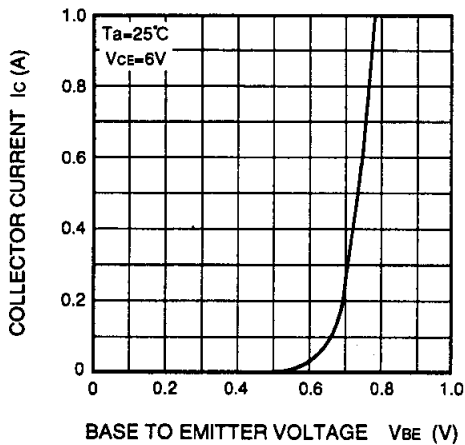
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



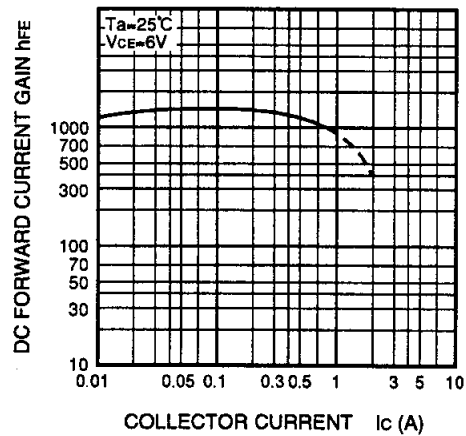
COMMON EMITTER OUTPUT



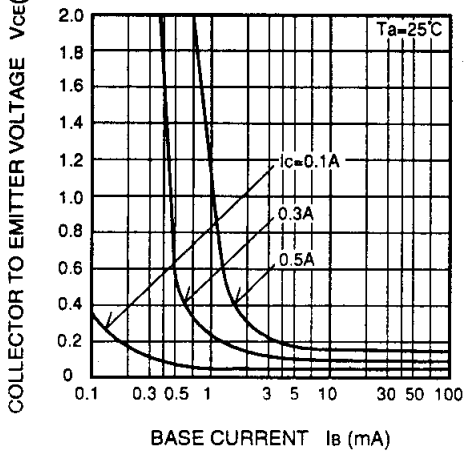
COMMON EMITTER TRANSFER



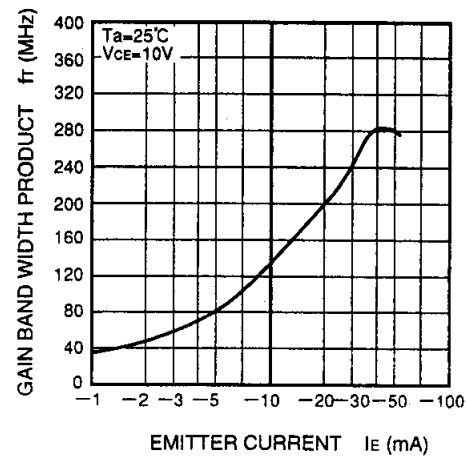
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



COLLECTOR TO EMITTER SATURATION VOLTAGE VS. BASE CURRENT



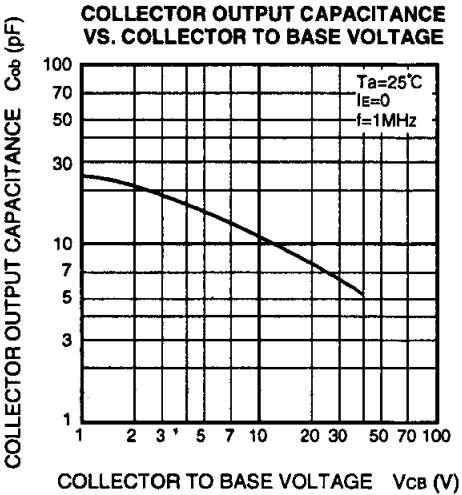
GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



< SMALL-SIGNAL TRANSISTOR >

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SILICON NPN EPITAXIAL TYPE**



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