

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>)

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Notice

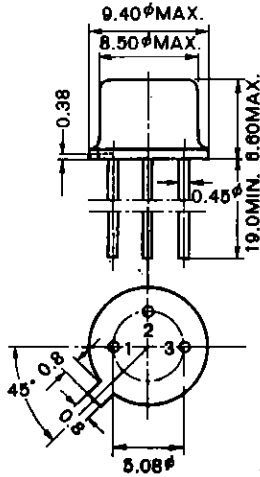
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PNP SILICON EPITAXIAL TRANSISTOR HIGH SPEED SWITCHING and HIGH FREQUENCY AMPLIFIER INDUSTRIAL USE

Outline (Unit: mm)



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

EIAJ : TC-5, TB-5B
JEDEC : TO-205MD (TO-39)
IEC : C4, B4B

- Features low I_{CBO} and durability against high temperatures.
- Replaceable with most of PNP germanium transistors.
- Can be used in complementary with 2SC32.

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

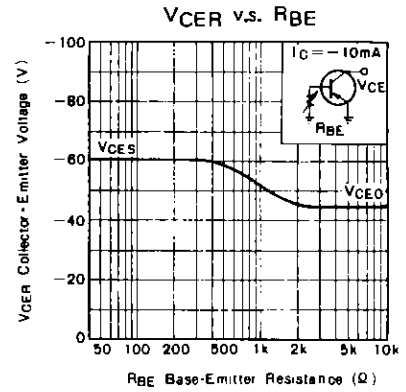
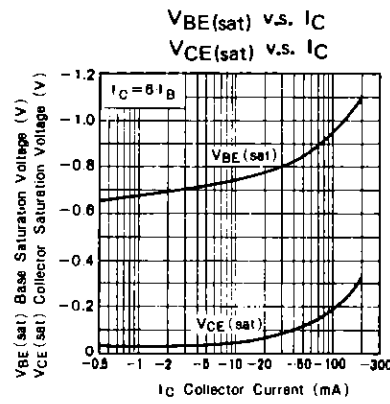
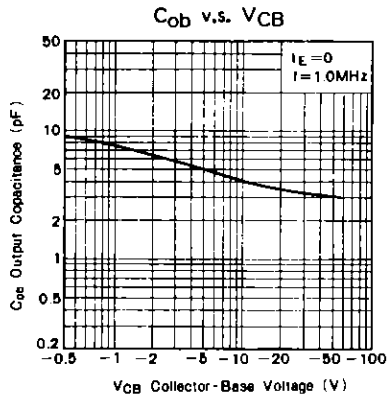
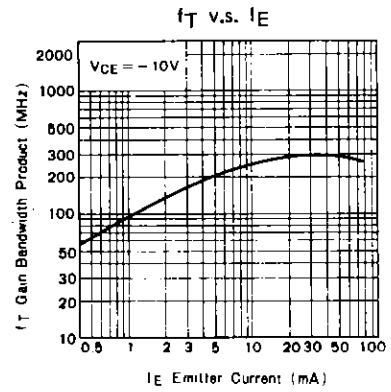
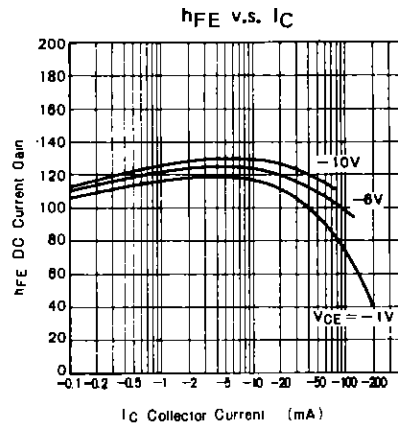
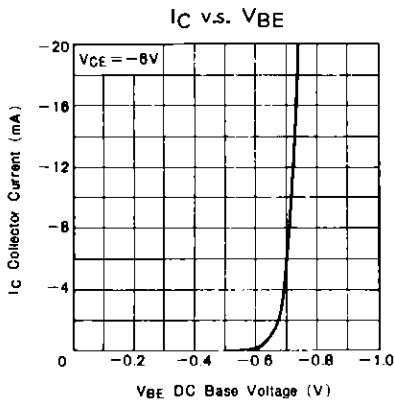
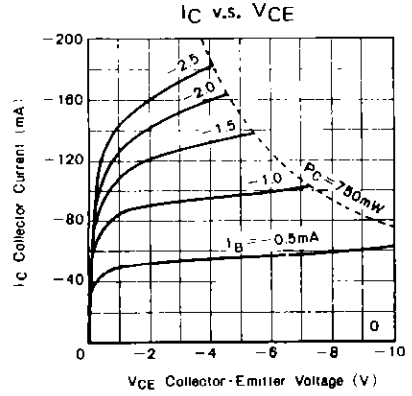
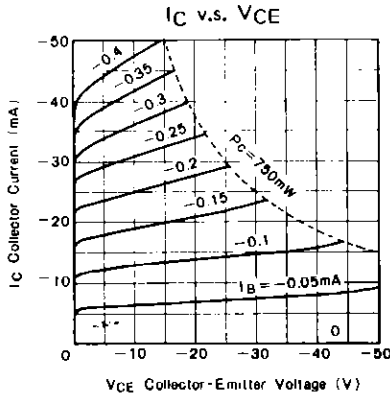
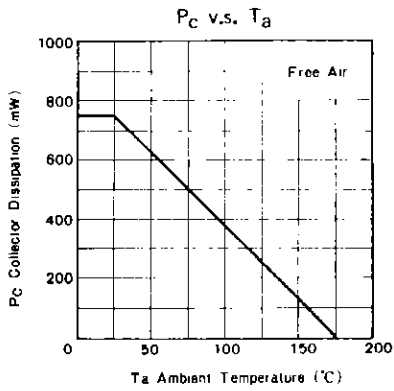
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-200	mA
Total Dissipation	P_T	750	W
Junction Temperature	T_j	175	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 ~ + 175	$^\circ\text{C}$

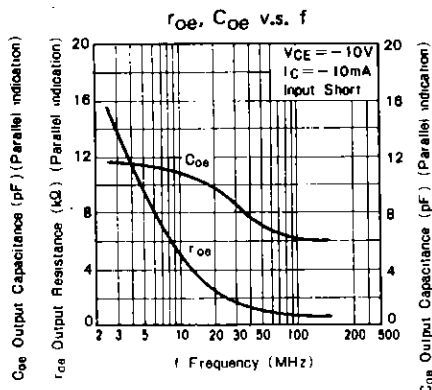
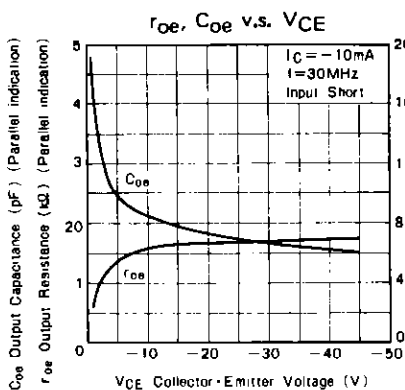
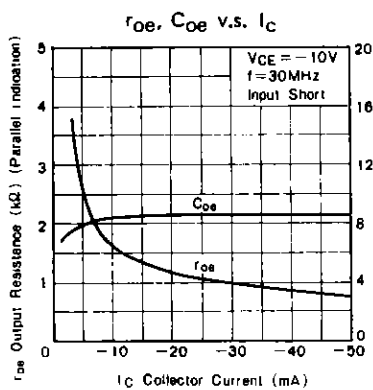
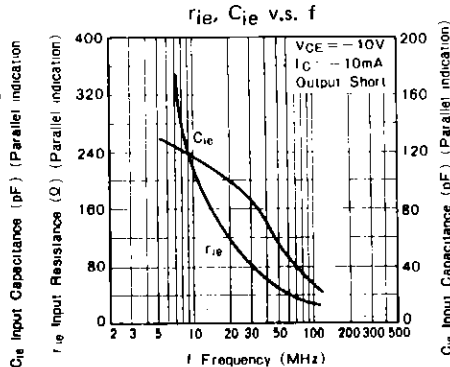
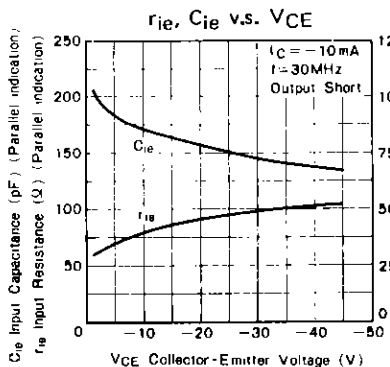
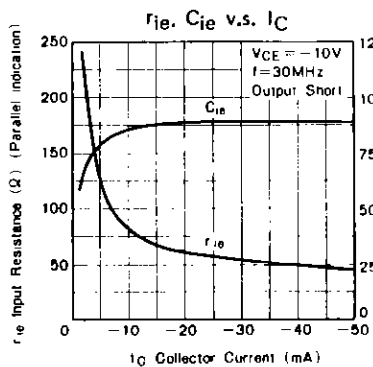
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	MIN.	TYP.	MAX.	Unit	Test Conditions
Collector Cutoff Current	I_{CBO}			-0.1	μA	$V_{CB} = -45\text{V}, I_E = 0$
Emitter Cutoff Current	I_{EBO}			-0.1	μA	$V_{EB} = -3.0\text{V}, I_C = 0$
Collector Saturation Voltage	$V_{CE(sat)}$			-0.4	V	$I_C = -30\text{mA}, I_B = -5.0\text{mA}$
Base Saturation Voltage	$V_{BE(sat)}$			-1.0	V	$I_C = -30\text{mA}, I_B = -5.0\text{mA}$
DC Current Gain	h_{FE}	32				$V_{CE} = -10\text{V}, I_C = -0.5\text{mA}^*$
DC Current Gain	h_{FE}	40	130	200		$V_{CE} = -10\text{V}, I_C = -10\text{mA}^*$
Gain Bandwidth Product	f_T	160	250		MHz	$V_{CE} = -10\text{V}, I_E = 10\text{mA}$
Output Capacitance	C_{ob}		4.0	7.0	pF	$V_{CB} = -10\text{V}, I_E = 0, f = 1.0\text{MHz}$
Turn on Time	t_{on}		30	50	ns	$I_C = -50\text{mA}, I_{B1} = -I_{B2} = 5.0\text{mA}$ See test circuit
Storage Time	t_{stg}		125	200	ns	
Trun off Time	t_{off}		140	250	ns	

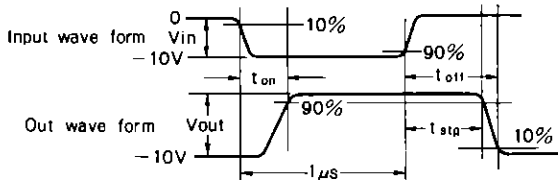
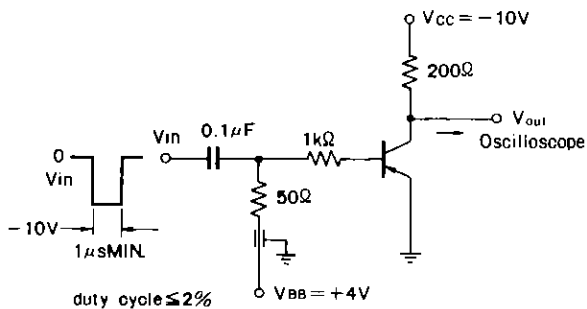
* Pulsed $PW \leq 350\mu\text{s}$, duty cycle $\leq 2\%$

TYPICAL CHARACTERISTICS (Ta = 25°C)





ton, t_{stg}, t_{off} Test Circuit



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