

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

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SILICON TRANSISTORS  
2SA1221, 1222

PNP SILICON EPITAXIAL TRANSISTOR  
FOR LOW-FREQUENCY POWER AMPLIFIERS

FEATURES

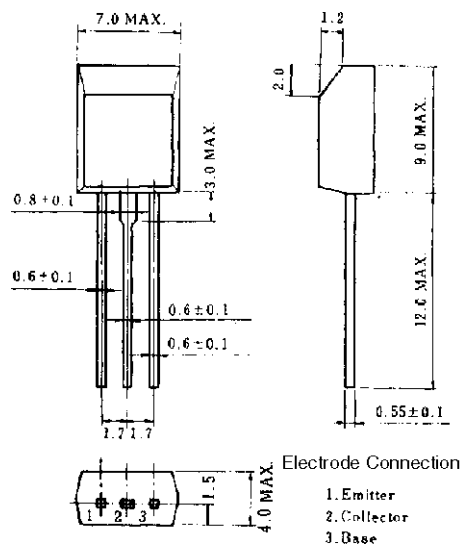
- Ideal for use of high withstanding voltage current such as TV vertical deflection output, audio output, and variable power supplies.
- Complementary transistor with 2SC2958 and 2SC2959  
 $V_{CE0} = 140\text{ V}$ : 2SA1221/2SC2958  
 $V_{CE0} = 160\text{ V}$ : 2SA1222/2SC2959

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

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CB0}$	-160	V
Collector to emitter voltage	$V_{CE0}$	-140/-160	V
Emitter to base voltage	$V_{EB0}$	-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	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*  $PW \leq 10\text{ ms}$ , duty cycle  $\leq 50\%$

PACKAGE DRAWING (UNIT: mm)



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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	$I_{CB0}$	$V_{CB} = -100\text{ V}$ , $I_E = 0$			-200	nA
Emitter cutoff current	$I_{EB0}$	$V_{EB} = -5.0\text{ V}$ , $I_C = 0$			-200	nA
DC current gain	$h_{FE}^{**}$	$V_{CE} = -2.0\text{ V}$ , $I_C = -100\text{ mA}$	100	150	400	
DC base voltage	$V_{BE}^{**}$	$V_{CE} = -5.0\text{ V}$ , $I_C = -20\text{ mA}$	-0.6	-0.64	-0.7	V
Collector saturation voltage	$V_{CE(sat)}^{**}$	$I_C = -1.0\text{ A}$ , $I_B = -0.2\text{ A}$		-0.6	-0.9	V
Base saturation voltage	$V_{BE(sat)}^{**}$	$I_C = -1.0\text{ A}$ , $I_B = -0.2\text{ A}$		-1.1	-0.3	V
Output capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$		24	40	pF
Gain bandwidth product	$f_r$	$V_{CE} = -10\text{ V}$ , $I_E = 20\text{ mA}$	30	45		MHz

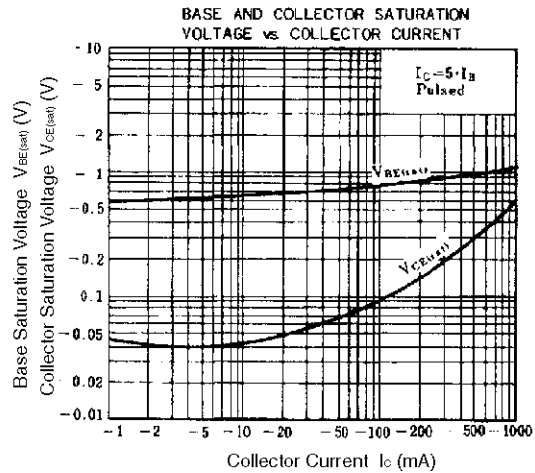
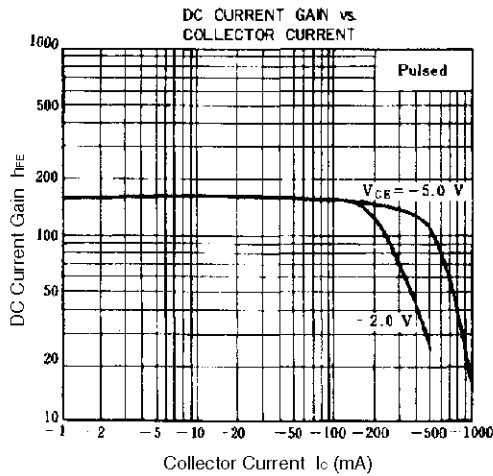
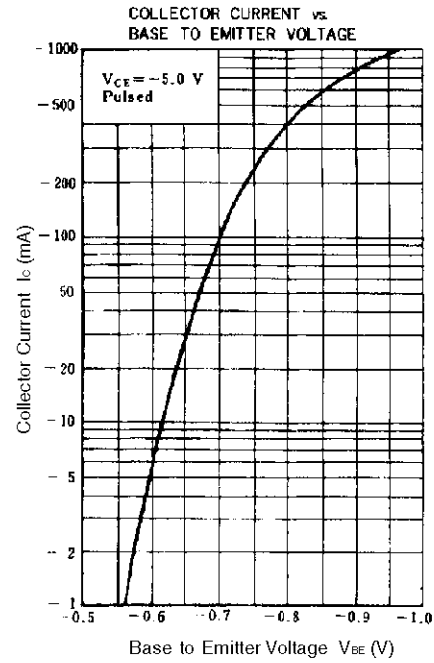
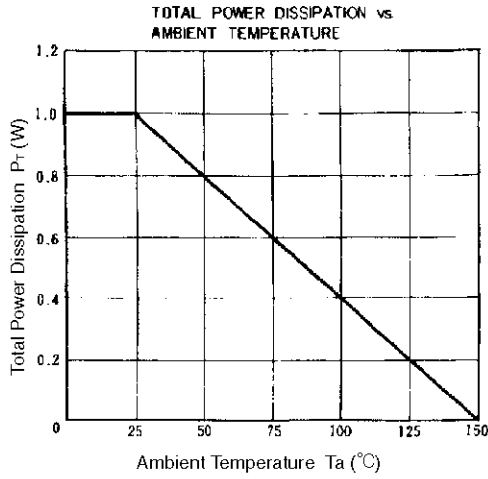
\*\* Pulse test  $PW \leq 350\ \mu\text{s}$ , duty cycle  $\leq 2\%$  per pulsed

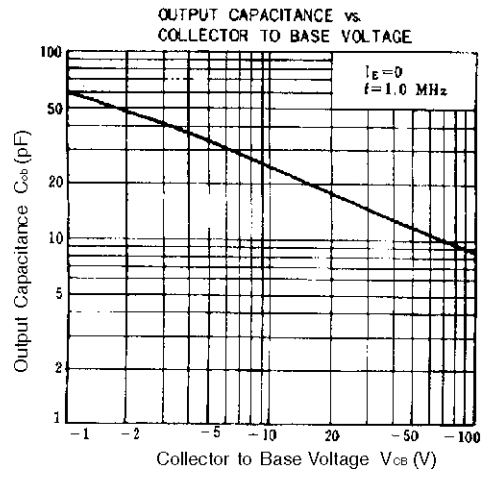
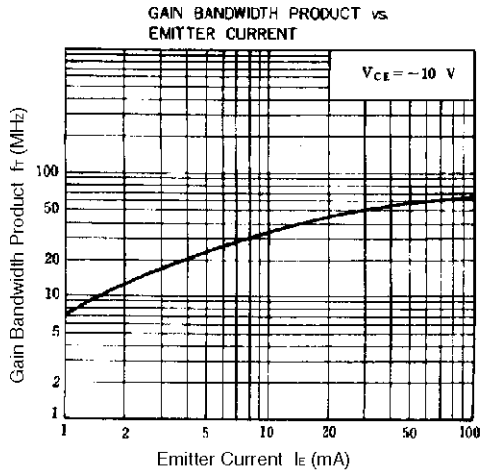
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**hFE CLASSIFICATION**

Marking	M	L	K
hFE	100 to 200	160 to 320	200 to 400

**TYPICAL CHARACTERISTICS (Ta = 25°C)**





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