NEC

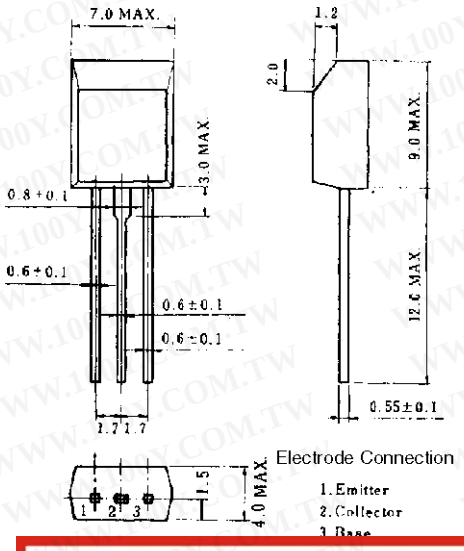
SILICON TRANSISTORS
2SA1221, 1222

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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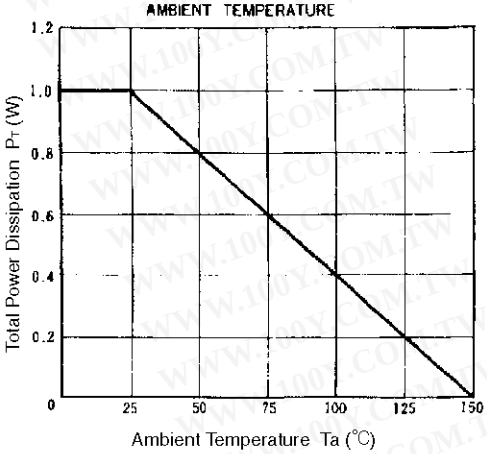
h_{FE} CLASSIFICATION

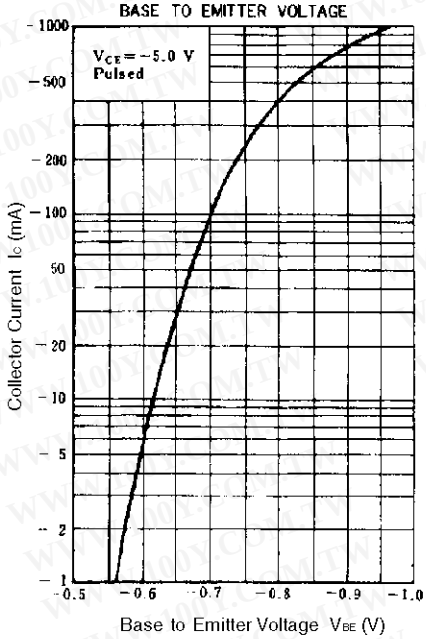
Marking	M	L	K
h_{FE}	100 to 200	160 to 320	200 to 400

TYPICAL CHARACTERISTICS (Ta = 25°C)

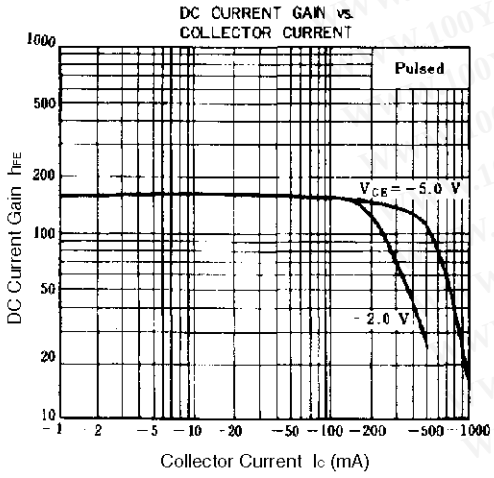
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



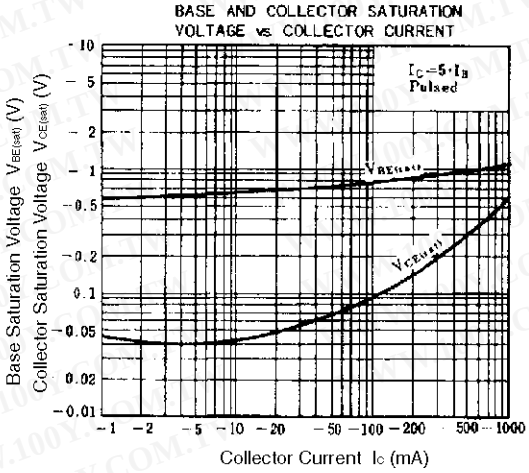
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE

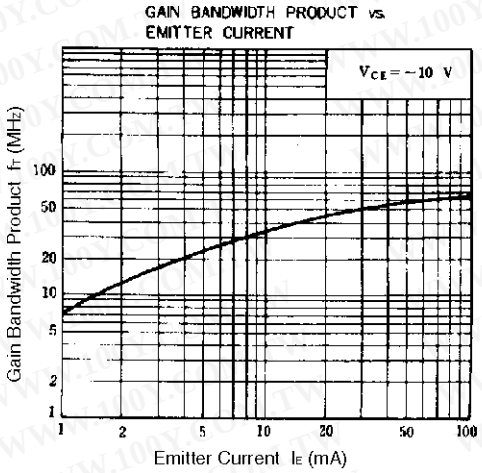


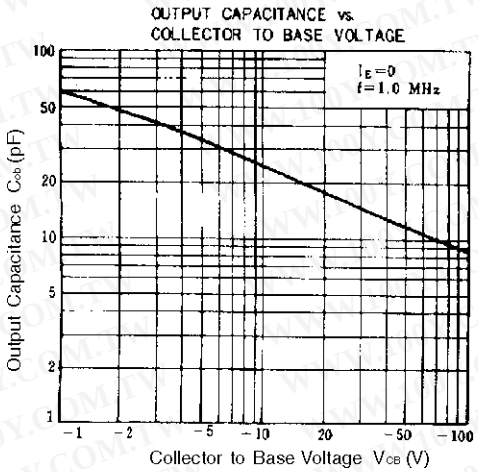
DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT







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