To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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

April 1st, 2010
Renesas Electronics Corporation

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

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RENESAS

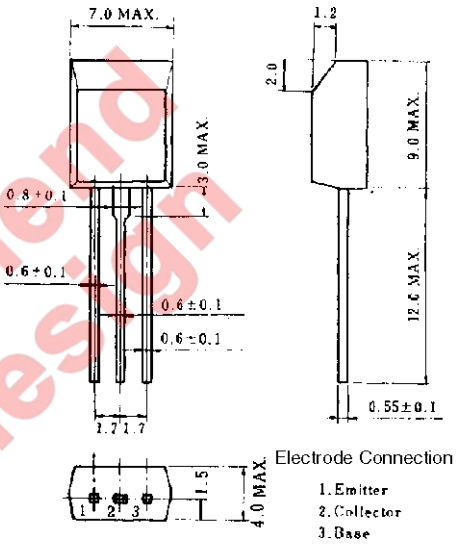
SILICON TRANSISTORS
2SA1221, 1222

PNP SILICON EPITAXIAL TRANSISTOR FOR LOW-FREQUENCY POWER AMPLIFIERS

FEATURES

- Ideal for use of high withstanding voltage current such as TV vertical deflection output, audio output, and variable power supplies.
- Complementary transistor with 2SC2958 and 2SC2959
  - V_{CEO} = 140 V: 2SA1221/2SC2958
  - V_{CEO} = 160 V: 2SA1222/2SC2959

PACKAGE DRAWING (UNIT: mm)



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	–160	V
Collector to emitter voltage	V_{CEO}	–140/–160	V
Emitter to base voltage	V_{EBO}	–5.0	V
Collector current (DC)	$I_{C(DC)}$	–500	mA
Collector current (pulse)	$I_{C(pulse)}$*	–1.0	A
Total power dissipation	P_T	1.0	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

* PW ≤ 10 ms, duty cycle ≤ 50%

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I_{CBO}	V_{CB} = –100 V, I_E = 0			–200	nA
Emitter cutoff current	I_{EBO}	V_{EB} = –5.0 V, I_C = 0			–200	nA
DC current gain	h_{FE} **	V_{CE} = –2.0 V, I_C = –100 mA	100	150	400	
DC base voltage	V_{BE} **	V_{CE} = –5.0 V, I_C = –20 mA	–0.6	–0.64	–0.7	V
Collector saturation voltage	$V_{CE(sat)}$ **	I_C = –1.0 A, I_B = –0.2 A		–0.6	–0.9	V
Base saturation voltage	$V_{BE(sat)}$ **	I_C = –1.0 A, I_B = –0.2 A		–1.1	–0.3	V
Output capacitance	C_{ob}	V_{CB} = –10 V, I_E = 0, f = 1.0 MHz		24	40	pF
Gain bandwidth product	f_T	V_{CE} = –10 V, I_E = 20 mA	30	45		MHz

** Pulse test PW ≤ 350 μs, duty cycle ≤ 2% per pulsed

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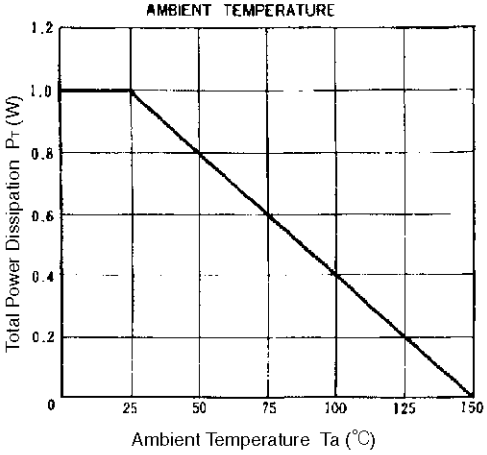
h_{FE} CLASSIFICATION

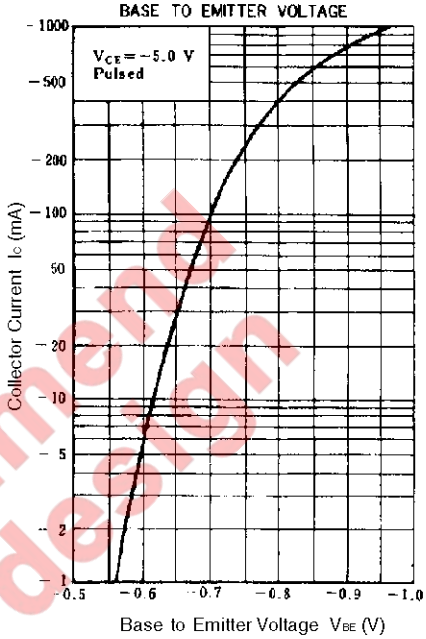
Marking	M	L	K
h_{FE}	100 to 200	160 to 320	200 to 400

TYPICAL CHARACTERISTICS (Ta = 25°C)

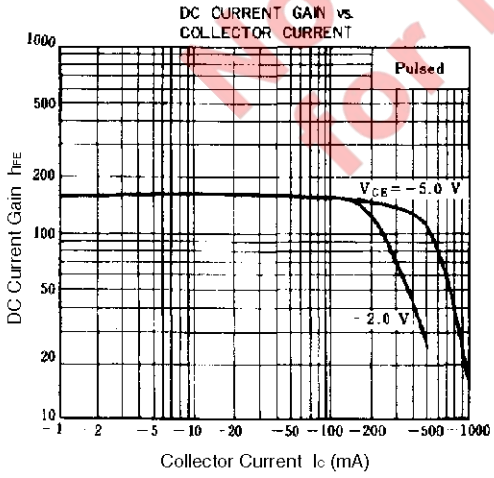
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



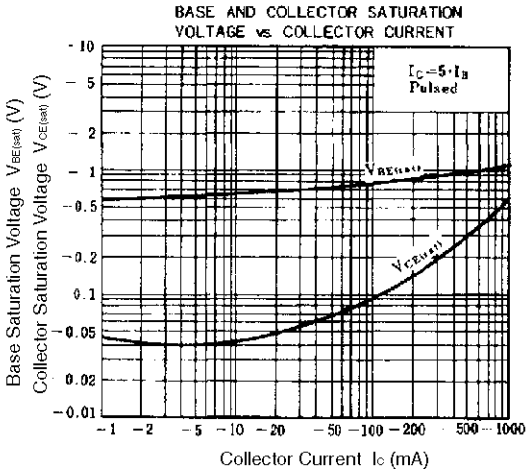
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



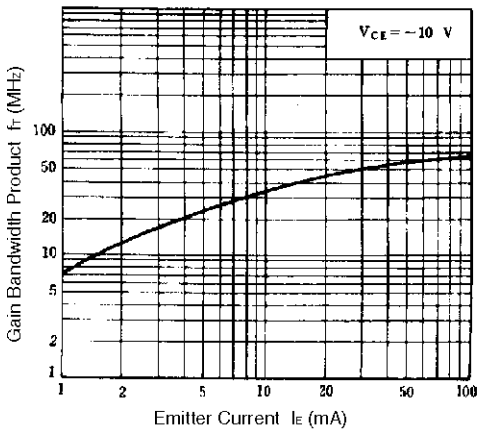
DC CURRENT GAIN vs. COLLECTOR CURRENT



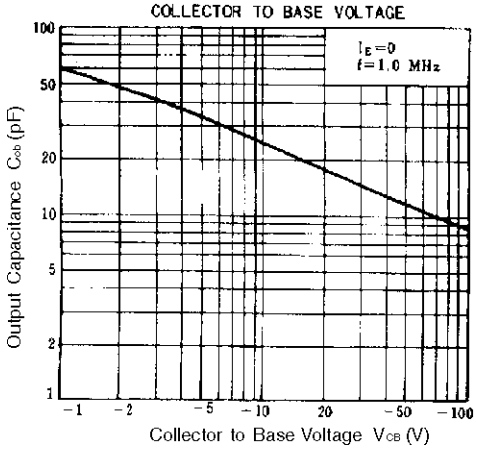
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



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