

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**

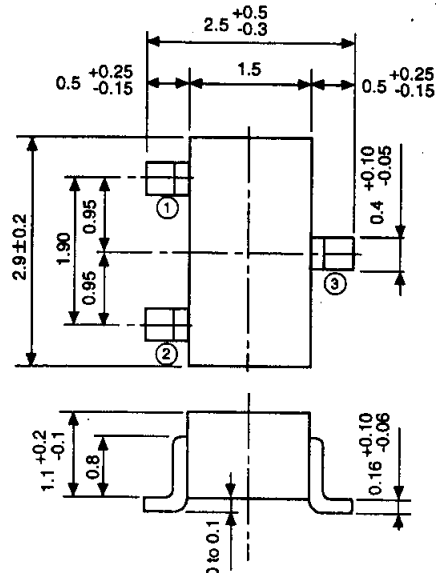
- Low collector to emitter saturation voltage  
V<sub>CE(sat)</sub>=0.3V max (@ I<sub>C</sub>=100mA, I<sub>B</sub>=10mA)
- Excellent linearity of DC forward current gain
- Super mini package for easy mounting

**APPLICATION**

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

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

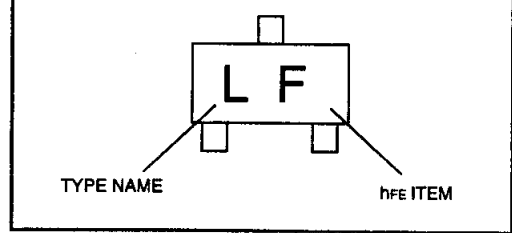
- ① : BASE
  - ② : EMITTER
  - ③ : COLLECTOR
- EIAJ : SC-59  
JEDEC : TO-236 resemblance

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>CEO</sub>	Collector to Emitter voltage	50	V
I <sub>C</sub>	Collector current	200	mA
P <sub>C</sub>	Collector dissipation (Ta=25°C)	150	mW
T <sub>j</sub>	Junction temperature	+125	°C
T <sub>stg</sub>	Storage temperature	-55 to +125	°C

**MARKING**



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

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

\* : It shows h<sub>FE</sub> classification in right table.

Item	E	F	G
h <sub>FE</sub>	150 to 300	250 to 500	400 to 800
Marking	LE	LF	LG

〈SMALL-SIGNAL TRANSISTOR〉

# 2SC3052

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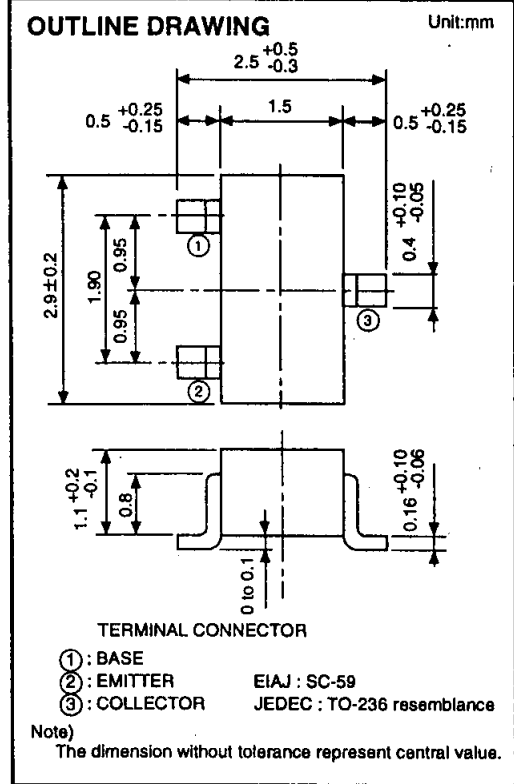
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## FEATURE

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## APPLICATION

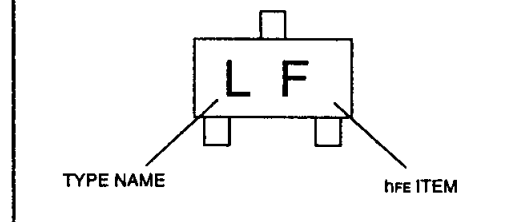
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## MARKING



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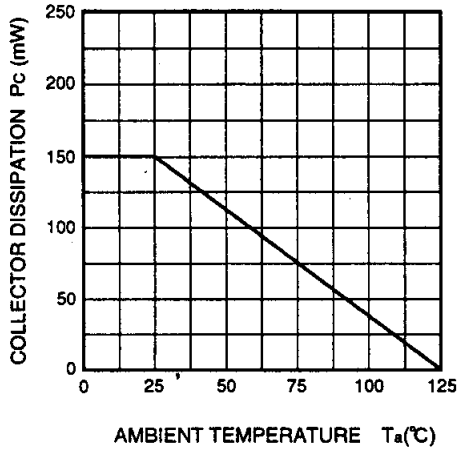
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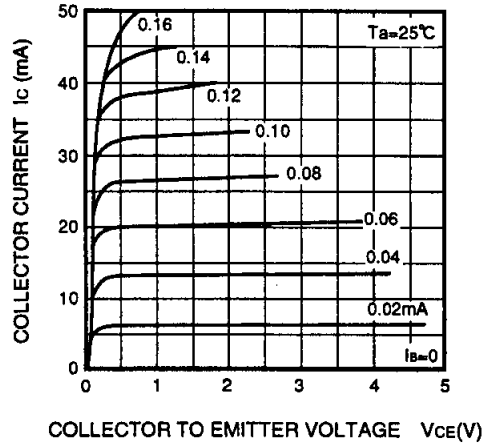
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**TYPICAL CHARACTERISTICS**

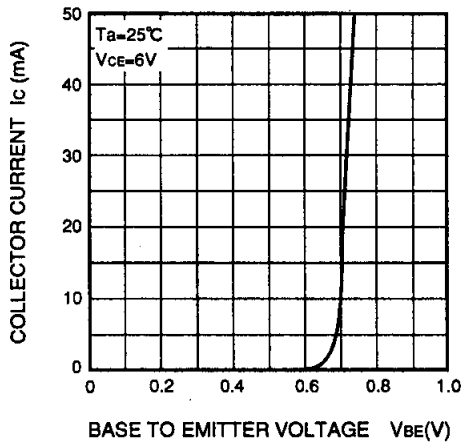
**COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE**



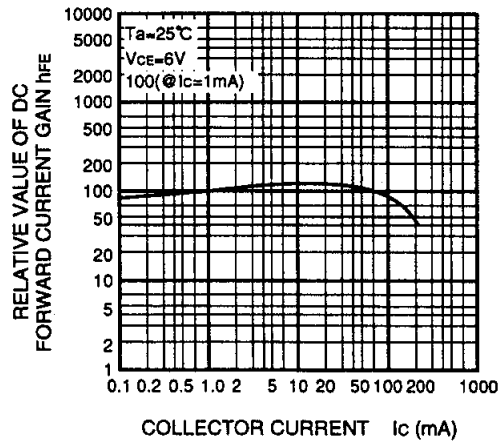
**COMMON EMITTER OUTPUT**



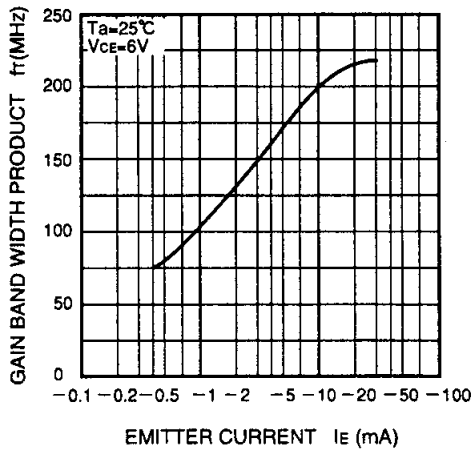
**COMMON EMITTER TRANSFER**



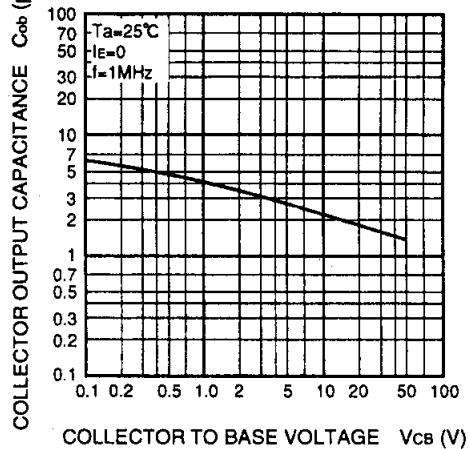
**DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT**



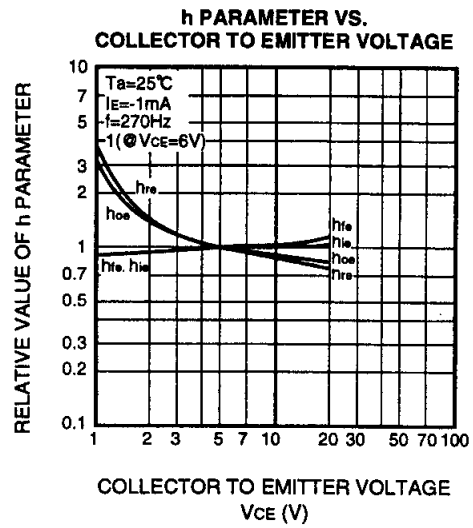
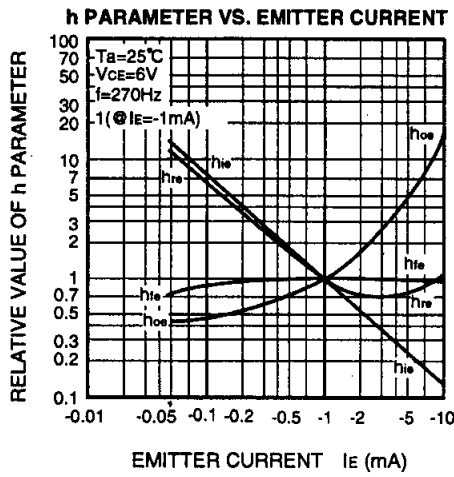
**GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT**



**COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE**



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**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	$\text{k}\Omega$
$h_{re}$	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	$\mu\text{S}$

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The logo for IDC ISAHAYA ELECTRONICS CORPORATION. It features the letters 'IDC' in a stylized blue font with a red triangle above the 'I'. To the right of 'IDC', the words 'ISAHAYA ELECTRONICS CORPORATION' are written in a black, italicized, serif font.

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