

**DESCRIPTION**

2SC4154 is a super mini package resin sealed silicon NPN epitaxial type transistor. It is designed for low frequency voltage amplify application. Complementary with 2SA1602.

**FEATURE**

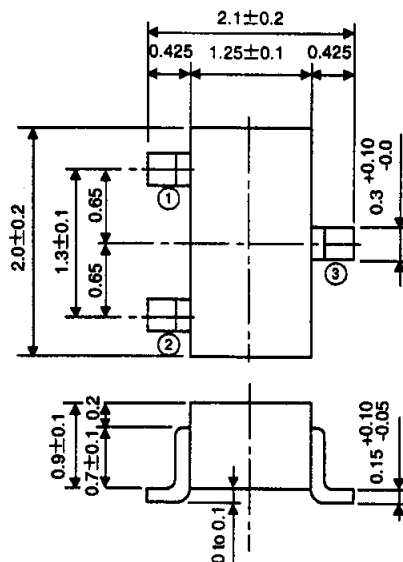
- Small collector to emitter saturation voltage  
VCE(sat)=0.3V max (@ Ic=100mA, Ib=10mA)
- Excellent linearity of DC forward current gain
- Super mini package for easy mounting

**APPLICATION**

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

**OUTLINE DRAWING**

Unit:mm



TERMINAL CONNECTOR

- ① : BASE
- ② : EMITTER
- ③ : COLLECTOR

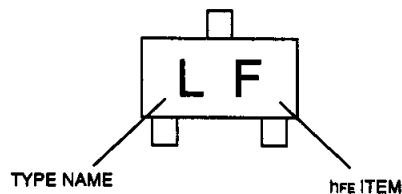
EIAJ : SC-70

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>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> =100μA, R <sub>BE</sub> =∞	50			V
I <sub>CBO</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

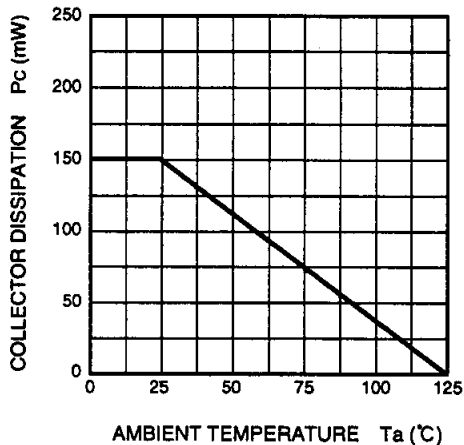
\* : it shows hFE classification in right table.

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

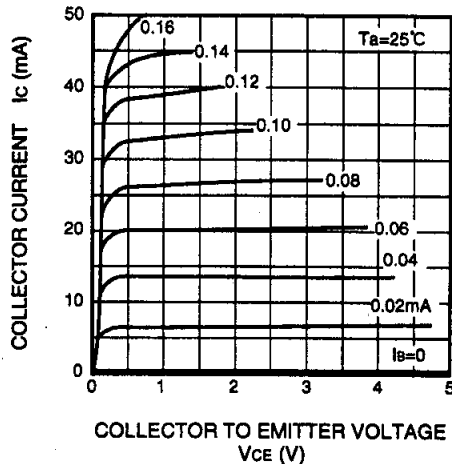
FOR LOW FREQUENCY AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL TYPE

**TYPICAL CHARACTERISTICS**

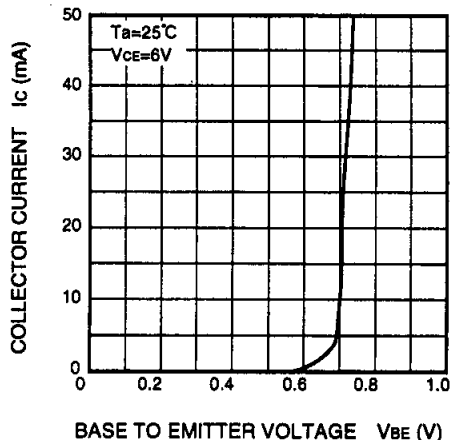
**COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE**



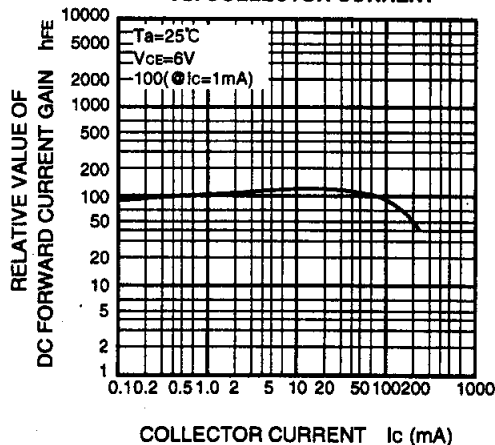
**COMMON EMITTER OUTPUT**



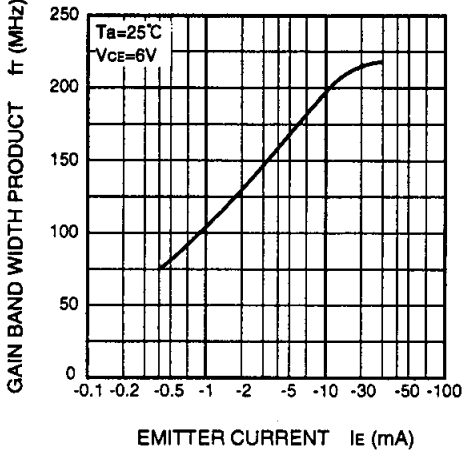
**COMMON EMITTER TRANSFER**



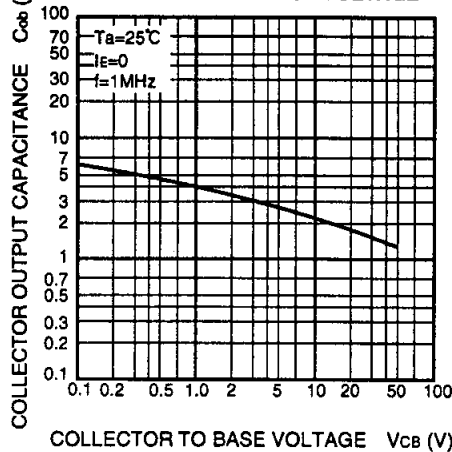
**DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT**



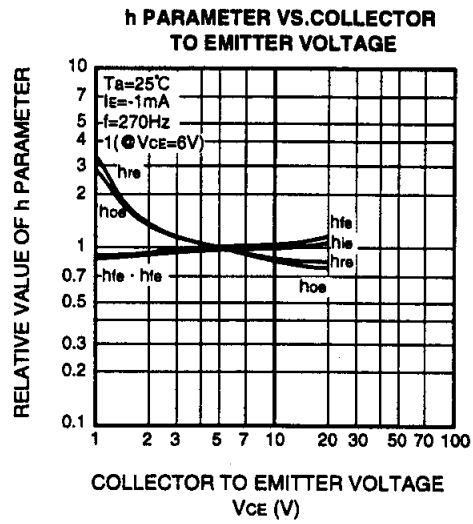
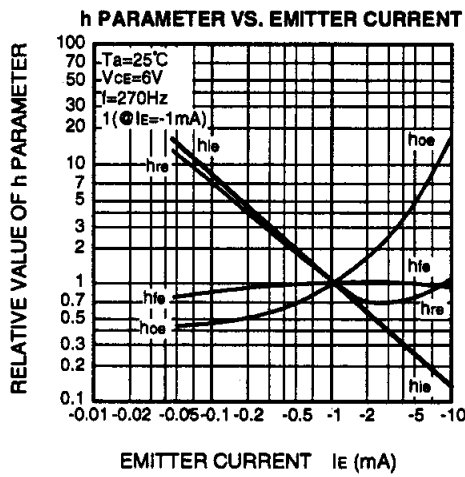
**GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT**



**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	$T_a=25^\circ\text{C}$	8.5	k $\Omega$
$h_{re}$	Open loop small signal reverse voltage amplification factor	$V_{CE}=6\text{V}$	0.1	$\times 10^{-3}$
$h_{fe}$	Closed loop small signal forward current amplification factor	$I_E=-1\text{mA}$	300	—
$h_{oe}$	Open loop small signal output admittance	$f=270\text{Hz}$	5.5	$\mu\text{S}$