

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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SILICON POWER TRANSISTORS NTB707, NTB708

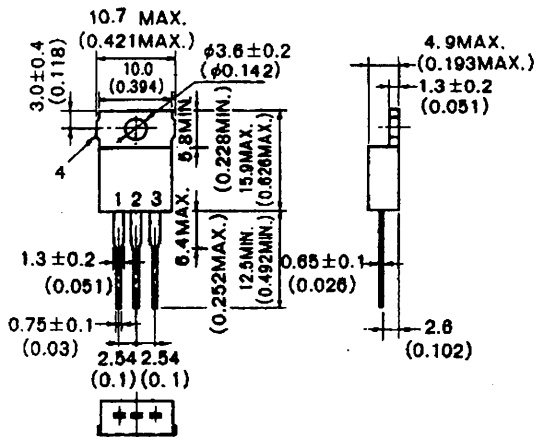
LOW FREQUENCY AMPLIFIER AND LOW SPEED SWITCHING
PNP SILICON EPITAXIAL TRANSISTOR

Industrial Use

DESCRIPTION

Suitable for lamp driver and inductive load driver.

PACKAGE DIMENSIONS in millimeters(inches)



1. Base (B)
2. Collector (C)
3. Emitter (E)
4. Fin (Collector)

FEATURES

- High current switching capability.
- Low collector saturation voltage.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

		NTB707	NTB708	
Collector to Base Voltage	V_{CB0}	-80	-80	V
Collector to Emitter Voltage	V_{CE0}	-60	-80	V
Emitter to Base Voltage	V_{EB0}	-7.0	-7.0	V
Continuous Collector Current	$I_{C(DC)}$	-7.0	-7.0	A
Peak Collector Current	$I_{C(pulse)}^*$	-15	-15	A
Continuous Base Current	$I_{B(DC)}$	-3.5	-3.5	A
Maximum Power Dissipations				
Total Power Dissipations				
at 25°C Ambient Temperature	P_T	2.0		W
at 25°C Case Temperature	P_T	65		W
Maximum Temperatures				
Junction Temperature	T_j	150		$^\circ\text{C}$
Storage Temperature	T_{sig}	-55 to +150		$^\circ\text{C}$

* Pulsed $PW \leq 300 \mu\text{s}$, duty cycle $\leq 10\%$

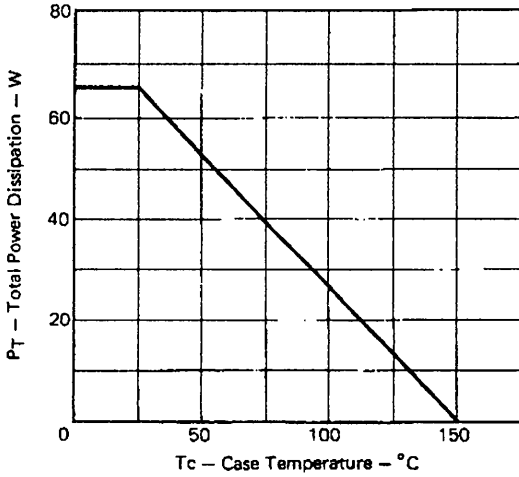
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-10	μA	$V_{CB} = -60\text{V}$, $I_E = 0$
DC Current Gain	h_{FE1}	40				$V_{CE} = -1.0\text{V}$, $I_C = -3.0\text{A}^*$
DC Current Gain	h_{FE2}	20				$V_{CE} = -1.0\text{V}$, $I_C = -5.0\text{A}^*$
Collector Saturation Voltage	$V_{CE(sat)}$			-0.5	V	$I_C = -5.0\text{A}$ *
Base Saturation Voltage	$V_{BE(sat)}$			-1.5	V	$I_B = -0.5\text{A}$

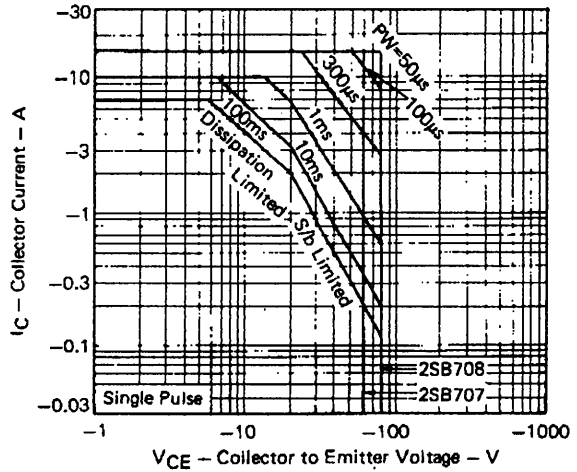
* Pulsed $PW \leq 350 \mu\text{s}$, duty cycle $\leq 2\%$

TYPICAL CHARACTERISTICS (Ta=25°C)

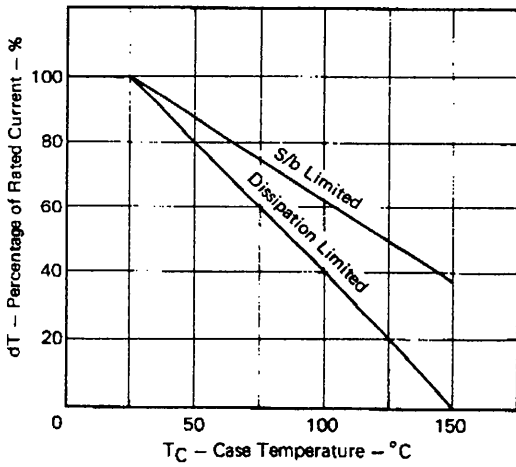
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



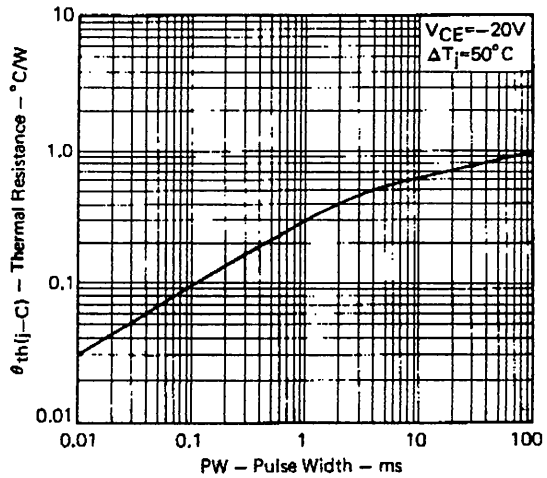
FORWARD BIAS SAFE OPERATING AREAS



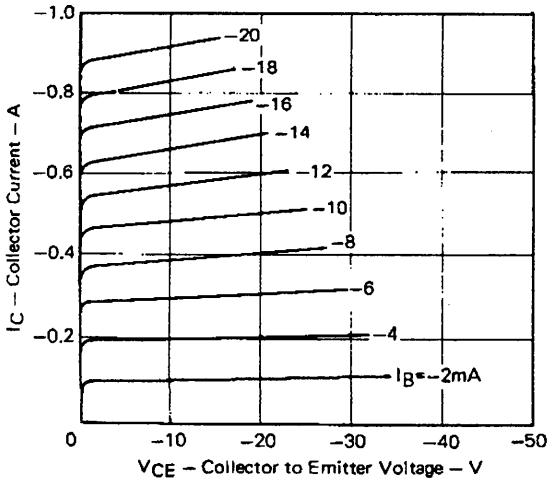
DERATING CURVE OF SAFE OPERATING AREAS



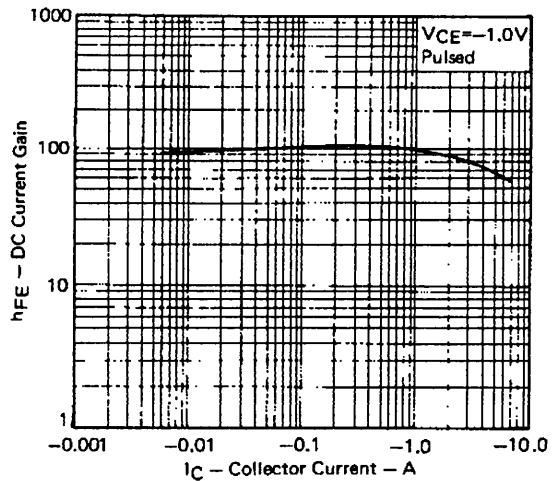
TRANSIENT THERMAL RESISTANCE



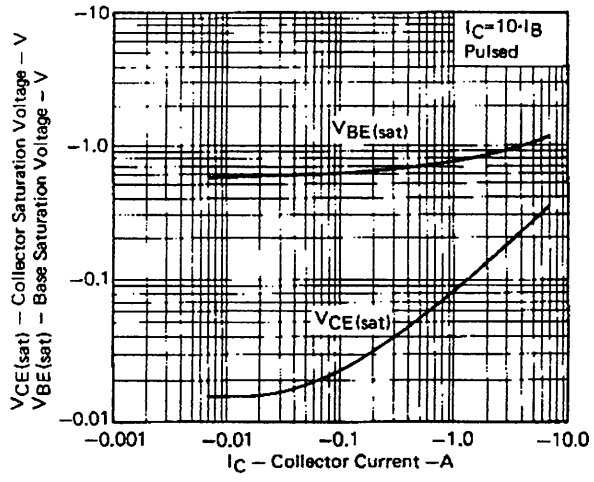
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT



**BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT**





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TC 1791A
JUNE 76-79K
Printed in Japan