

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

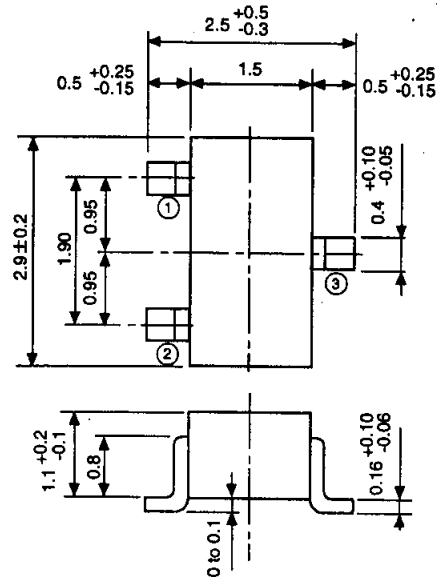
- Low collector to emitter saturation voltage
 $V_{CE(sat)} = 0.3V$ max (@ $I_C = 100mA$, $I_B = 10mA$)
- Excellent linearity of DC forward current gain
- Super mini package for easy mounting

APPLICATION

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

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

① : BASE

② : EMITTER

③ : COLLECTOR

EIAJ : SC-59

JEDEC : TO-236 resemblance

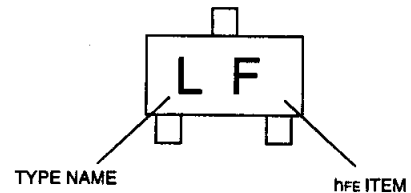
Note)

The dimension without tolerance represent central value.

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{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

MARKING



ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	$I_C = 100 \mu A, R_{BE} = \infty$	50			V
I_{CBO}	Collector cut off current	$V_{CB} = 50V, I_E = 0$			0.1	μA
I_{EBO}	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	$V_{CE} = 6V, I_E = -0.1mA, f = 1kHz, R_G = 2k\Omega$			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

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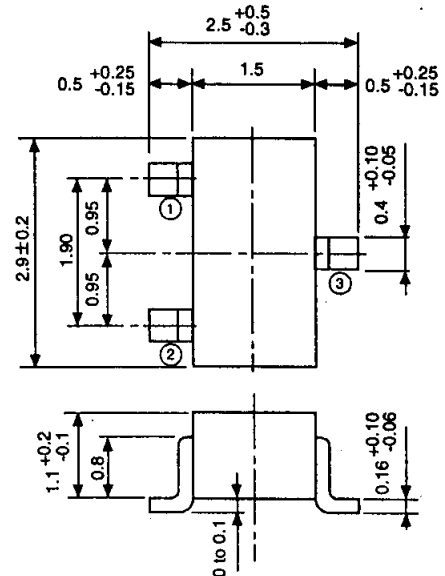
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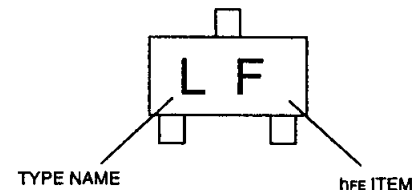
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MARKING



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ELECTRICAL CHARACTERISTICS (Ta=25°C)

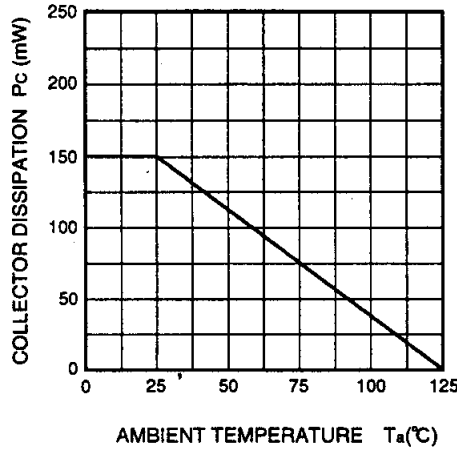
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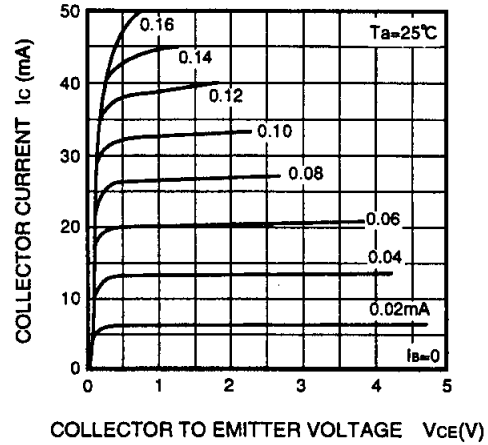
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TYPICAL CHARACTERISTICS

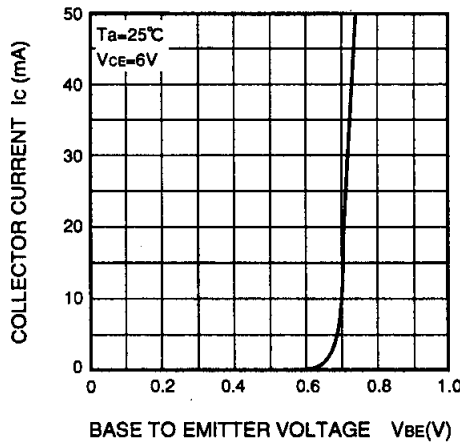
**COLLECTOR DISSIPATION VS.
AMBIENT TEMPERATURE**



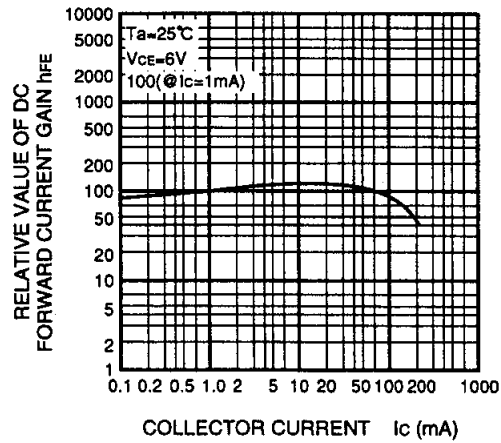
COMMON EMITTER OUTPUT



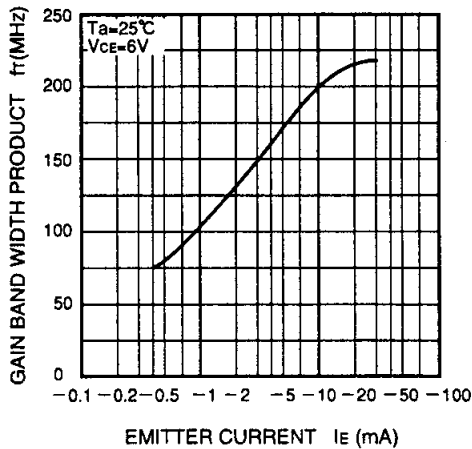
COMMON EMITTER TRANSFER



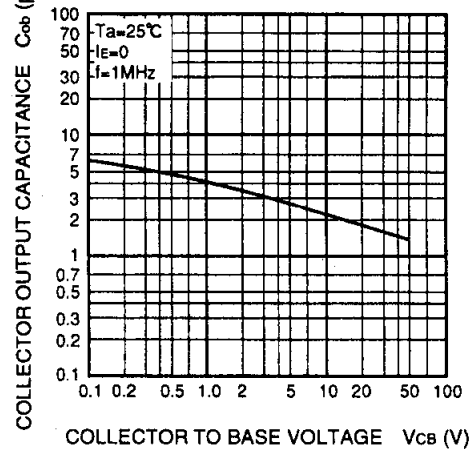
**DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT**



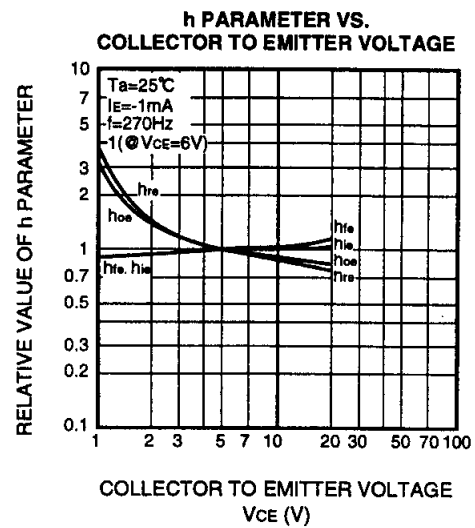
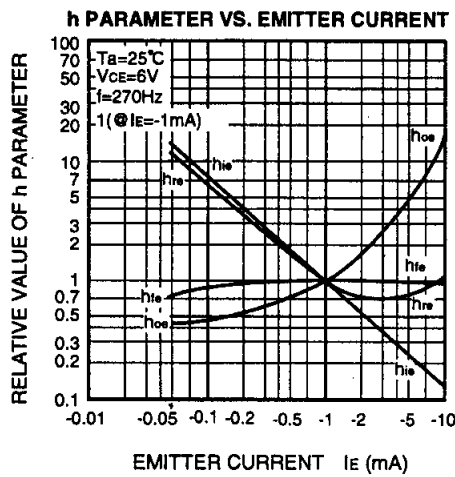
**GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT**



**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	Ta=25°C VCE=6V IE=-1mA f=270Hz	8.5	kΩ
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



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