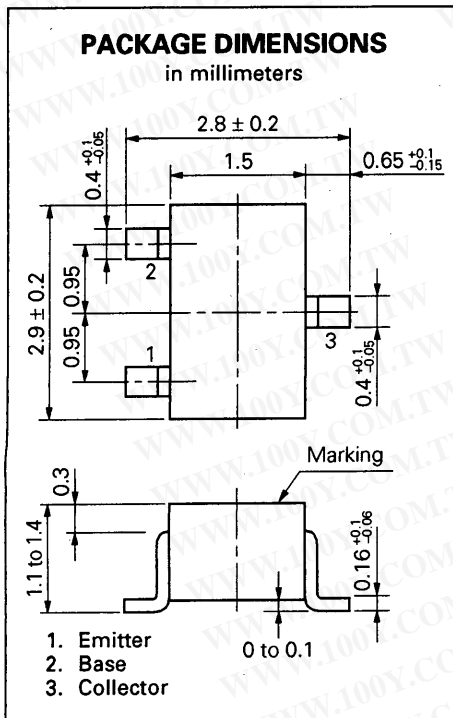


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SILICON TRANSISTOR 2SA812

AUDIO FREQUENCY, GENERAL PURPOSE AMPLIFIER PNP SILICON EPITAXIAL TRANSISTOR MINI MOLD



FEATURES

- Complementary to 2SC1623
- High DC Current Gain: $h_{FE} = 200$ TYP. ($V_{CE} = -6.0$ V, $I_C = -1.0$ mA)
- High Voltage: $V_{CEO} = -50$ V

QUALITY GRADE

Standard

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25$ °C)

Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current (DC)	I_C	-100	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

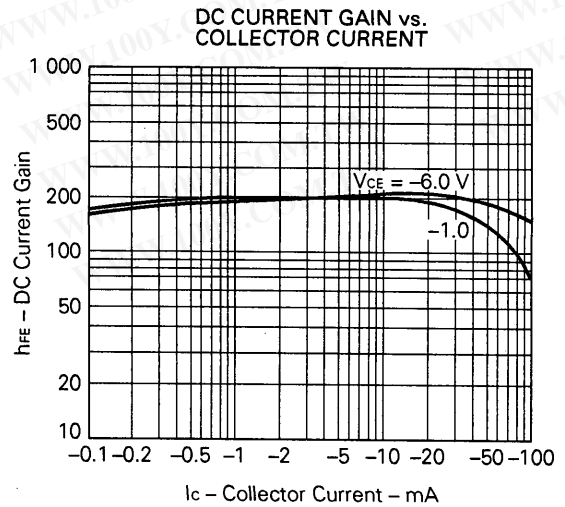
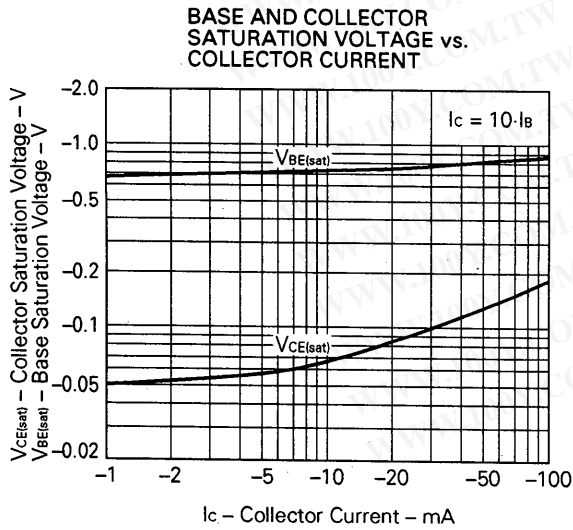
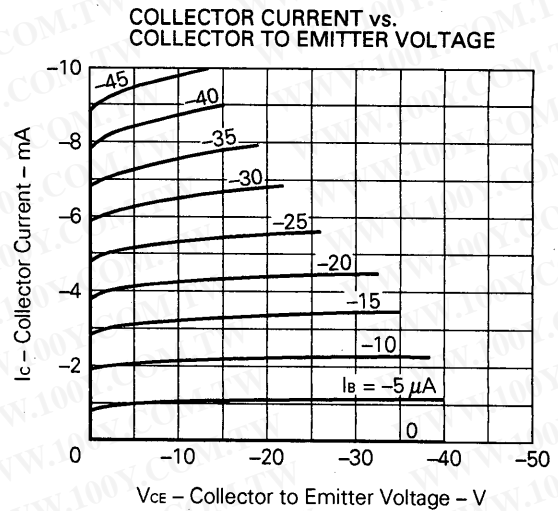
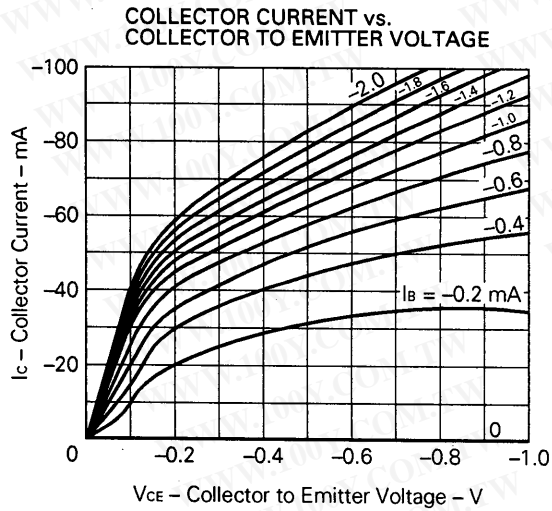
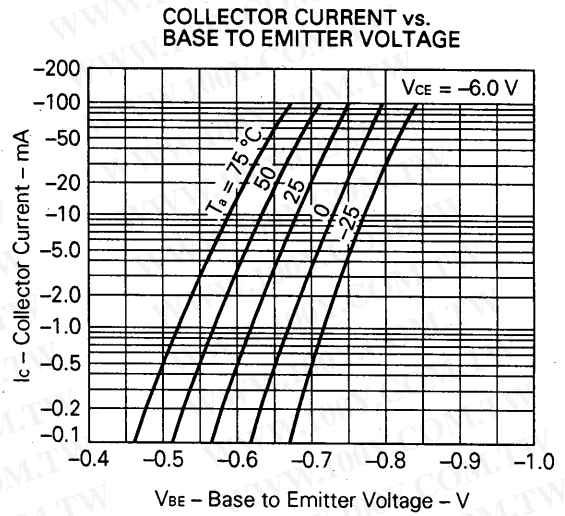
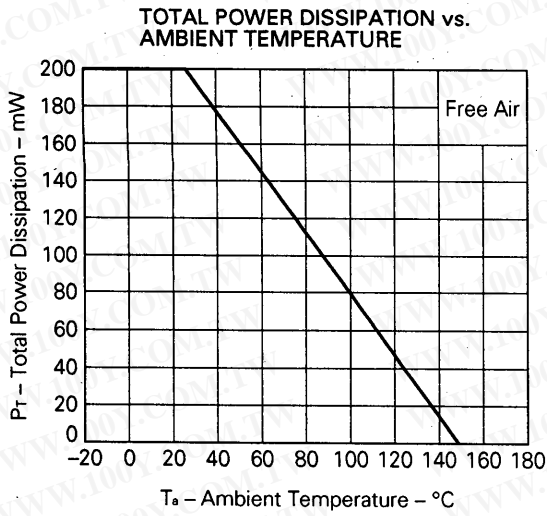
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-0.1	μ A	$V_{CB} = -60$ V, $I_E = 0$
Emitter Cutoff Current	I_{EBO}			-0.1	μ A	$V_{EB} = -5.0$ V, $I_C = 0$
DC Current Gain	h_{FE}	90	200	600		$V_{CE} = -6.0$ V, $I_C = -1.0$ mA*
Collector Saturation Voltage	$V_{CE(sat)}$		-0.18	-0.3	V	$I_C = -100$ mA, $I_B = -10$ mA
Base to Emitter Voltage	V_{BE}	-0.58	-0.62	-0.68	V	$V_{CE} = 6.0$ V, $I_C = -1.0$ mA
Gain Bandwidth Product	f_T		180		MHz	$V_{CE} = -6.0$ V, $I_E = 10$ mA
Output Capacitance	C_{ob}		4.5		pF	$V_{CB} = -10$ V, $I_E = 0$, $f = 1.0$ MHz

* Pulsed: $PW \leq 350$ μ s, Duty Cycle ≤ 2 %

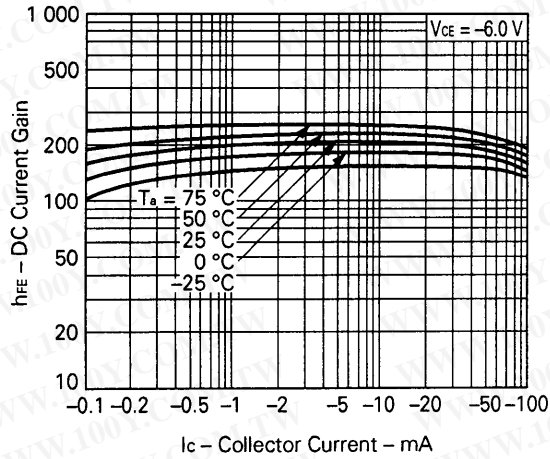
h_{FE} Classification

Marking	M4	M5	M6	M7
h_{FE}	90 to 180	135 to 270	200 to 400	300 to 600

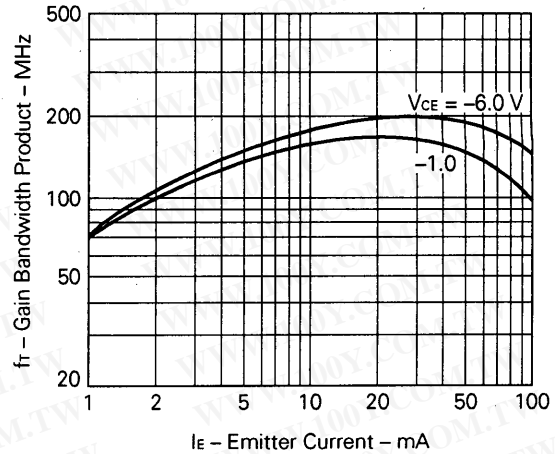
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



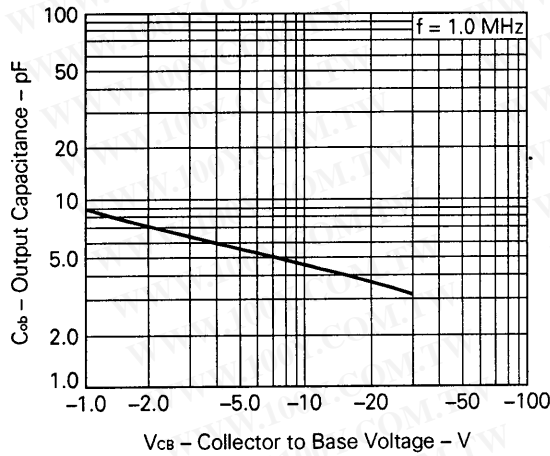
DC CURRENT GAIN vs. COLLECTOR CURRENT



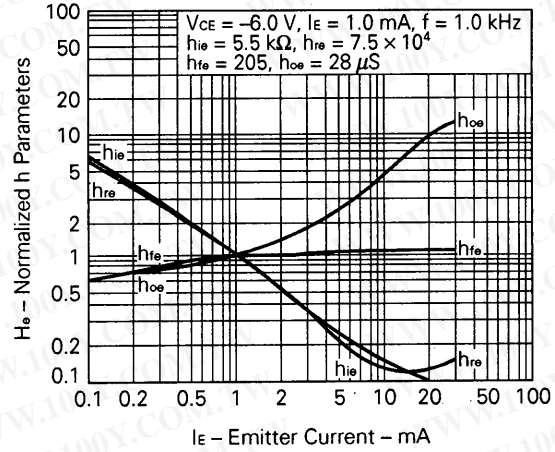
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



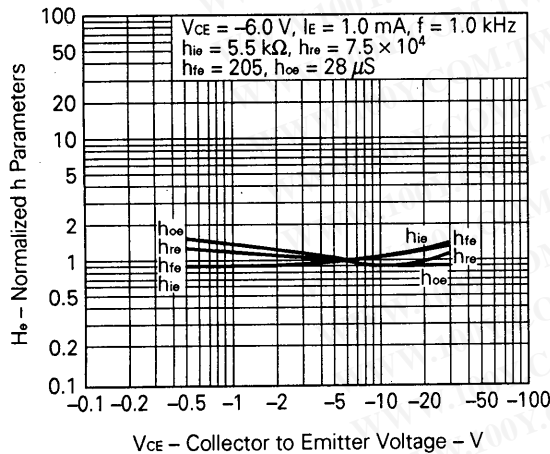
OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



NORMALIZED h PARAMETER vs. EMITTER CURRENT



NORMALIZED h PARAMETER vs. COLLECTOR TO EMITTER VOLTAGE



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REFERENCE APPLICATION NOTE

ASSEMBLY MANUAL FOR SEMICONDUCTOR DEVICES	IEI-1207
QUALITY CONTROL OF NEC SEMICONDUCTOR DEVICES	TEI-1202
QUALITY CONTROL GUIDE OF SEMICONDUCTOR DEVICES	MEI-1202

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Application examples recommended by NEC Corporation.

Standard: Computer, Office equipment, Communication equipment, Test and Measurement equipment, Machine tools, Industrial robots, Audio and Visual equipment, Other consumer products, etc.

Special: Automotive and Transportation equipment, Traffic control systems, Antidisaster systems, Anticrime systems, etc.