

To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

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2SD2107

Silicon NPN Triple Diffused

RENESAS

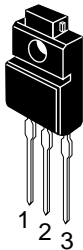
ADE-208-923 (Z)
1st. Edition
September 2000

Application

Low frequency power amplifier

Outline

TO-220FM



- 1. Base
- 2. Collector
- 3. Emitter

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	70	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	4	A
Collector peak current	$I_{C(peak)}$	8	A
Collector power dissipation	P_C	2	W
	P_C^{*1}	25	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

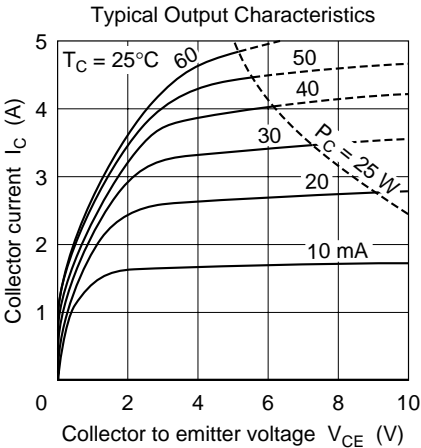
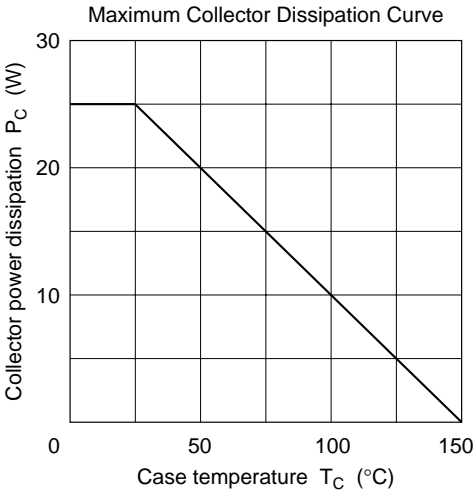
Note: 1. Value at $T_C = 25^\circ\text{C}$.

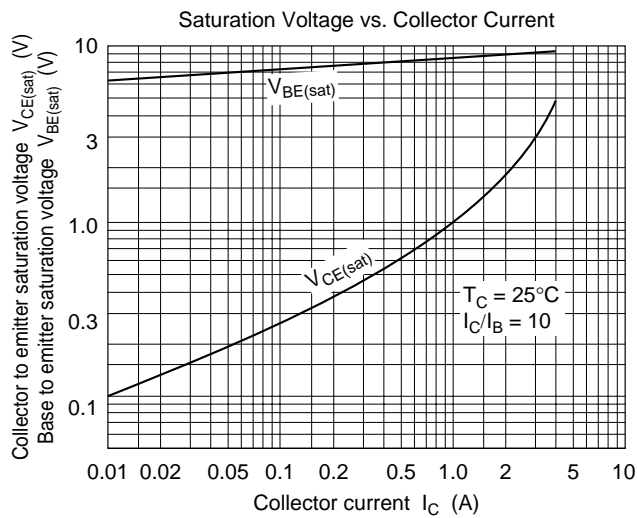
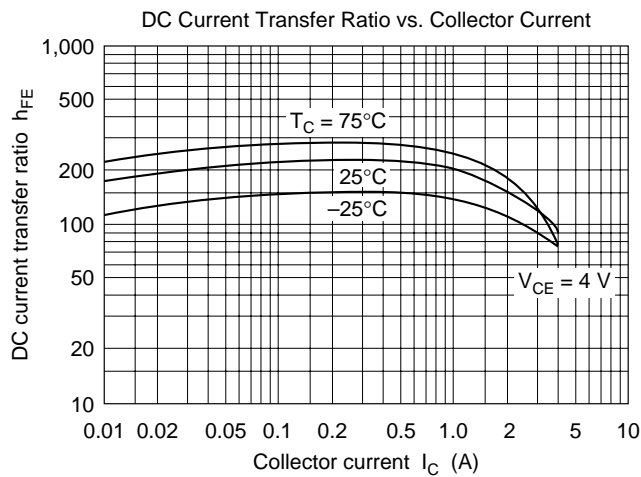
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	70	—	—	V	$I_C = 10\text{ }\mu\text{A}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	V	$I_C = 50\text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10\text{ }\mu\text{A}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 60\text{ V}$, $I_E = 0$
	I_{CEO}	—	—	10		$V_{CE} = 50\text{ V}$, $R_{BE} = \infty$
DC current transfer ratio	h_{FE1}^{*2}	60	—	200		$V_{CE} = 4\text{ V}$, $I_C = 1\text{ A}^{*1}$
	h_{FE2}	35	—			$V_{CE} = 4\text{ V}$, $I_C = 0.1\text{ A}^{*1}$
Base to emitter voltage	V_{BE}	—	—	1.0	V	$V_{CE} = 4\text{ V}$, $I_C = 1\text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C = 2\text{ A}$, $I_B = 0.2\text{ A}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.2	V	$I_C = 2\text{ A}$, $I_B = 0.2\text{ A}^{*1}$

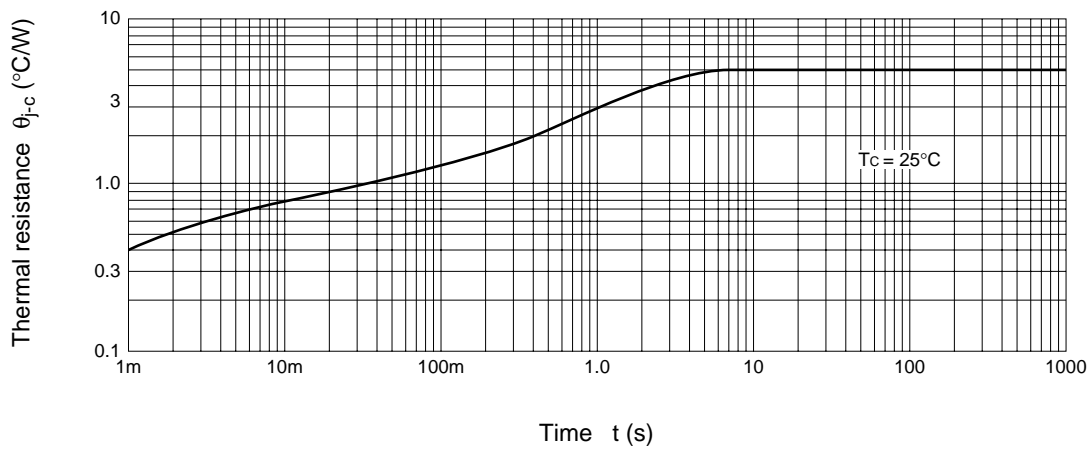
- Notes: 1. Pulse test.
2. The 2SD2107 is grouped by h_{FE1} as follows.

B	C
60 to 120	100 to 200





Transient Thermal Resistance



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HITACHI

Hitachi, Ltd.

Semiconductor & IC Div.

Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100, Japan

Tel: Tokyo (03) 3270-2111

Fax: (03) 3270-5109

For further information write to:

Hitachi America, Ltd.

Semiconductor & IC Div.

2000 Sierra Point Parkway

Brisbane, CA. 94005-1835

U S A

Tel: 415-589-8300

Fax: 415-583-4207

Hitachi Europe GmbH

Electronic Components Group

Continental Europe

Dornacher Straße 3

D-85622 Feldkirchen

München

Tel: 089-9 91 80-0

Fax: 089-9 29 30 00

Hitachi Europe Ltd.

Electronic Components Div.

Northern Europe Headquarters

Whitebrook Park

Lower Cookham Road

Maidenhead

Berkshire SL6 8YA

United Kingdom

Tel: 0628-585000

Fax: 0628-778322

Hitachi Asia Pte. Ltd.

16 Collyer Quay #20-00

Hitachi Tower

Singapore 0104

Tel: 535-2100

Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.

Unit 706, North Tower,

World Finance Centre,

Harbour City, Canton Road

Tsim Sha Tsui, Kowloon

Hong Kong

Tel: 27359218

Fax: 27306071