
2SD2030, 2SD2031

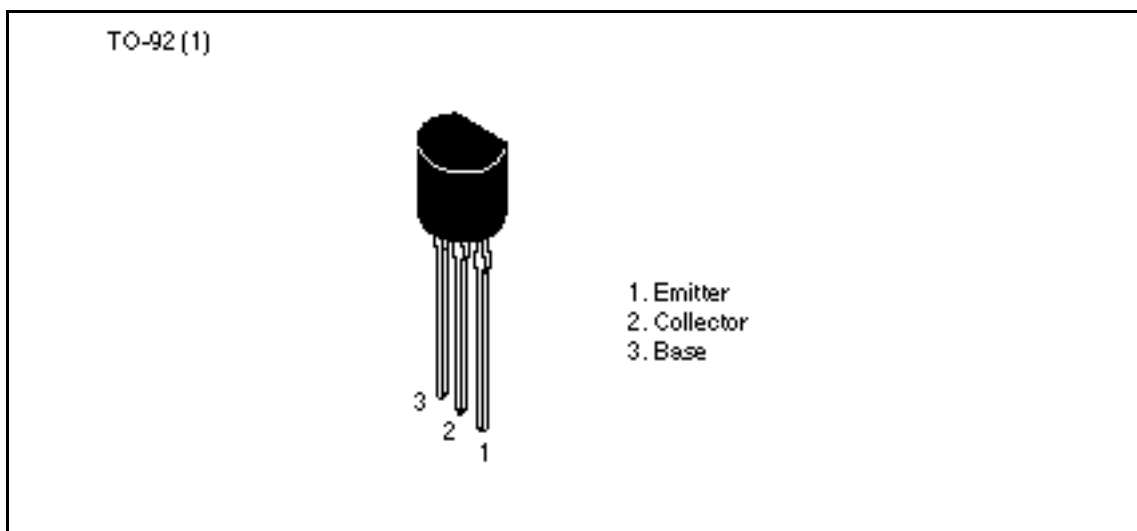
Silicon NPN Epitaxial

HITACHI

Application

Low frequency high voltage amplifier

Outline



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	2SD2030	2SD2031	Unit
Collector to base voltage	V_{CBO}	160	200	V
Collector to emitter voltage	V_{CEO}	160	200	V
Emitter to base voltage	V_{EBO}	5	5	V
Collector current	I_C	100	100	mA
Collector power dissipation	P_C	400	400	mW
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	-55 to +150	-55 to +150	°C

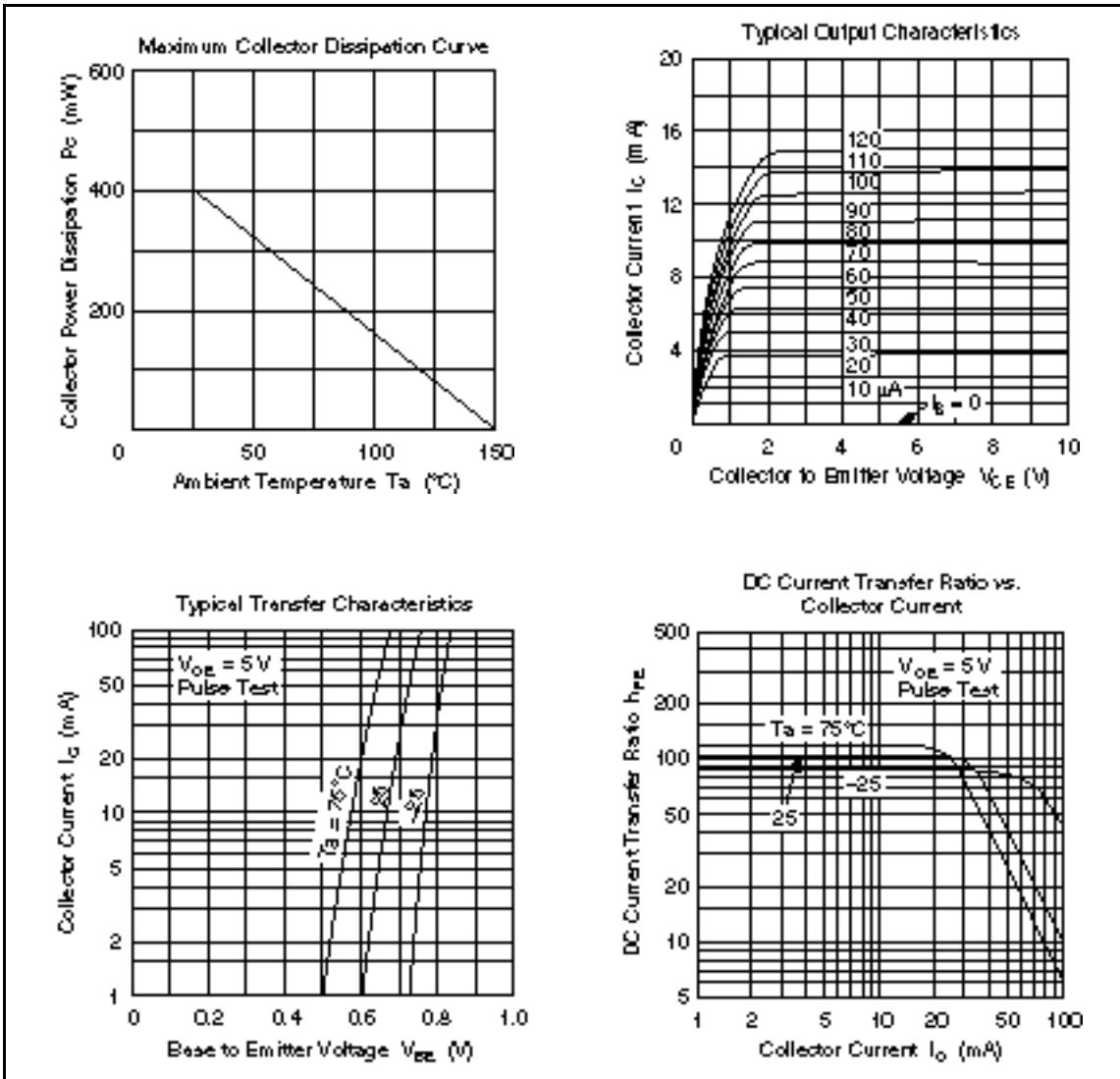
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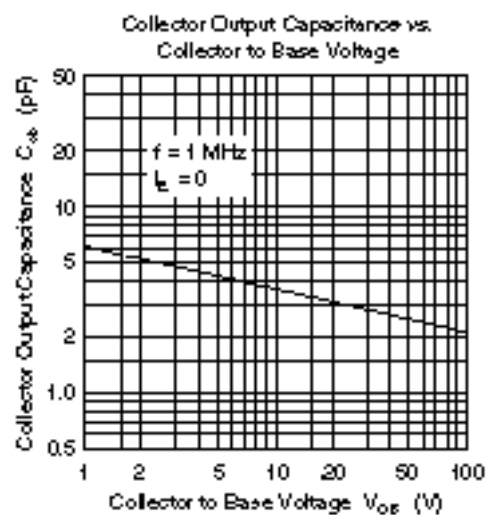
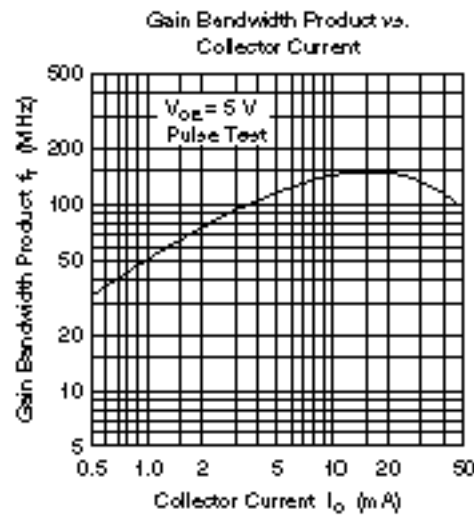
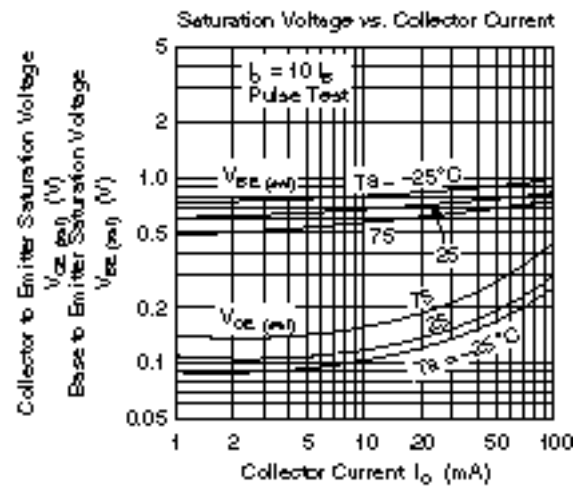
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	2SD2030 $V_{(BR)CBO}$	160	—	—	V	$I_C = 10 \mu A, I_E = 0$
	2SD2031	200				
Collector to emitter breakdown voltage	2SD2030 $V_{(BR)CEO}$	160	—	—	V	$I_C = 1 \text{ mA}, R_{BE} =$
	2SD2031	200				
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	2SD2030 I_{CBO}	—	—	10	μA	$V_{CB} = 140 \text{ V}, I_E = 0$
	2SD2031					$V_{CB} = 160 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	200		$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$
	h_{FE2}	30	—	—		$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$
Base to emitter voltage	V_{BE}	—	—	1.5	V	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	$I_C = 30 \text{ mA}, I_B = 3 \text{ mA}$
Gain bandwidth product	f_T	—	140	—	MHz	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$
Collector output capacitance	C_{ob}	—	3.8	—	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$

Note: 1. The 2SD2030 and 2SD2031 are grouped by h_{FE1} as follows.

Grade	B	C
h_{FE1}	60 to 120	100 to 200





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HITACHI

Hitachi, Ltd.

Semiconductor & IC Div.

Nippon Bldg., 2-5-2, 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

Brisbane, CA 94005-4835

U.S.A.

Tel 415-589-8300

Fax 415-589-4207

Hitachi Europe GmbH

Electronic Components Group

Continental Europe

Darnecker 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

High Wycombe

Berkshire SL6 6YA

United Kingdom

Tel 0628-885000

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