

To our customers,

Old Company Name in Catalogs and Other Documents

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

April 1st, 2010
Renesas Electronics Corporation

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

Send any inquiries to <http://www.renesas.com/inquiry>.

Notice

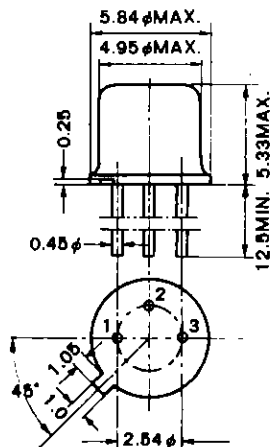
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PNP SILICON EPITAXIAL TRANSISTOR
HIGH FREQUENCY AMPLIFIER AND MEDIUM SPEED SWITCHING
INDUSTRIAL USE

Outline (Unit: mm)



- 1. Emitter
- 2. Base
- 3. Collector (Case)

EIAJ: TC-7, TB-8C
JEDEC: TO-206MA(TO-18)
IEC: C7, B11

- Keeps stabilized operation against power voltage fluctuation.
 $V_{CE0} : -40V$
- Available for deeper base reverse bias than with normal ~~diffused~~ ^{diffused} transistors. $V_{EBO} : -8.0V$
- Suitable for switching and audio amplifiers as well as high frequency amplifiers.

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

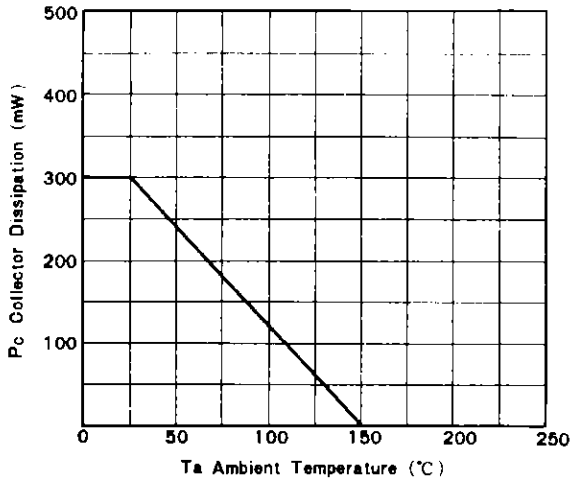
Collector - Base Voltage	V_{CB0}	-60	V
Collector - Emitter Voltage	V_{CE0}	-40	V
Emitter - Base Voltage	V_{EBO}	-8.0	V
Collector Current	I_C	-200	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{stg}	-65 ~ +150	$^{\circ}C$

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

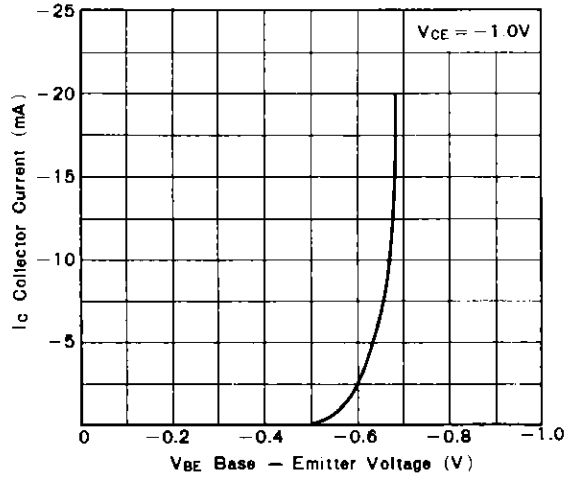
Characteristic	Symbol	MIN.	TYP.	MAX.	Unit	Test Conditions
Collector Cutoff Current	I_{CBO}			-0.5	μA	$V_{CB} = -40V, I_E = 0$
Emitter Cutoff Current	I_{EBO}			-0.5	μA	$V_{EB} = -5V, I_C = 0$
DC Current Gain	h_{FE1}	80	140	240		$V_{CE} = -1V, I_C = -10mA$
DC Current Gain	h_{FE2}	30	70			$V_{CE} = -1V, I_C = -100mA$
Collector Saturation Voltage	$V_{CE(sat)}$		-0.2	-0.7	V	$I_C = -100mA, I_B = -10mA$
Base Saturation Voltage	$V_{BE(sat)}$		-0.85	-1.2	V	$I_C = -100mA, I_B = -10mA$
Gain Bandwidth Product	f_T	150	220		MHz	$V_{CE} = -10V, I_E = 10mA$
Output Capacitance	C_{ob}		7.0	10	pF	$V_{CB} = -10V, I_E = 0, f = 1.0MHz$
Turn on Time	t_{on}		150		ns	See test circuit
Storage Time	t_{stg}		270		ns	
Turn off Time	t_{off}		320		ns	

CHARACTERISTIC CURVE ($T_a=25^\circ\text{C}$)

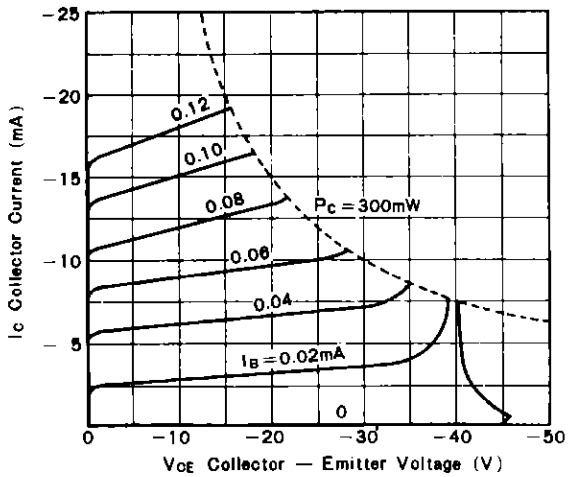
P_C v.s. T_a



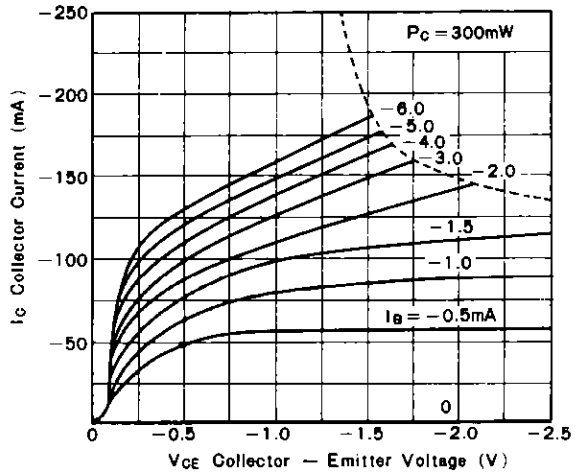
I_C v.s. V_{BE}



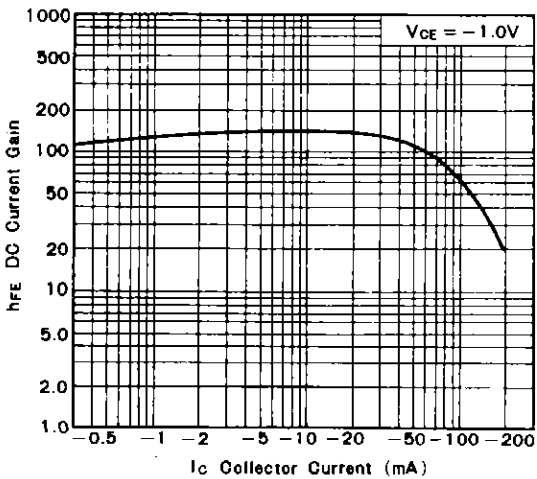
I_C v.s. V_{CE}



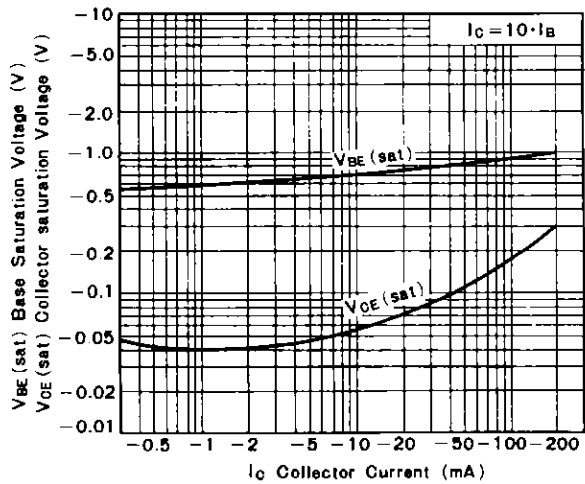
I_C v.s. V_{CE}

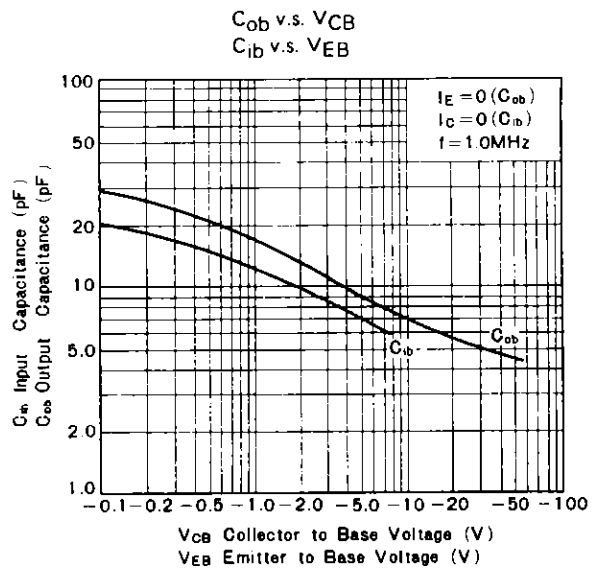
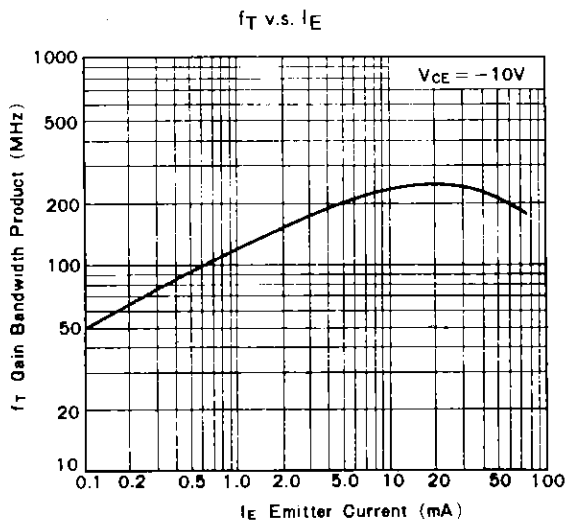


h_{FE} v.s. I_C

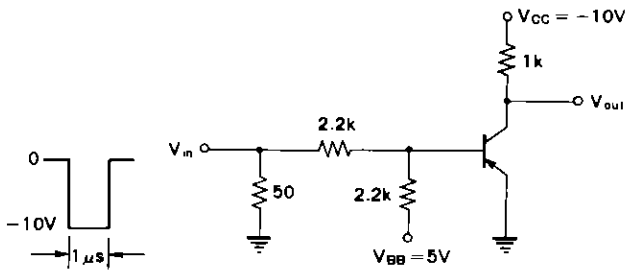


$V_{BE(sat)}$ v.s. I_C
 $V_{CE(sat)}$ v.s. I_C





SWITCHING TIME TEST CIRCUIT



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