

〈SMALL-SIGNAL TRANSISTOR〉

**2SC5804**FOR LOW FREQUENCY AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL TYPE**DESCRIPTION**

2SC5804 is a super mini package resin sealed silicon NPN epitaxial transistor, It is designed for low frequency application. Since it is a super-thin flat lead type package, a high-density mounting are possible. Complementary with 2SC3052.

**FEATURE**

- Super-thin flat lead type package.  $t=0.45\text{mm}$
- Excellent linearity of DC forward current gain.
- Low collector to emitter saturation voltage  
 $V_{CE}(\text{sat})=0.3\text{V max (@}I_C=100\text{mA}/I_B=10\text{mA})$

**APPLICATION**

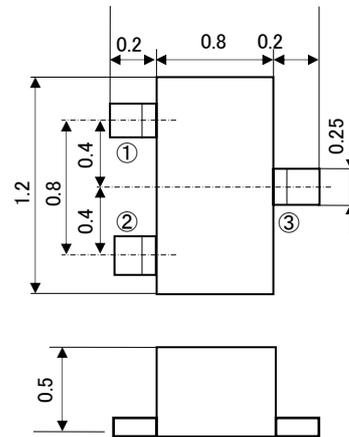
For hybrid IC, small type machine low frequency voltage amplify application.

**MAXIMUM RATINGS** ( $T_a=25^\circ\text{C}$ )

Symbol	Parameter	Ratings	Unit
$V_{CBO}$	Collector to Base voltage	50	V
$V_{CEO}$	Collector to Emitter voltage	6	V
$V_{EBO}$	Emitter to Base voltage	50	V
$I_O$	Collector current	200	mA
$P_c$	Collector dissipation	100	mW
$T_j$	Junction temperature	+125	$^\circ\text{C}$
$T_{stg}$	Storage temperature	-55 ~ +125	$^\circ\text{C}$

**OUTLINE DRAWING**

Unit: mm



JEITA-:、JEDEC:-  
ISAHAYA:T-USM  
TERMINAL CONNECTER  
①: BASE  
②: EMITTER  
③: COLLECTOR

**ELECTRICAL CHARACTERISTICS** ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
Collector to Emitter Breakdown voltage	$V(\text{BR})_{CEO}$	$I_C=100\ \mu\text{A}, R_{BE}=\infty$	50	—	—	V
Collector cut off current	$I_{CBO}$	$V_{CB}=50\text{V}, I_E=0\text{mA}$	-	-	0.1	$\mu\text{A}$
Emitter cut off current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0\text{mA}$	-	-	0.1	$\mu\text{A}$
DC forward current gain	hFE	$V_{CE}=6\text{V}, I_C=1\text{mA}$	150	※	800	-
DC forward current gain	hFE	$V_{CE}=6\text{V}, I_C=0.1\text{mA}$	90	-	-	-
C to E saturation voltage	$V_{CE}(\text{sat})$	$I_C=100\text{mA}, I_B=10\text{mA}$	-	-	0.3	v
Gain bandwidth product	fT	$V_{CE}=6\text{V}, I_E=-10\text{mA}$	-	200	-	MHz
Collector output capacitance	Cob	$V_{CB}=6\text{V}, I_E=0\text{mA}, f=1\text{MHz}$	-	2.5	-	pF
Noise figure	NF	$V_{CE}=6\text{V}, I_E=-0.1\text{mA}, f=1\text{kHz}, R_G=2\text{k}\Omega$	-	-	15	dB

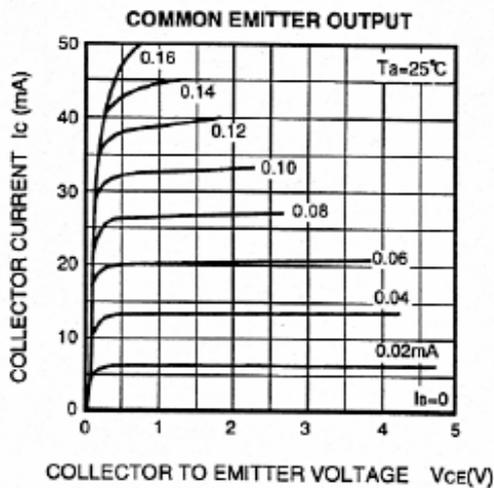
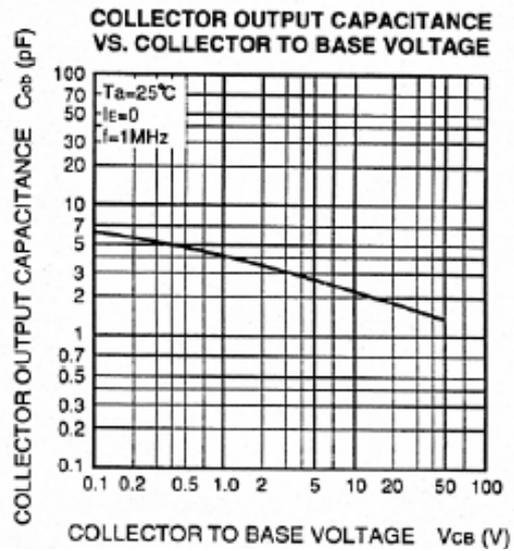
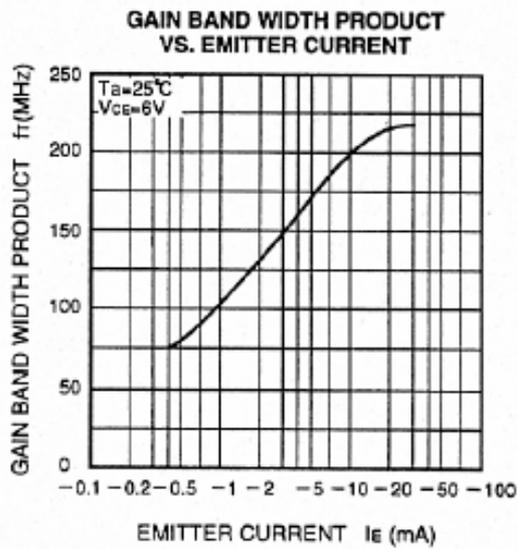
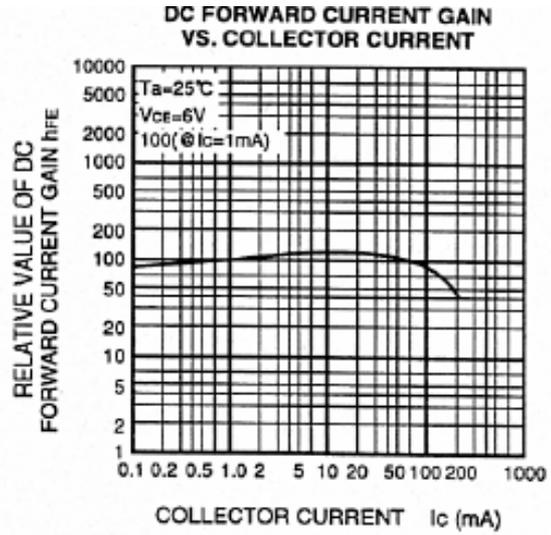
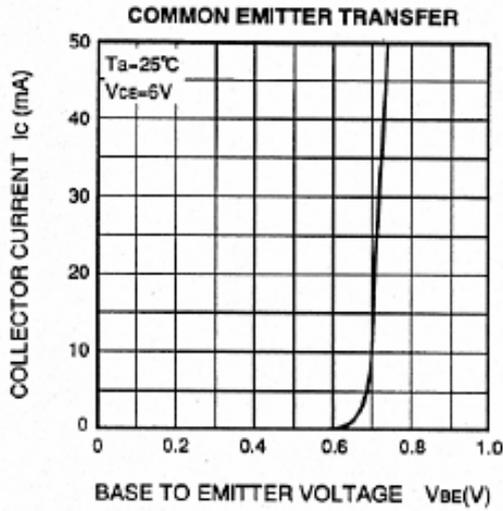
※ It shows hFE classification in below table.

Item	E	F	G
hFE	150~300	250~500	400~800
Abbrivation	LE	LF	LG

**ISAHAYA ELECTRONICS CORPORATION**

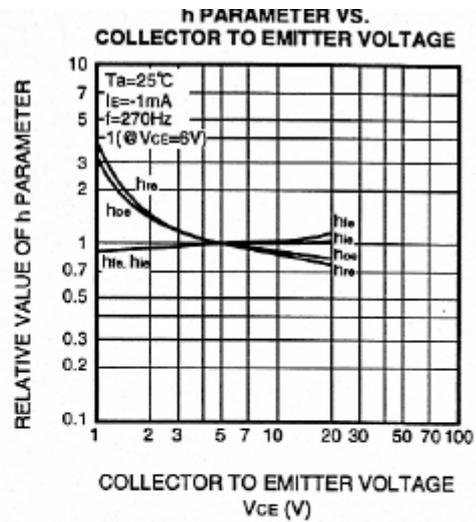
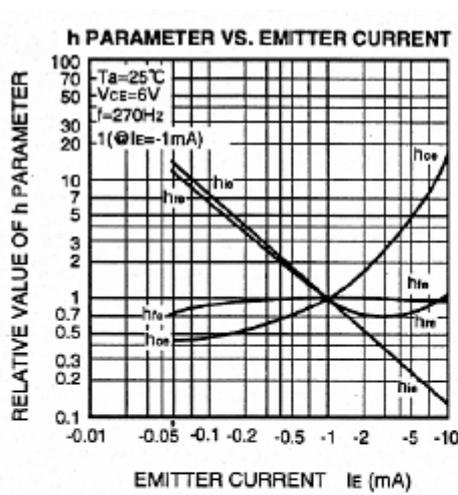
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**COMMON EMITTER h PARAMETER (TYPICAL VALUE)**

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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