

DESCRIPTION

2SC3052 is a super mini silicon NPN epitaxial type transistor designed for low frequency voltage amplify application.

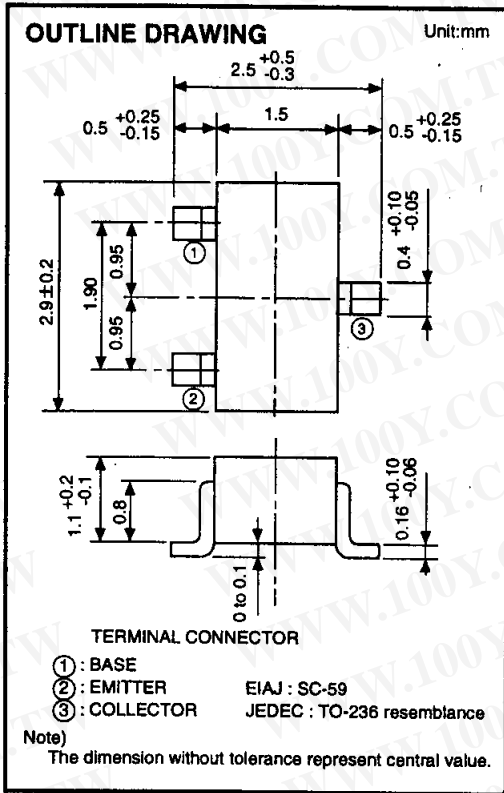
FEATURE

- Low collector to emitter saturation voltage
VCE(sat)=0.3V max (@ IC=100mA, IB=10mA)
- Excellent linearity of DC forward current gain
- Super mini package for easy mounting

APPLICATION

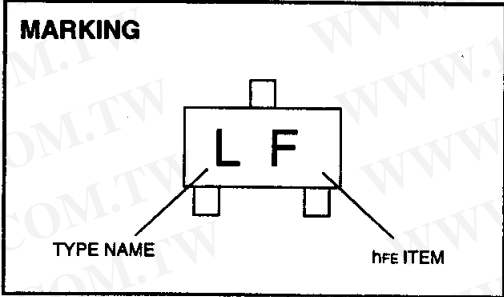
For hybrid IC, small type machine low frequency voltage amplify application.

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



MAXIMUM RATINGS (Ta=25°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 _C	Collector current	200	mA
P _C	Collector dissipation (Ta=25°C)	150	mW
T _j	Junction temperature	+125	°C
T _{stg}	Storage temperature	-55 to +125	°C



ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V(BR) _{CEO}	C to E break down voltage	I _C =100 μA, R _{BE} =∞	50			V
I _{CB0}	Collector cut off current	V _{CB} =50V, I _E =0			0.1	μA
I _{EB0}	Emitter cut off current	V _{EB} =6V, I _C =0			0.1	μA
hFE *	DC forward current gain	V _{CE} =6V, I _C =1mA	150		800	—
hFE	DC forward current gain	V _{CE} =6V, I _C =0.1mA	90			—
V _{CE(sat)}	C to E saturation voltage	I _C =100mA, I _B =10mA			0.3	V
f _T	Gain band width product	V _{CE} =6V, I _E =-10mA		200		MHz
C _{ob}	Collector output capacitance	V _{CB} =6V, I _E =0, f=1MHz		2.5		pF
NF	Noise figure	V _{CE} =6V, I _E =-0.1mA, f=1kHz, R _G =2kΩ			15	dB

* : It shows hFE classification in right table.

Item	E	F	G
hFE	150 to 300	250 to 500	400 to 800
Marking	LE	LF	LG

〈SMALL-SIGNAL TRANSISTOR〉

2SC3052

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

2SC3052 is a super mini silicon NPN epitaxial type transistor designed for low frequency voltage amplify application.

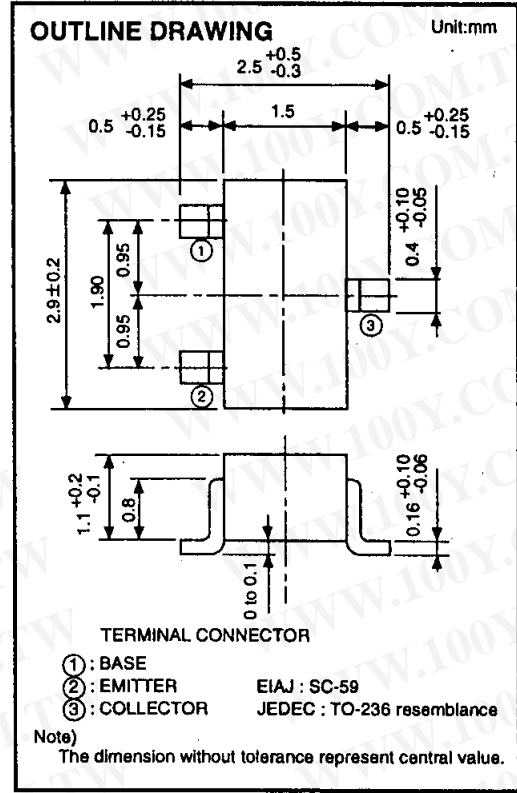
FEATURE

- Low collector to emitter saturation voltage
 $V_{CE(sat)}=0.3V$ max (@ $I_C=100mA, I_B=10mA$)
- Excellent linearity of DC forward current gain
- Super mini package for easy mounting

APPLICATION

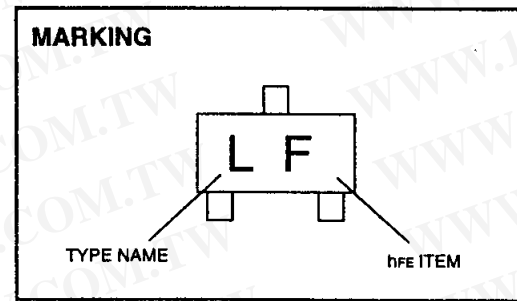
For hybrid IC, small type machine low frequency voltage amplify application.

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



MAXIMUM RATINGS (Ta=25°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 _C	Collector current	200	mA
P _C	Collector dissipation(Ta=25°C)	150	mW
T _j	Junction temperature	+125	°C
T _{stg}	Storage temperature	-55 to +125	°C



ELECTRICAL CHARACTERISTICS (Ta=25°C)

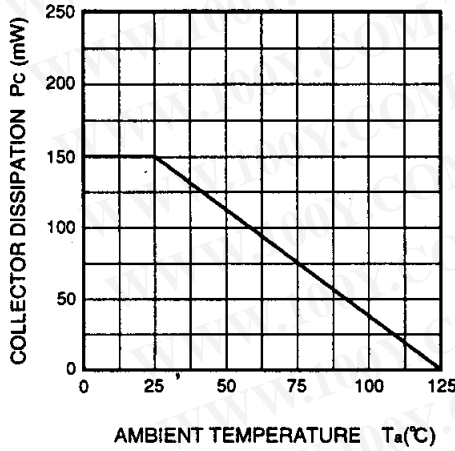
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V _{(BR)CEO}	C to E break down voltage	I _C =100 μA, R _{BE} =∞	50			V
I _{CBO}	Collector cut off current	V _{CB} =50V, I _E =0			0.1	μA
I _{EB0}	Emitter cut off current	V _{EB} =6V, I _C =0			0.1	μA
h _{FE} *	DC forward current gain	V _{CE} =6V, I _C =1mA	150		800	—
h _{FE}	DC forward current gain	V _{CE} =6V, I _C =0.1mA	90			—
V _{CE(sat)}	C to E saturation voltage	I _C =100mA, I _B =10mA			0.3	V
f _T	Gain band width product	V _{CE} =6V, I _E =-10mA		200		MHz
C _{ob}	Collector output capacitance	V _{CB} =6V, I _E =0, f=1MHz		2.5		pF
NF	Noise figure	V _{CE} =6V, I _E =-0.1mA, f=1kHz, R _G =2kΩ			15	dB

* : It shows h_{FE} classification in right table.

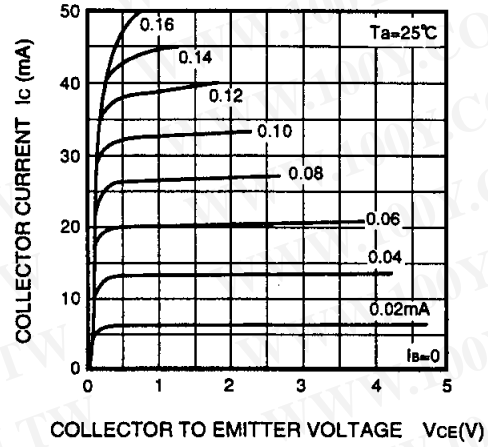
Item	E	F	G
h _{FE}	150 to 300	250 to 500	400 to 800
Marking	LE	LF	LG

TYPICAL CHARACTERISTICS

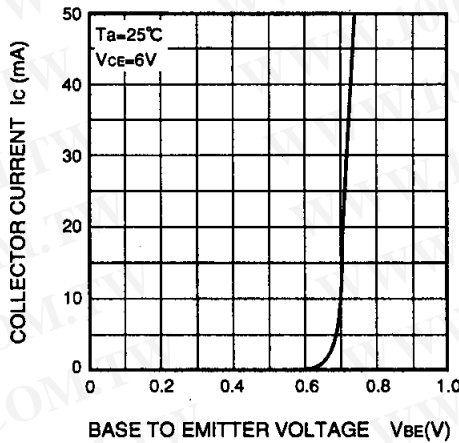
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



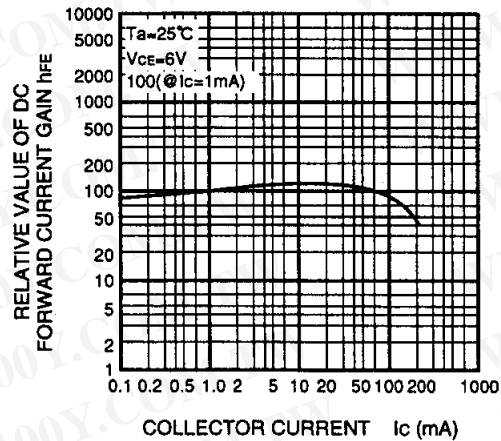
COMMON EMITTER OUTPUT



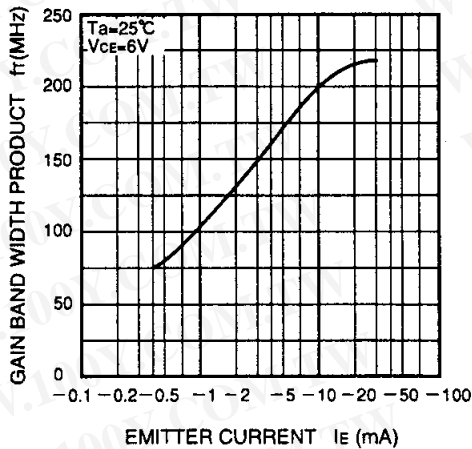
COMMON EMITTER TRANSFER



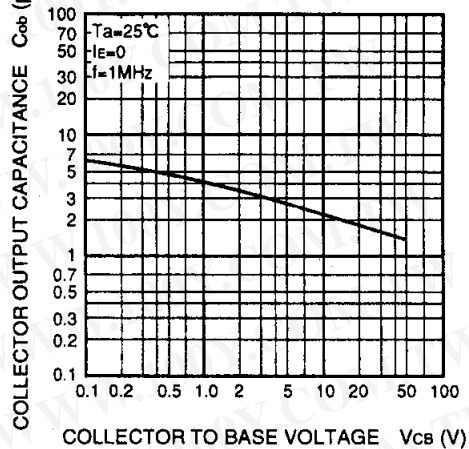
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



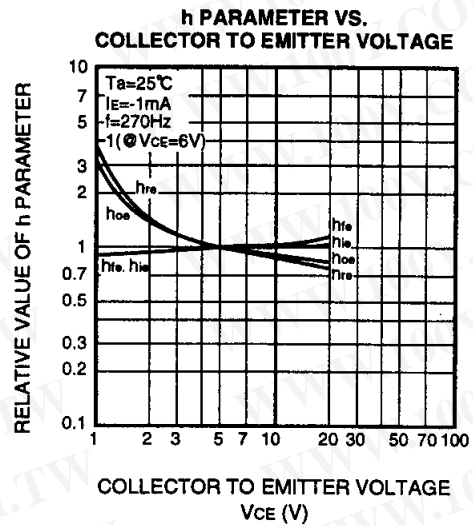
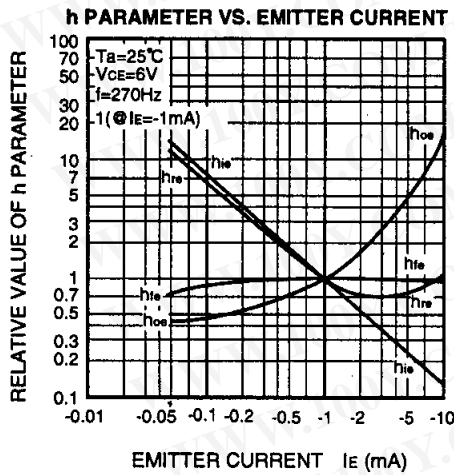
GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE



COMMON EMITTER h PARAMETER (TYPICAL VALUE)

Symbol	Parameter	Test conditions	Limits	Unit
h_{ie}	Closed loop small signal input impedance	$T_a=25^\circ\text{C}$ $V_{CE}=6\text{V}$ $I_E=-1\text{mA}$ $f=270\text{Hz}$	8.5	k Ω
h_{re}	Open loop small signal reverse voltage amplification factor		0.1	$\times 10^{-3}$
h_{fe}	Closed loop small signal forward current amplification factor		300	—
h_{oe}	Open loop small signal output admittance		5.5	μS

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

ISAHAYA ELECTRONICS CORPORATION

<http://www.idc-com.co.jp>
6-41, TSUKUBA, ISAHAYA, NAGASAKI, 854-0065, JAPAN

Keep safety in your circuit designs !

Isahaya Electronics Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.

Notes regarding these materials

- These materials are intended as reference to assist out customers in the selection of the Isahaya semiconductor product best suited to the customer's application, they do not convey any license under any intellectual property rights, or any other rights, belonging to Isahaya Electronics Corporation or a third party.
- Isahaya Electronics Corporation assumes no responsibility for any damage, or infringement of any third-party rights, originating in the use of any product data, diagrams, charts or circuit application examples contained in the materials.
- All information contained in these materials, including product data, diagrams and charts, represent information on products at the time of publication of these materials, and are subject to change by Isahaya Electronics Corporation without notice due to product improvements or other reasons. It is therefore recommended that customers contact Isahaya Electronics Corporation or authorized Isahaya Semiconductor product distributor for the latest product information before purchasing a product listed herein.
- The prior written approval of Isahaya Electronics Corporation is necessary to reprint or reproduce in whole or in part these materials.
- If these products or technologies are subject to the Japanese export control restrictions, they must be exported under a license from the Japanese government and cannot be imported into a country other than the approved destination. Any diversion or reexport contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.
- Please contact Isahaya Electronics Corporation or an authorized Isahaya Semiconductor product distributor for further details on these materials or the products contained therein.