

〈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**

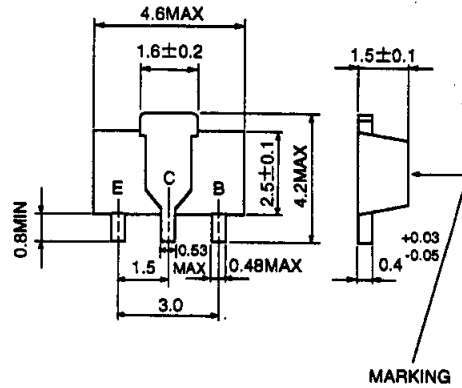
- High voltage  $V_{CE0}=50V$
- Small collector to emitter saturation voltage  $V_{CE(sat)}=0.15V$  typ (@ $I_C=500mA, I_B=10mA$ )
- High hFE  $h_{FE}=600$  to  $1800$
- Small package for mounting

**APPLICATION**

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

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

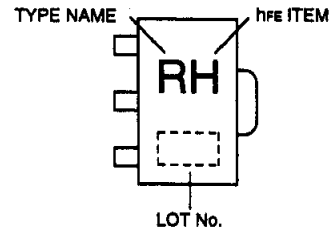
E : EMITTER  
C : COLLECTOR  
B : BASE  
EIAJ : SC-62  
JEDEC : -

Note)  
The dimension without tolerance represent central value.

**MAXIMUM RATINGS (Ta=25°C)**

Symbol	Parameter	Ratings	Unit
V <sub>CB0</sub>	Collector to Base voltage	50	V
V <sub>EB0</sub>	Emitter to Base voltage	6	V
V <sub>CE0</sub>	Collector to Emitter voltage	50	V
I <sub>CM</sub>	Peak collector current	2	A
I <sub>C</sub>	Collector current	1	A
P <sub>C</sub>	Collector dissipation(Ta=25°C)	500	mW
T <sub>J</sub>	Junction temperature	+150	°C
T <sub>stg</sub>	Storage temperature	-55 to +150	°C

**MARKING**



**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

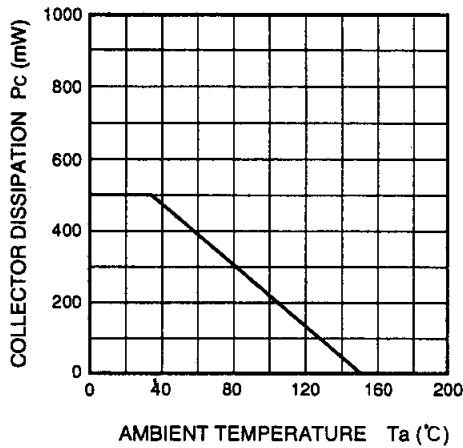
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>(BR)CBO</sub>	C to B break down voltage	I <sub>C</sub> =10 μA, I <sub>E</sub> =0	50			V
V <sub>(BR)EBO</sub>	E to B break down voltage	I <sub>E</sub> =10 μA, I <sub>C</sub> =0	6			V
V <sub>(BR)CEO</sub>	C to E break down voltage	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	50			V
I <sub>CB0</sub>	Collector cut off current	V <sub>CB</sub> =40V, I <sub>E</sub> =0			0.1	μA
I <sub>EB0</sub>	Emitter cut off current	V <sub>EB</sub> =2V, I <sub>C</sub> =0			0.1	μA
hFE*	DC forward current gain	V <sub>CE</sub> =6V, I <sub>C</sub> =100mA	600		1800	—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>C</sub> =500mA, I <sub>B</sub> =10mA		0.15	0.5	V
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> =10V, I <sub>E</sub> =10mA		130		MHz
C <sub>ob</sub>	Collector output capacitance	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		12		pF

\* : It shows hFE classification in right table.

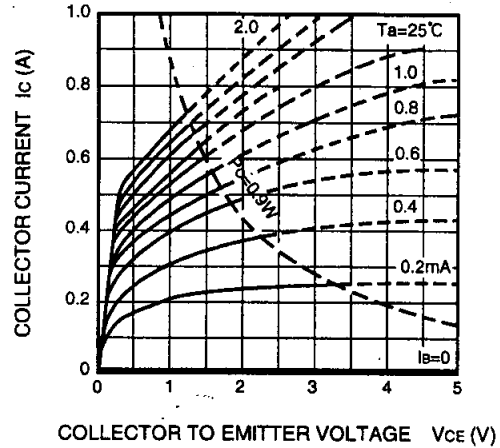
Marking	RH	RJ
hFE	600 to 1200	900 to 1800

TYPICAL CHARACTERISTICS

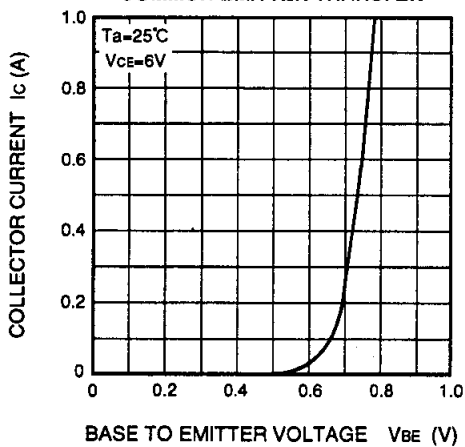
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



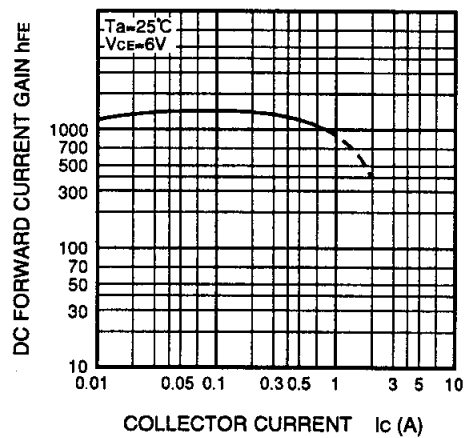
COMMON EMITTER OUTPUT



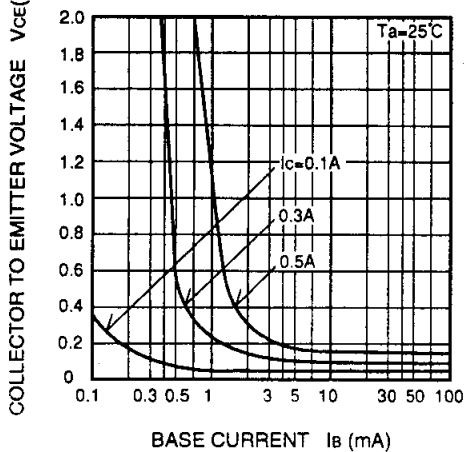
COMMON EMITTER TRANSFER



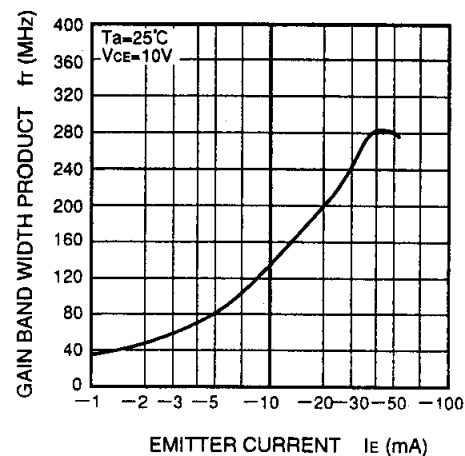
DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



COLLECTOR TO EMITTER SATURATION  
VOLTAGE VS. BASE CURRENT



GAIN BAND WIDTH PRODUCT  
VS. EMITTER CURRENT

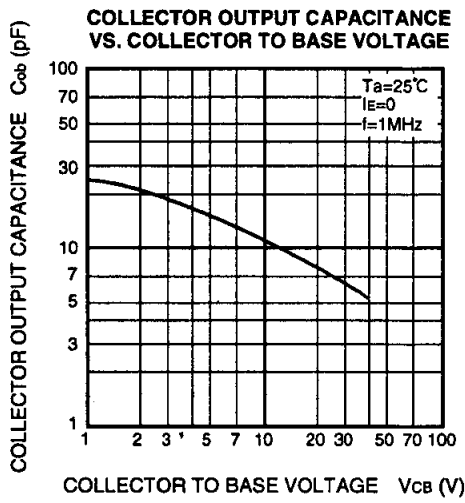


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