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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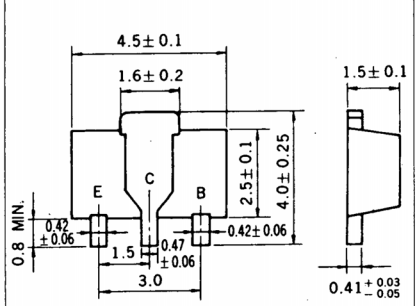
RENESAS

SILICON TRANSISTOR 2SA1463

Phase-out/Discontinued

HIGH SPEED SWITCHING PNP SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD

PACKAGE DIMENSIONS
in millimeters



E. Emitter
C. Collector
B. Base

DESCRIPTION The 2SA1463 is designed for power amplifier and high speed switching applications.

FEATURES

- High speed, high voltage switching.
- Low Collector Saturation Voltage.
- Complementary to the NEC 2SC3736 NPN transistor.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Collector to Base Voltage	V_{CBO}	−60	V
Collector to Emitter Voltage	V_{CEO}	−45	V
Emitter to Base Voltage	V_{EBO}	−5.0	V
Collector Current (DC)	$I_{C(DC)}$	−1.0	A
Collector Current (Pulse)*	$I_{C(Pulse)}$	−2.0	A
Total Power Dissipation **	P_T	2.0	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

* PW ≦ 10 ms, Duty Cycle ≦ 50 %
** When mounted on ceramic substrate of 16 cm² x 0.7 mm

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDICTIONS
Collector Cutoff Current	I_{CES}			−0.5	μA	V_{CE} = −45 V, R_{BE} = 0
Emitter Cutoff Current	I_{EBO}			−0.5	μA	V_{EB} = −4.0 V, I_C = 0
DC Current Gain	h_{FE1}***	60		200		V_{CE} = −10 V, I_C = −50 mA
DC Current Gain	h_{FE2}***	60				V_{CE} = −10 V, I_C = −500 mA
Collector Saturation Voltage	$V_{CE(sat)}$***		−0.26	−0.6	V	I_C = −500 mA, I_B = −50 mA
Base Saturation Voltage	$V_{BE(sat)}$***		−0.98	−1.2	V	
Gain Bandwidth Product	f_T	300	400		MHz	V_{CE} = −10 V, I_E = 100 mA
Output Capacitance	C_{ob}		11	25	pF	V_{CB} = −10 V, I_E = 0, f = 1.0 MHz
Turn-on Time	t_{on}		25	40	ns	I_C = −500 mA I_{B1} = −I_{B2} ≒ −50 mA
Storage Time	t_{stg}		46	70	ns	
Turn-off Time	t_{off}		62	100	ns	

***Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

h_{FE} Classification

MARKING	IL	IK
h_{FE1}	60 to 120	100 to 200

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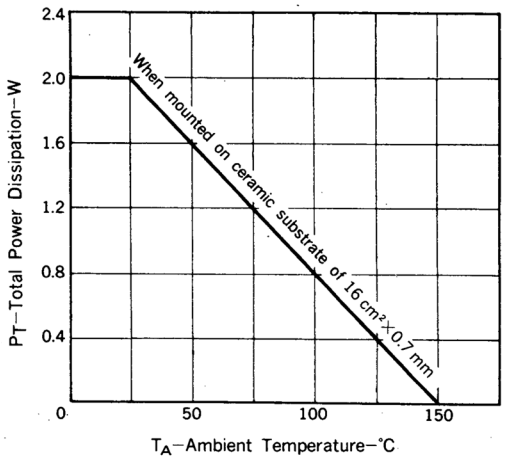
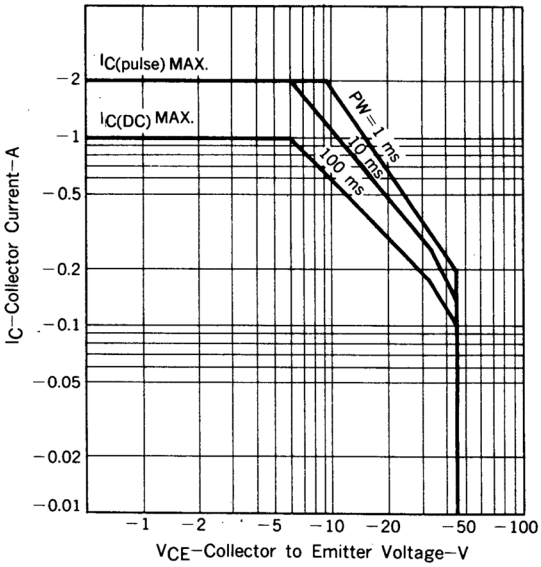
(Previous No. TC-1889A)
Date Published February 2006 NS CP(K)
Printed in Japan

TYPICAL CHARACTERISTICS (T_A = 25°C)

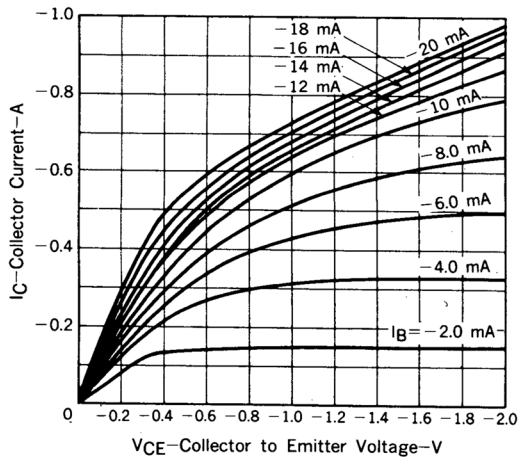
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



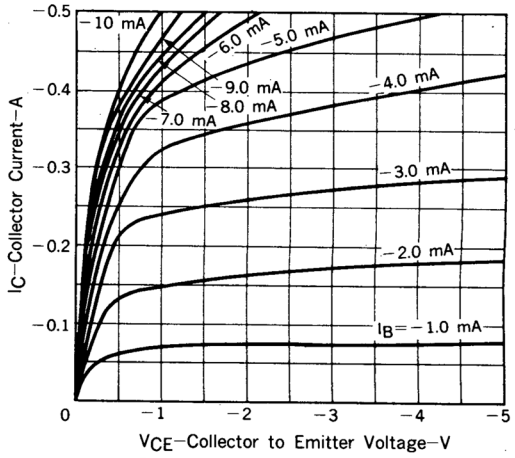
SAFE OPERATING AREA (TRANSIENT THERMAL RESISTANCE METHOD)



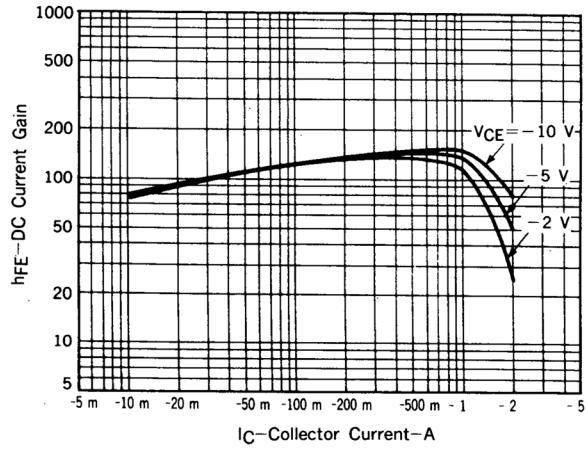
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



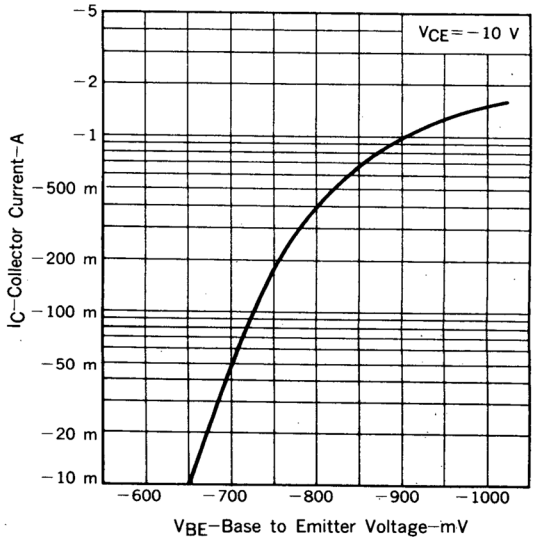
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



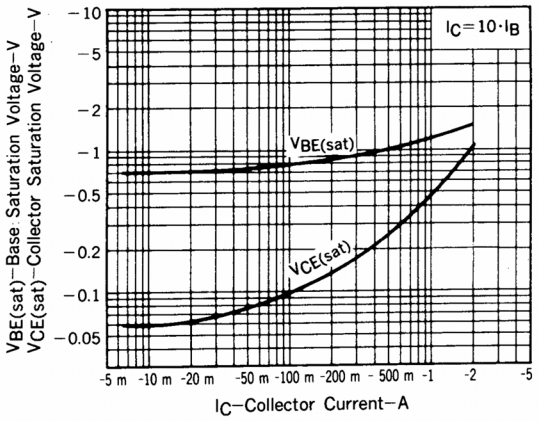
DC CURRENT GAIN vs. COLLECTOR CURRENT



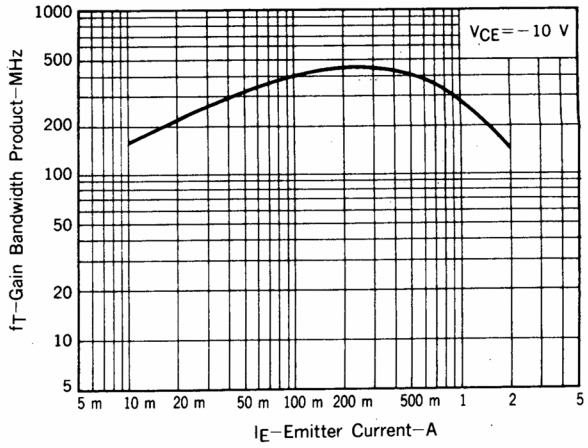
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



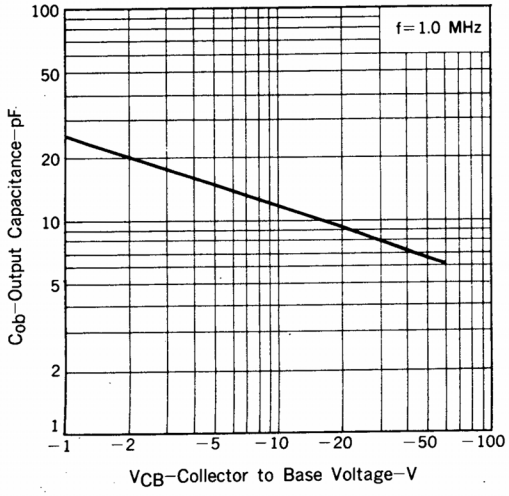
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



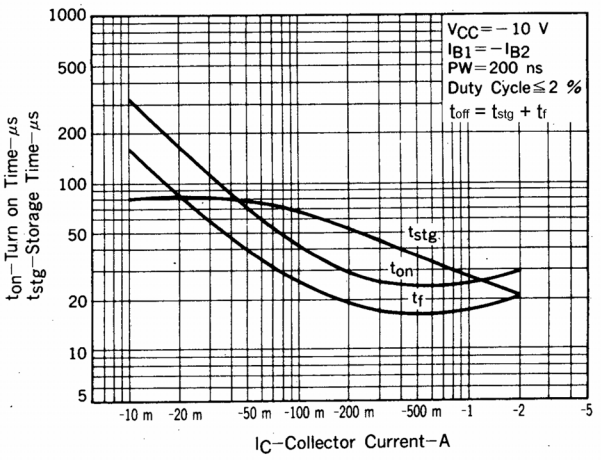
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



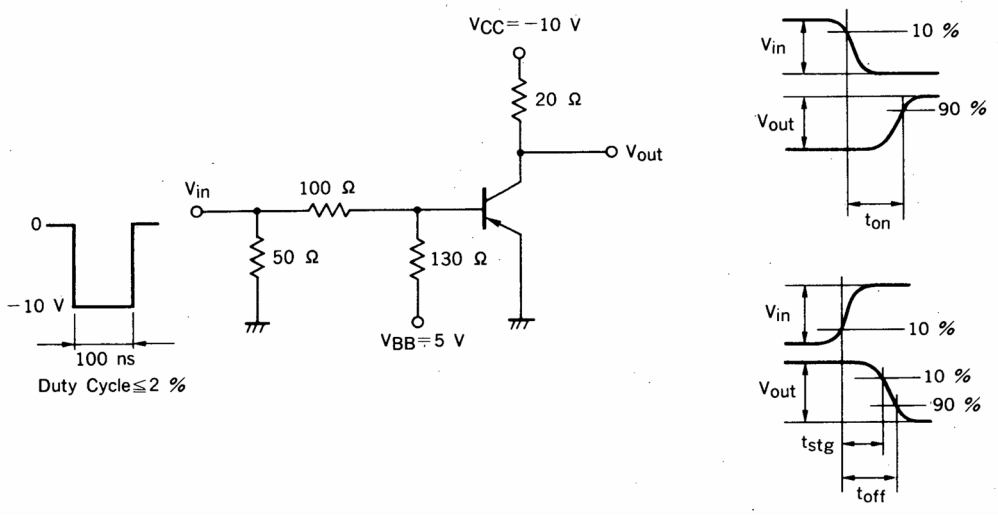
OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



SWITCHING TIME vs. COLLECTOR CURRENT



SWITCHING TIME TEST CIRCUIT



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