To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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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RENESAS

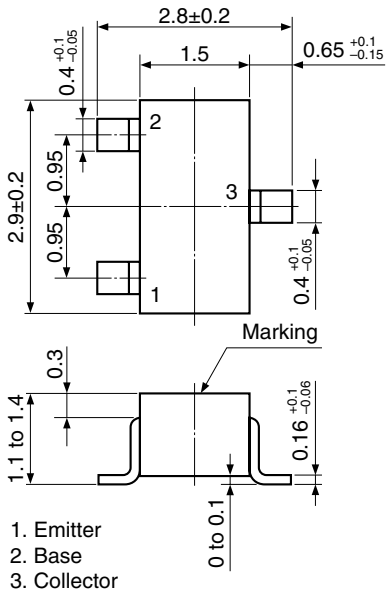
SILICON TRANSISTOR
2SC3735

HIGH SPEED SWITCHING
NPN SILICON EPITAXIAL TRANSISTOR

<R> FEATURES

- High-speed switching
- Low collector saturation voltage
- High gain bandwidth product
- Low collector capacitance
- Can be used complementary to the 2SA1462.
- Package: 3-pin Mini Mold (SC-59)

PACKAGE DRAWING (Unit: mm)



ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CES}	40	V
	V_{CEO}	15	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	200	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	−55 to +150	°C

ELECTRICAL CHRACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = 20 V, I_E = 0 A			0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 3.0 V, I_C = 0 A			0.1	μA
DC Current Gain	h_{FE}	V_{CE} = 1.0 V, I_C = 10 mA	40	90	200	
Collector Saturation Voltage	$V_{CE(sat)}$	I_C = 10 mA, I_B = 1.0 mA		0.15	0.25	V
Base Saturation Voltage	$V_{BE(sat)}$	I_C = 10 mA, I_B = 1.0 mA		0.80	0.85	V
Gain Bandwidth Product	f_T	V_{CE} = 10 V, I_E = −10 mA	500	750		MHz
Collector Capacitance	C_{ob}	V_{CB} = 5.0 V, I_E = 0 A, f = 1.0 MHz		1.8	4.0	pF
Turn-on Time	t_{on}	(When t_{stg}, I_{B1} = −I_{B2} = 10 mA) See **Test Circuits**		8.0	12	ns
Storage Time	t_{stg}			6.0	13	ns
Turn-off Time	t_{off}			12	18	ns

h_{FE} Classification

Marking	B33	B34	B35
h_{FE}	40 to 80	60 to 120	100 to 200

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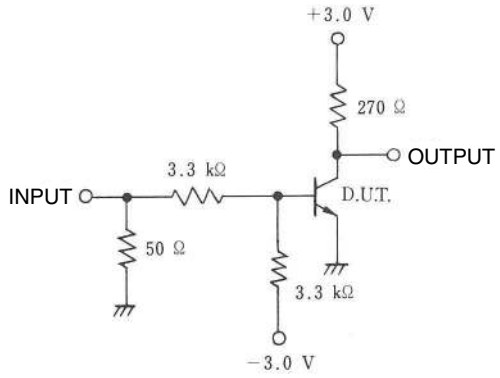
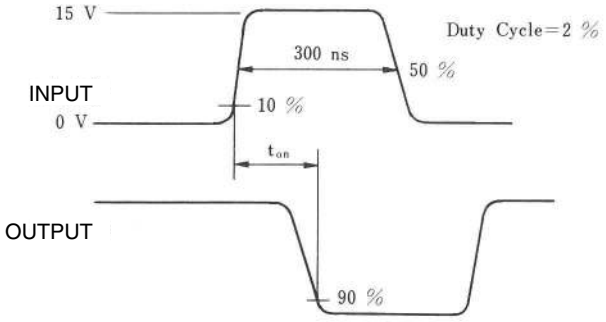
Date Published January 2008 NS
Printed in Japan

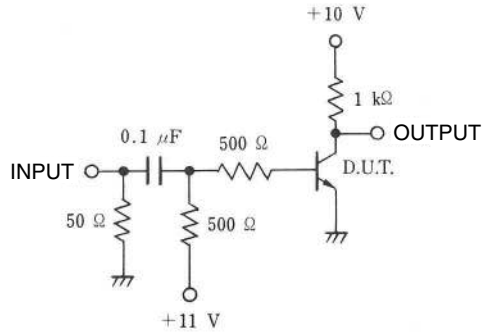
The mark <R> shows major revised points.
The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

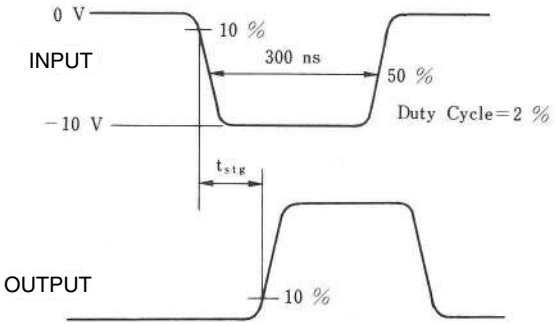
SWITCHING TIME TEST CIRCUITS



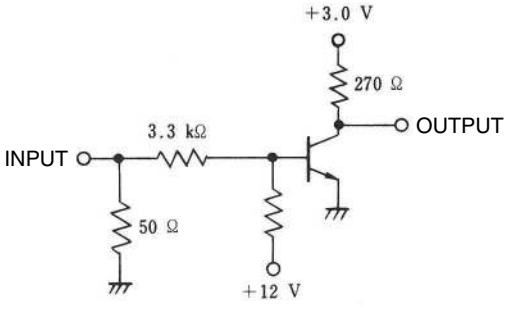


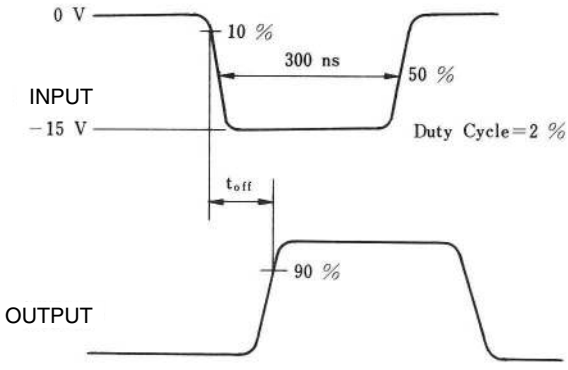
t_{on} SWITCHING





t_{stg} SWITCHING

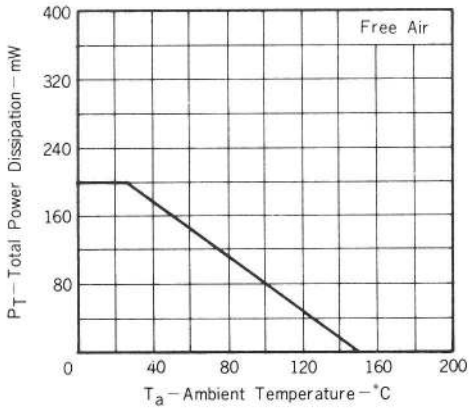




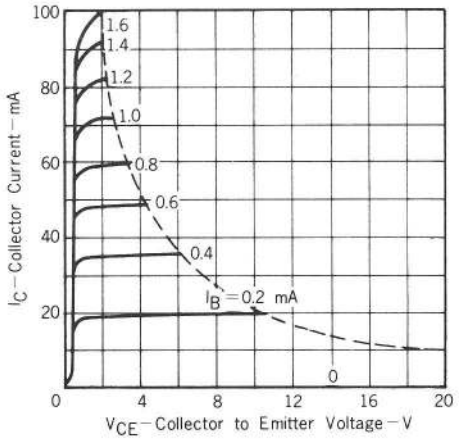
t_{off} SWITCHING

TYPICAL CHARACTERISTICS (T_a = 25 °C)

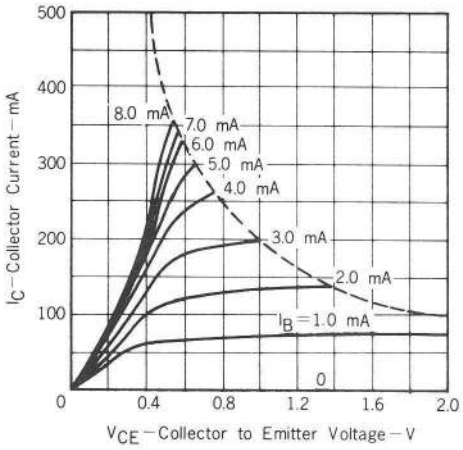
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



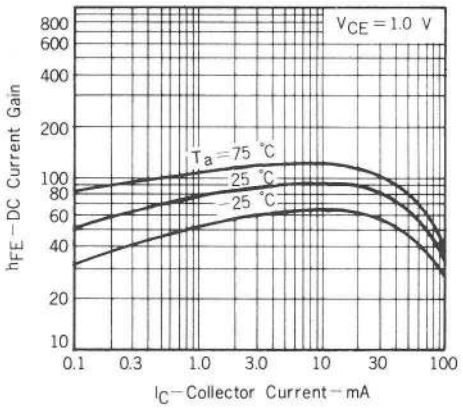
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



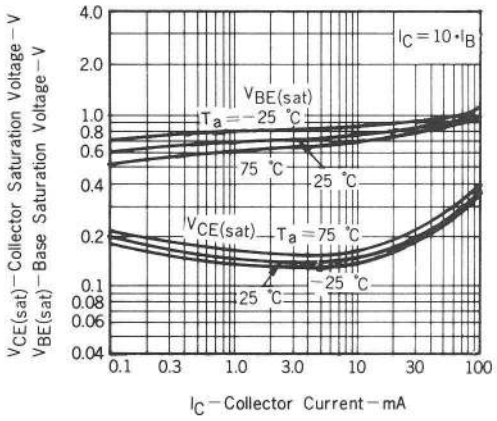
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



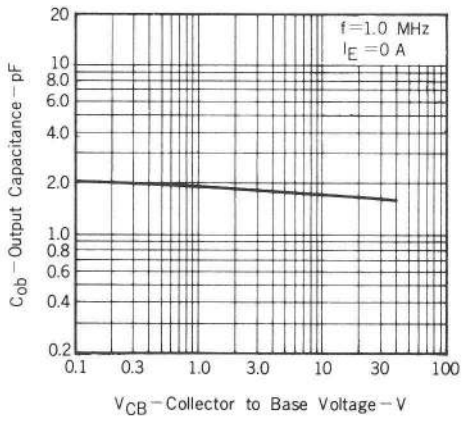
DC CURRENT GAIN vs. COLLECTOR CURRENT



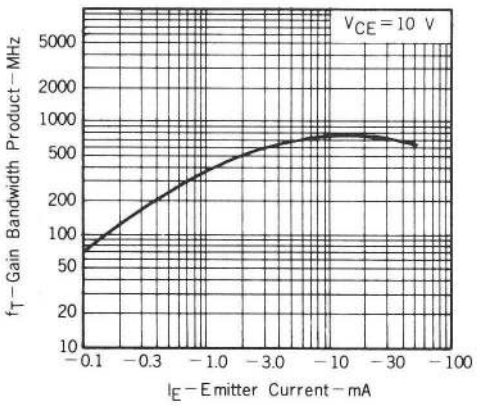
<R> COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



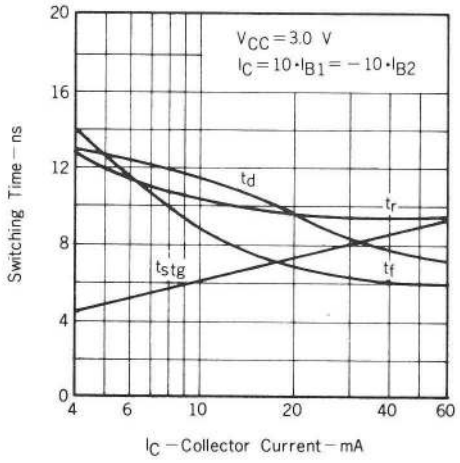
OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



GAIN BANDWIDTH PRODUCT
vs. EMITTER CURRENT



SWITCHING TIME
vs. COLLECTOR CURRENT



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