

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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NPN SILICON EPITAXIAL TRANSISTOR  
FOR LOW-FREQUENCY POWER AMPLIFIERS AND SWITCHING

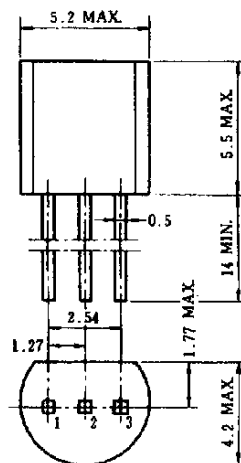
FEATURES

- High  $h_{FE}$ :  
 $h_{FE} = 1000$  to  $3200$  @  $V_{CE} = 5.0$  V,  $I_C = 1.0$  mA
- Low  $V_{CE(sat)}$ :  
 $V_{CE(sat)} = 0.07$  V TYP. @  $I_C/I_B = 50$  mA/5.0 mA
- High  $V_{EBO}$ :  
 $V_{EBO} = 12$  V (2SC3622)  
 $V_{EBO} = 15$  V (2SC3622A)

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

Parameter	Symbol	Ratings		Unit
		2SC3622	2SC3622A	
Collector to base voltage	$V_{CBO}$	60		V
Collector to emitter voltage	$V_{CEO}$	50		V
Emitter to base voltage	$V_{EBO}$	12	15	V
Collector current (DC)	$I_{C(DC)}$	150		mA
Total power dissipation	$P_T$	250		mW
Junction temperature	$T_j$	150		$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150		$^\circ\text{C}$

PACKAGE DRAWING (UNIT: mm)



Electrode Connection

1. Emitter EIAJ : SC-43B
2. Collector JEDEC : TO-92
3. Base IEC : PA33

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 50$ V, $I_E = 0$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 10$ V, $I_C = 0$			100	nA
DC current gain	$h_{FE1}^*$	$V_{CE} = 5.0$ V, $I_C = 1.0$ mA	1000	1800	3200	-
DC current gain	$h_{FE2}^*$	$V_{CE} = 5.0$ V, $I_C = 100$ mA	200	350		
DC base voltage	$V_{BE}^*$	$V_{CE} = 5.0$ V, $I_C = 1.0$ mA		560		mV
Collector saturation voltage	$V_{CE(sat)}^*$	$I_C = 50$ mA, $I_B = 5.0$ mA		0.07	0.30	V
Base saturation voltage	$V_{BE(sat)}^*$	$I_C = 50$ mA, $I_B = 5.0$ mA		0.8	1.2	V
Gain bandwidth product	$f_T$	$V_{CE} = 5.0$ V, $I_E = -10$ mA		250		MHz
Output capacitance	$C_{ob}$	$V_{CB} = 5$ V, $I_E = 0$ , $f = 1.0$ MHz		3.0		pF
Turn-on time	$t_{on}$	$V_{CC} = 10$ V, $V_{BE(off)} = -2.7$ V		0.13		$\mu\text{s}$
Storage temperature	$t_{stg}$	$I_C = 50$ mA		0.72		$\mu\text{s}$
Fall time	$t_{off}$	$I_{B1} = -I_{B2} = 1$ mA		1.22		$\mu\text{s}$

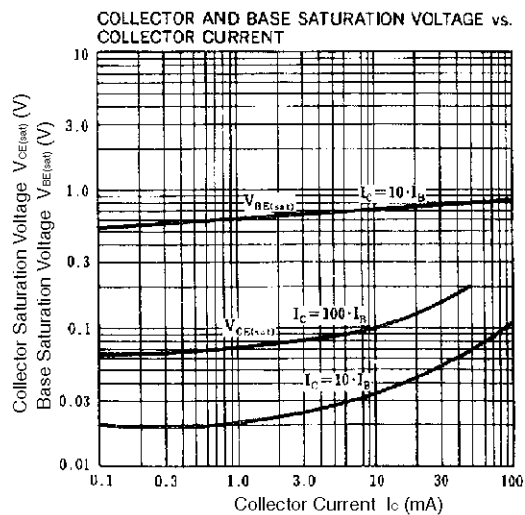
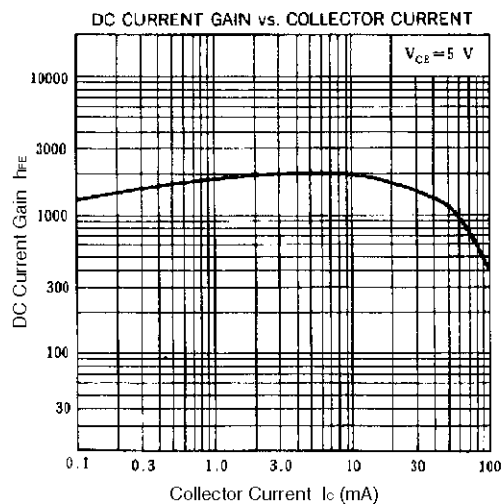
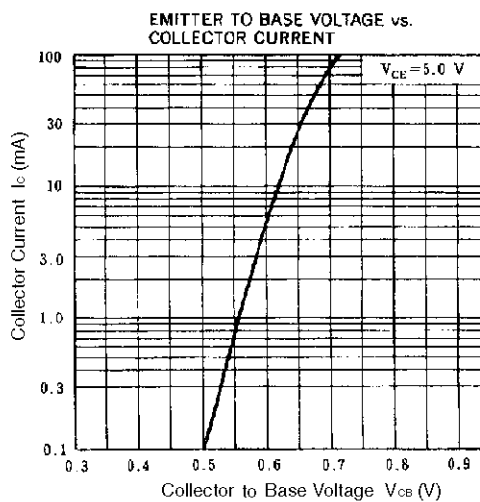
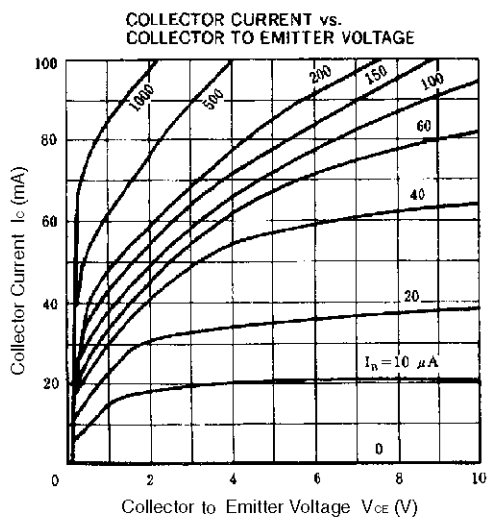
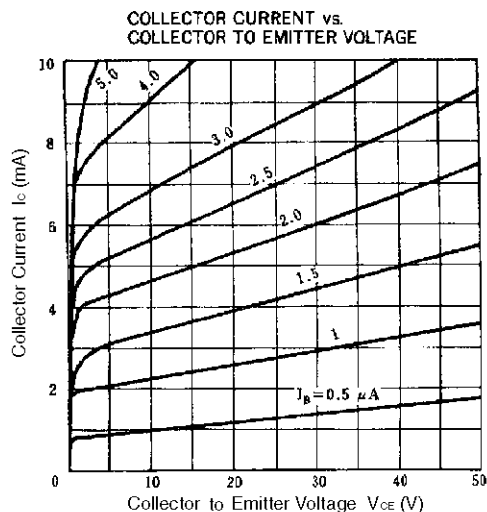
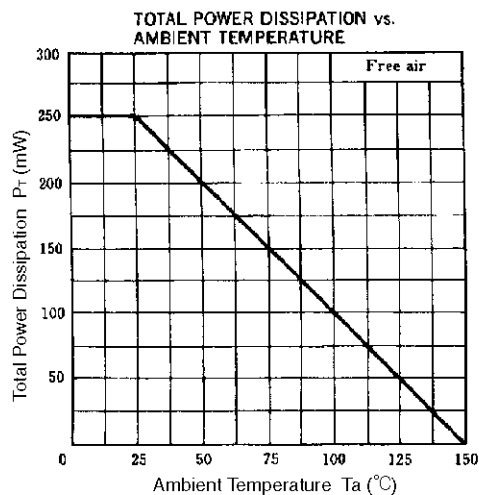
\* Pulse test  $PW \leq 350 \mu\text{s}$ , duty cycle  $\leq 2\%$  per pulsed

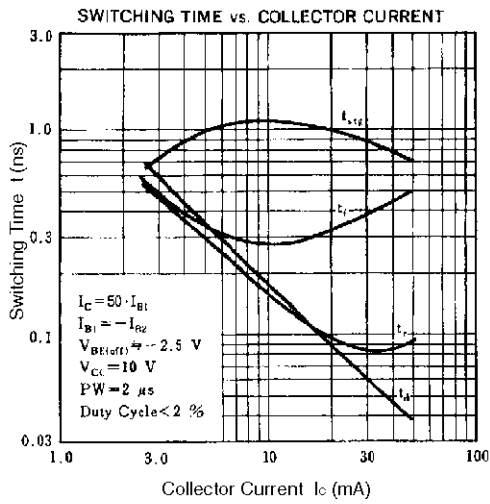
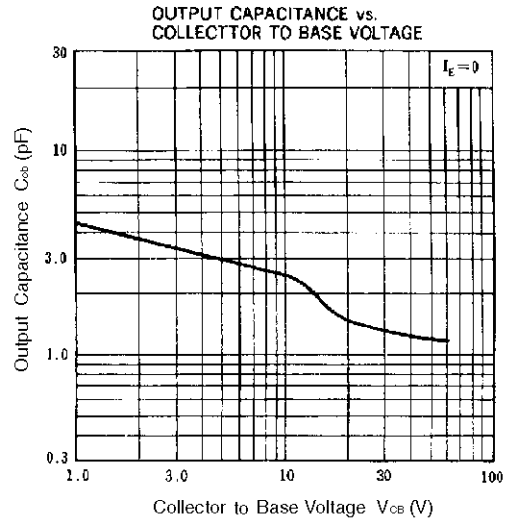
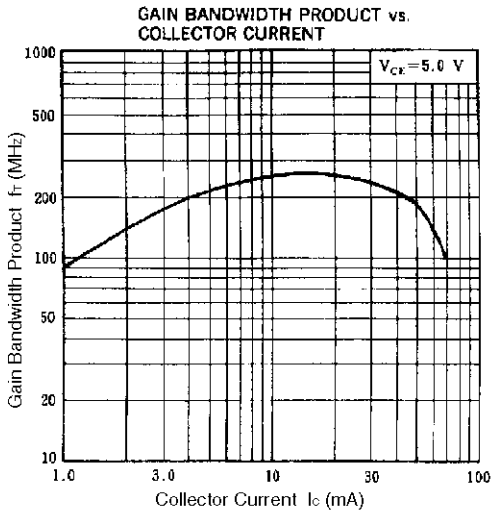
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**h<sub>FE</sub> CLASSIFICATION**

Marking	L	K
h <sub>FE1</sub>	1000 to 2000	1600 to 3200

TYPICAL CHARACTERISTICS (Ta = 25°C)





[MEMO]

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