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# 2SD2109

Silicon NPN Triple Diffused

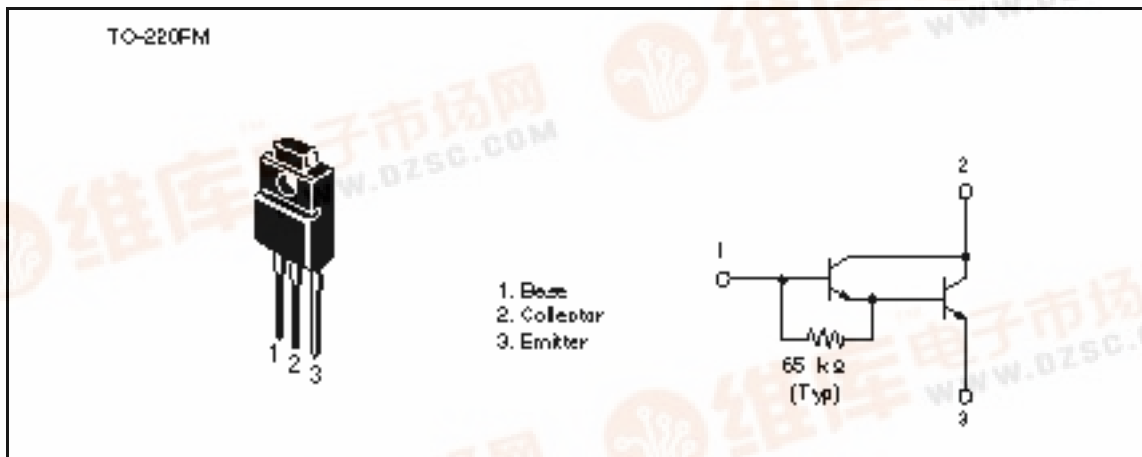
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## Application

Low frequency power amplifier

## Outline



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### Absolute Maximum Ratings (Ta = 25°C)

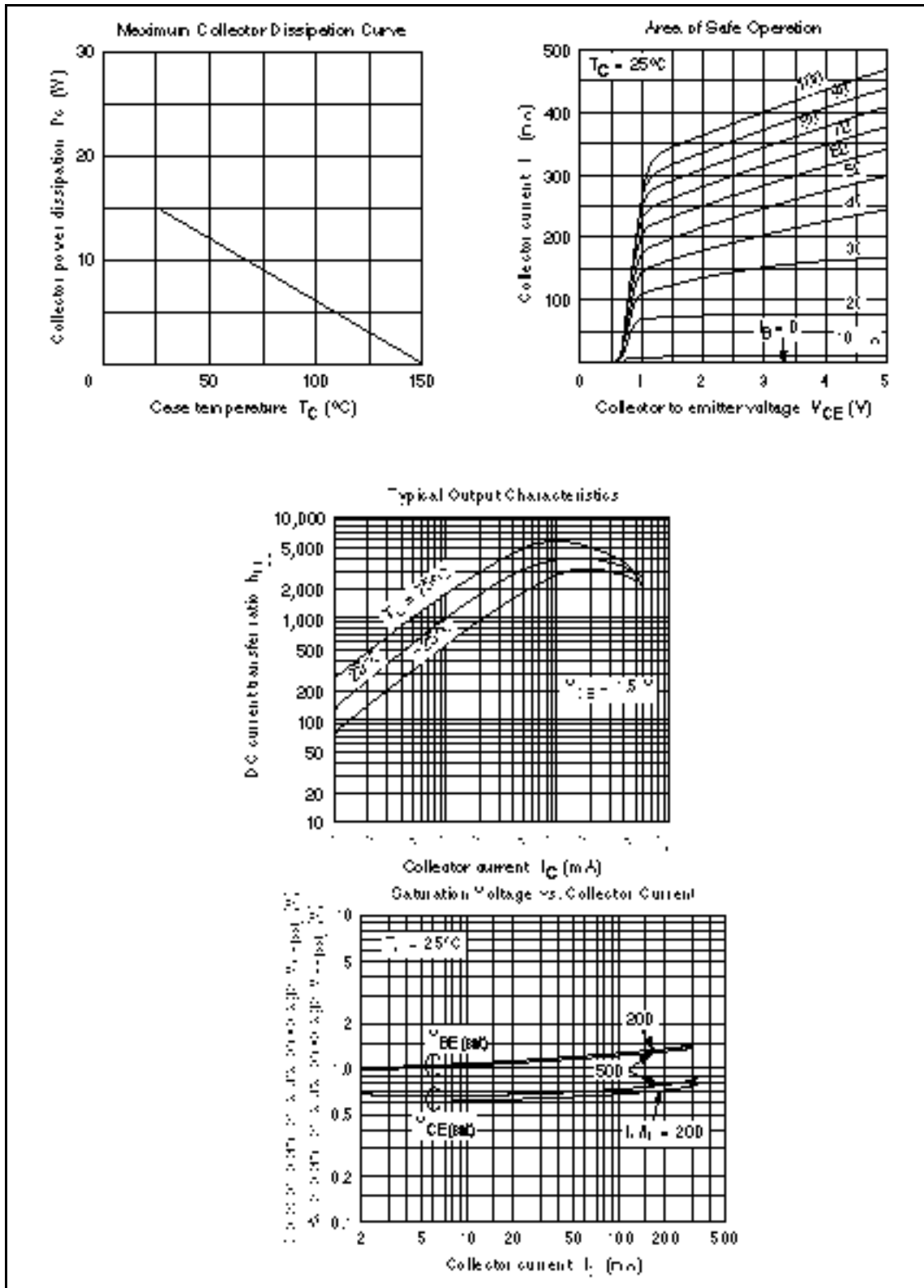
Item	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	300	V
Collector to emitter voltage	$V_{CEO}$	300	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	0.3	A
Collector peak current	$I_{C(\text{peak})}$	0.6	A
Collector power dissipation	$P_C$	2	W
	$P_C^{*1}$	15	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{\text{stg}}$	-55 to +150	°C

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

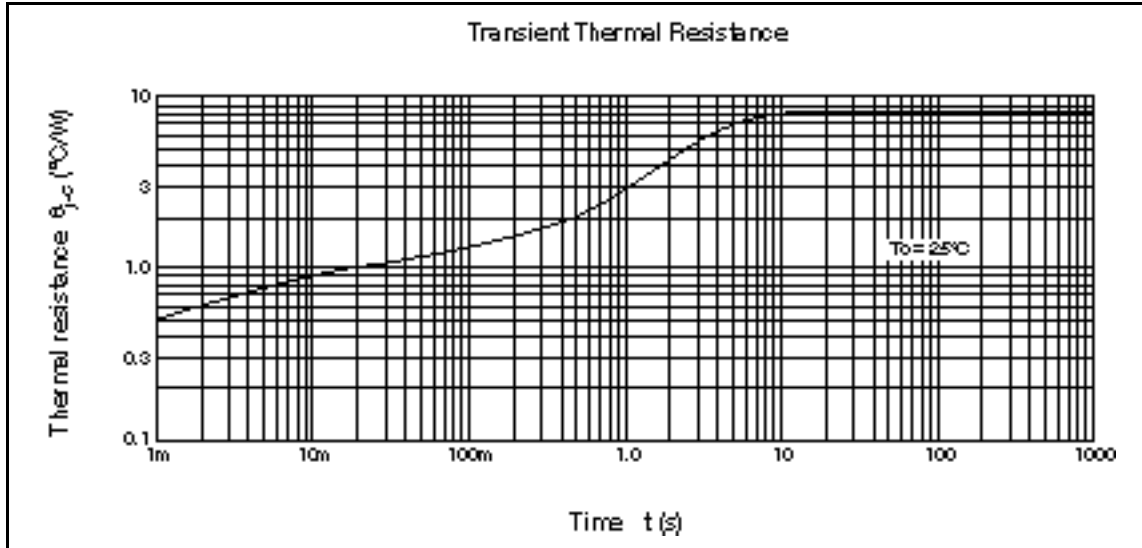
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	300	—	—	V	$I_C = 1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	300	—	—	V	$I_C = 10 \text{ mA}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 1 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu\text{A}$	$V_{CB} = 300 \text{ V}, I_E = 0$
	$I_{CEO}$	—	—	10		$V_{CE} = 60 \text{ V}, R_{BE} =$
	$I_{EBO}$	—	—	10		$V_{EB} = 5 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE1}$	1000	—	—		$V_{CE} = 1.5 \text{ V}, I_C = 20 \text{ mA}^{*1}$
	$h_{FE2}$	1500	—	—		$V_{CE} = 1.5 \text{ V}, I_C = 100 \text{ mA}^{*1}$
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	—	—	1.5	V	$I_C = 100 \text{ mA}, I_B = 0.2 \text{ mA}^{*1}$
Base to emitter saturation voltage	$I_{BE(\text{sat})}$	—	—	2.0	V	$I_C = 100 \text{ mA}, I_B = 0.2 \text{ mA}^{*1}$

Note: 1. Pulse test.



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# HITACHI

## Hitachi, Ltd.

Semiconductor & IC Div.

Nippon Bldg., 2-6-2, Ohite-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

Brabens, CA 94005-4835

U.S.A.

Tel: 415-589-8300

Fax: 415-589-4207

Hitachi Europe GmbH

Electronic Components Group

Continental Europe

Dornacher Straße 3

D-95522 Feldkirchen

München

Tel: 089-9 24 80-0

Fax: 089-9 29 30 00

Hitachi Europe Ltd.

Electronic Components Div.

Northern Europe Headquarters

Whitbrook Park

Lower Cookham Road

Maidenhead

Berkshire SL6 6YA

United Kingdom

Tel: 0628-585000

Fax: 0628-778322

Hitachi Asia Pte. Ltd.

45 Collyer Quay #20-00

Hitachi Tower

Singapore 0104

Tel: 535-2100

Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.

Unit 705, North Tower,

World Finance Centre

Harbour City, Canton Road

Tsim Sha Tsui, Kowloon

Hong Kong

Tel: 27359218

Fax: 27308074