

FOR LOW FREQUENCY AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL TYPE(mini type)

**DESCRIPTION**

2SC3052 is a mini package resin sealed silicon NPN epitaxial transistor, It is designed for low frequency voltage application.

**FEATURE**

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

**APPLICATION**

For Hybrid IC,small type machine low frequency voltage Amplify application.

**MAXIMUM RATINGS (Ta=25 )**

Symbol	Parameter	Ratings	Unit
V <sub>CBO</sub>	Collector to Base voltage	50	V
V <sub>CEO</sub>	Collector to Emitter voltage	50	V
V <sub>EBO</sub>	Emitter to Base voltage	6	V
I <sub>O</sub>	Collector current	200	mA
P <sub>c</sub>	Collector dissipation	200	mW
T <sub>j</sub>	Junction temperature	+ 150	
T <sub>stg</sub>	Storage temperature	-55 ~ + 150	

**OUTLINE DRAWING** Unit : mm

**TERMINAL CONNECTER**

- : BASE JEITA: SC-59
- : EMITTER JEDEC: Similar to TO-236
- : COLLECTOR

**MARKING**

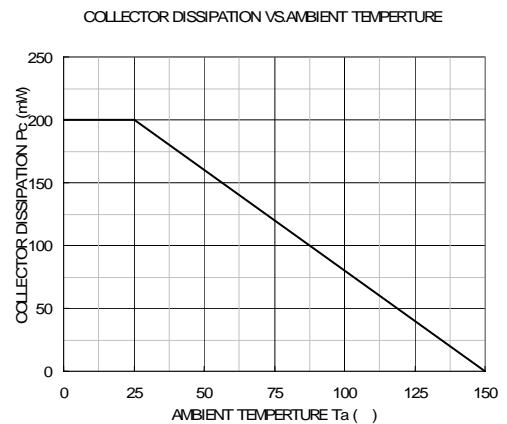
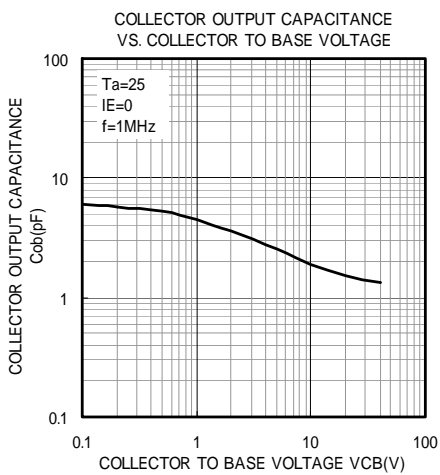
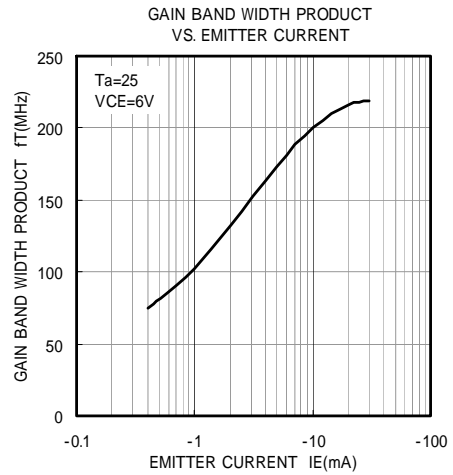
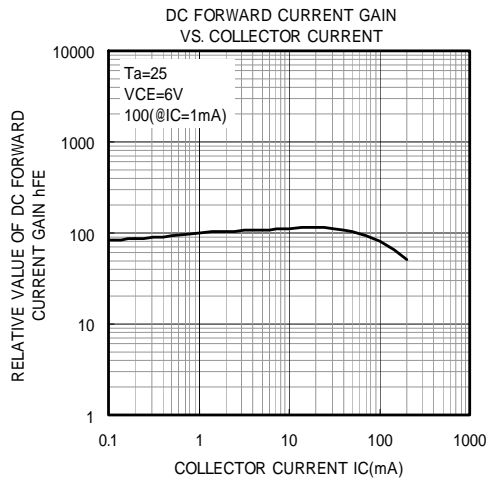
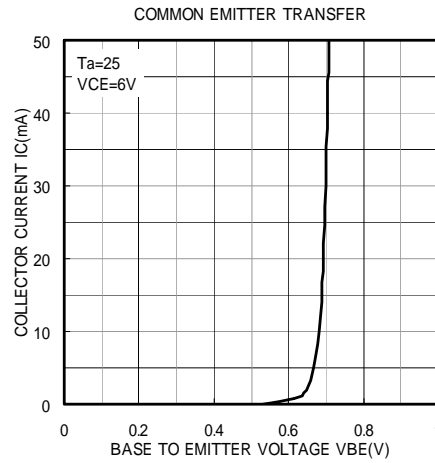
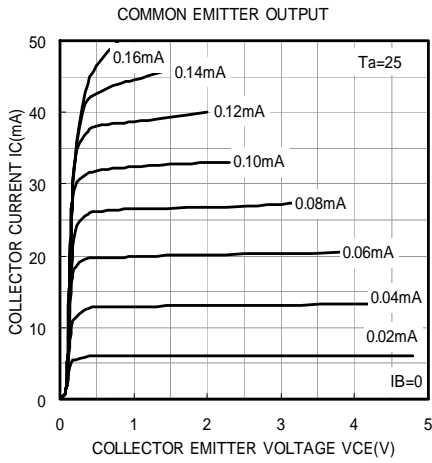
Type name                      hFE Item

**ELECTRICAL CHARACTERISTICS (Ta=25 )**

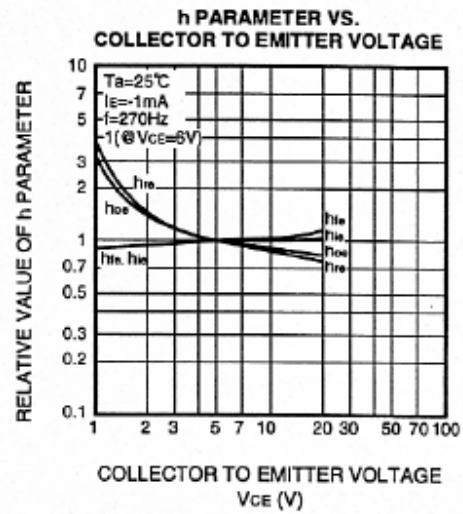
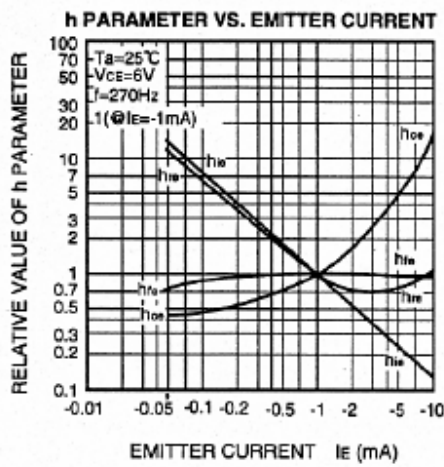
Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
C to E break down voltage	V(BR) <sub>CEO</sub>	I <sub>C</sub> =100 μ A ,R <sub>BE</sub> =	50	-	-	V
Collector cut off current	ICBO	V <sub>CB</sub> =50V, I <sub>E</sub> =0mA	-	-	0.1	μ A
Emitter cut off current	IEBO	V <sub>EB</sub> =6V, I <sub>C</sub> =0mA	-	-	0.1	μ A
DC forward current gain	hFE	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	150	-	500	
DC forward current gain	hFE	V <sub>CE</sub> =6V, I <sub>C</sub> =0.1mA	90	-	-	
C to E Saturation Vlotage	VCE(sat)	I <sub>C</sub> =100mA ,I <sub>B</sub> =10mA	-	-	0.3	V
Gain bandwidth product	fT	V <sub>CE</sub> =6V, I <sub>E</sub> =-10mA	-	200	-	MHz
Collector output capacitance	Cob	V <sub>CB</sub> =6V, I <sub>E</sub> =0,f=1MHz	-	2.5	-	pF
Noise figure	NF	V <sub>CE</sub> =6V, I <sub>E</sub> =-0.1mA,f=1kHz,RG=2k	-	-	15	dB

) It shows hFE classification at right table.

Item	E	F
hFE Item	150 ~ 300	250 ~ 500



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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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**Keep safety first in your circuit designs!**

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