
2SC1345(K)

Silicon NPN Epitaxial

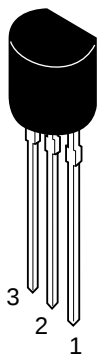
HITACHI

Application

Low frequency low noise amplifier

Outline

TO-92 (1)



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

2SC1345 (K)

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	55	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

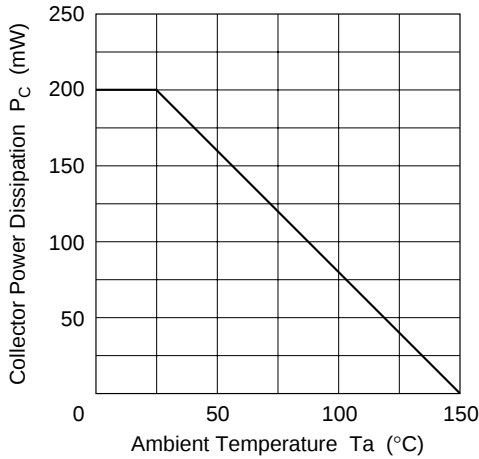
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	55	—	—	V	$I_C = 10\text{ }\mu\text{A}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	50	—	—	V	$I_C = 1\text{ mA}$, $R_{BE} = \infty$
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}	—	—	0.5	μA	$V_{CB} = 18\text{ V}$, $I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 2\text{ V}$, $I_C = 0$
DC current transfer ratio	h_{FE}^{*1}	250	—	1200		$V_{CE} = 12\text{ V}$, $I_C = 2\text{ mA}$
Base to emitter voltage	V_{BE}	—	—	0.75	V	$V_{CE} = 12\text{ V}$, $I_C = 2\text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	$I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$
Collector output capacitance	C_{ob}	—	2.3	3.5	pF	$V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$
Gain bandwidth product	f_T	—	230	—	MHz	$V_{CE} = 12\text{ V}$, $I_C = 2\text{ mA}$
Noise figure	NF	—	—	8	dB	$V_{CE} = 6\text{ V}$, $I_C = 0.1\text{ mA}$, $f = 10\text{ Hz}$, $R_g = 10\text{ k}\Omega$
		—	—	1	dB	$V_{CE} = 6\text{ V}$, $I_C = 0.1\text{ mA}$, $f = 1\text{ kHz}$, $R_g = 10\text{ k}\Omega$

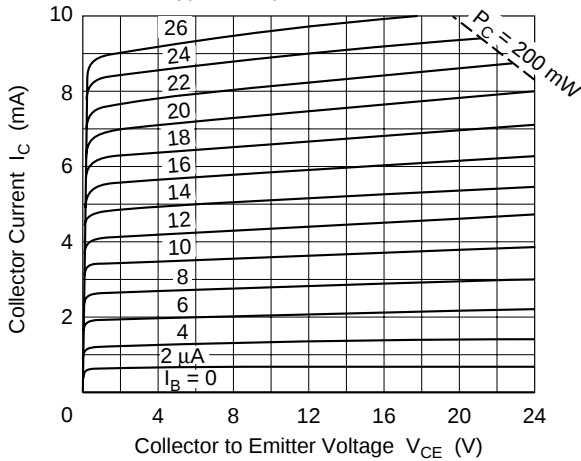
Note: 1. The 2SC1345(K) is grouped by h_{FE} as follows.

D	E	F
250 to 500	400 to 800	600 to 1200

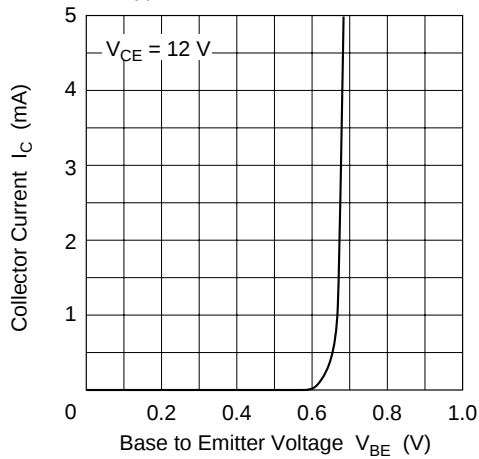
Maximum Collector Dissipation Curve



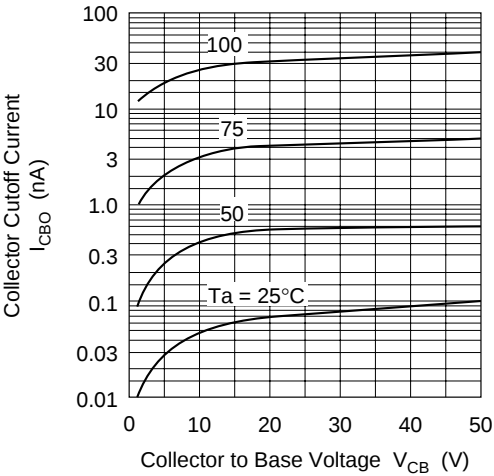
Typical Output Characteristics

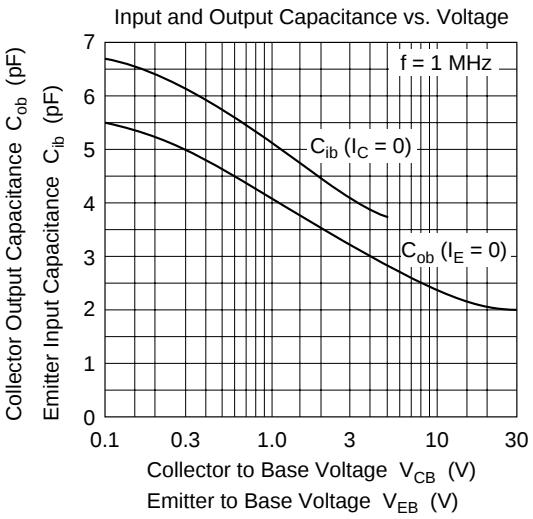
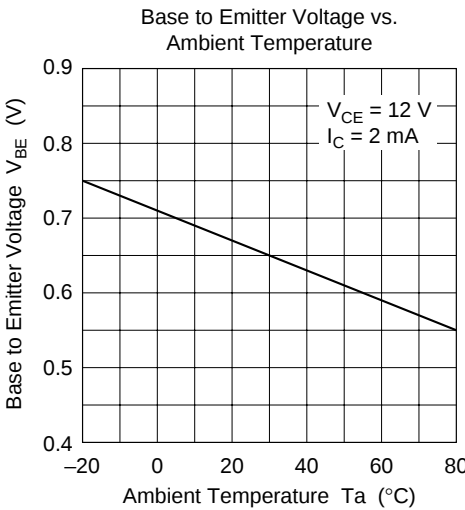
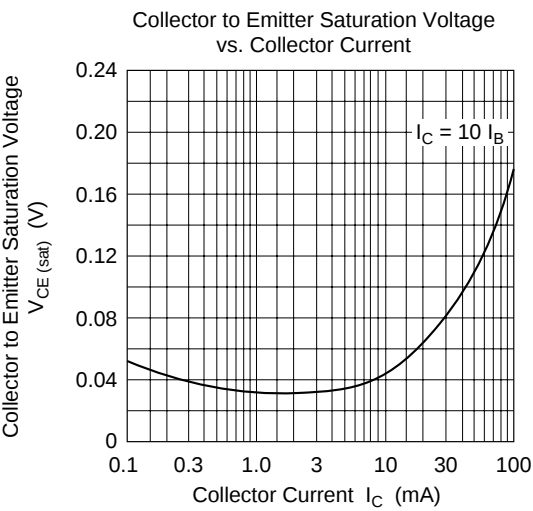
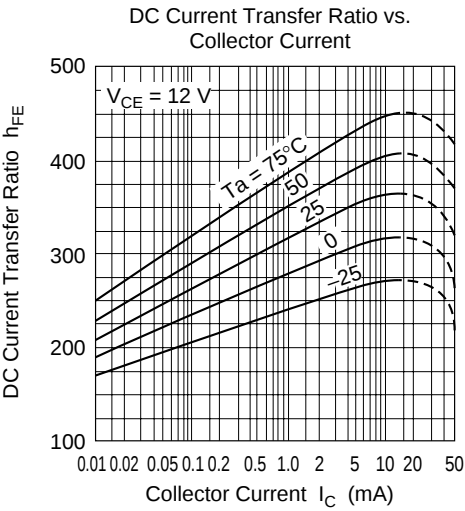


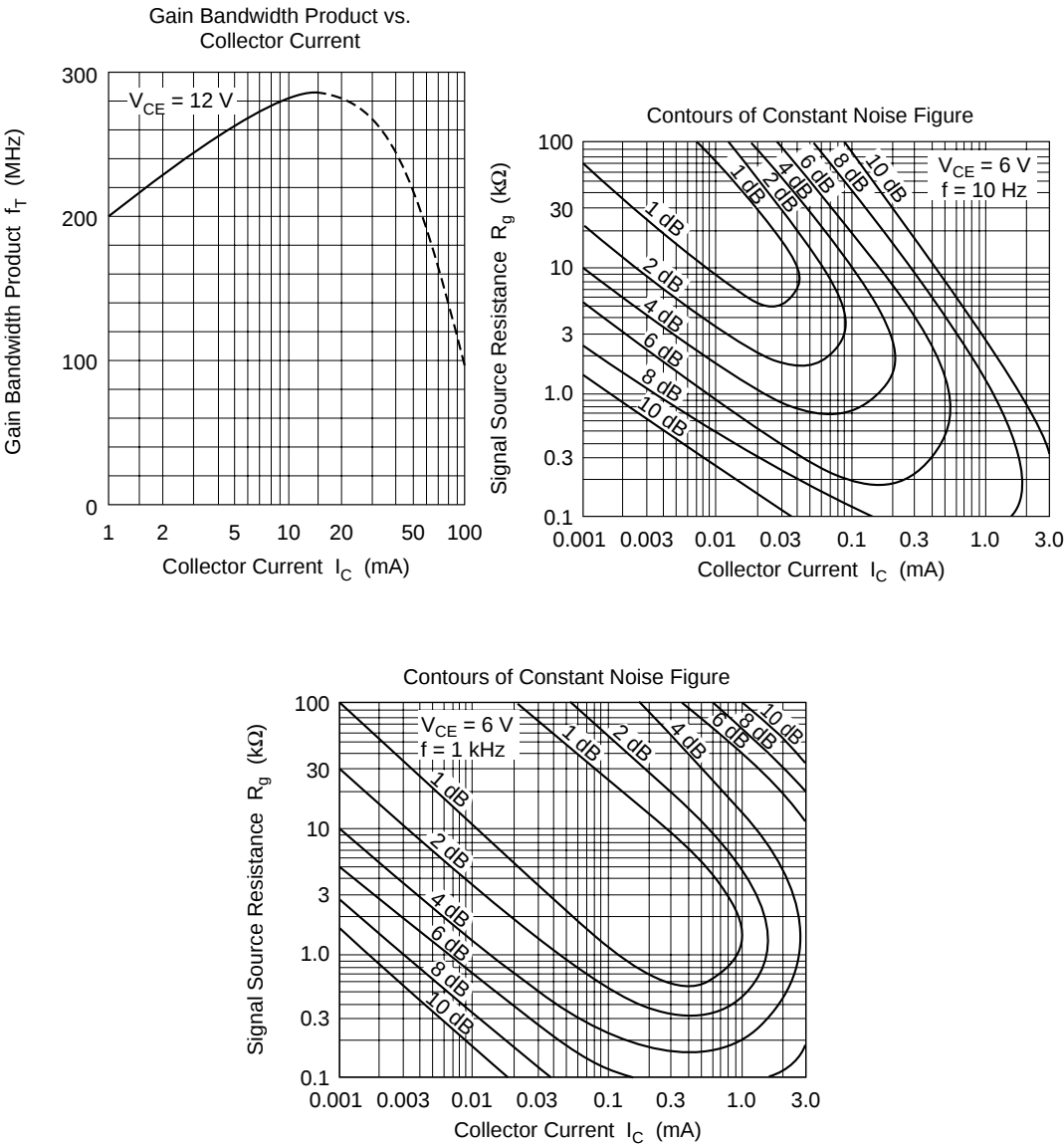
Typical Transfer Characteristics

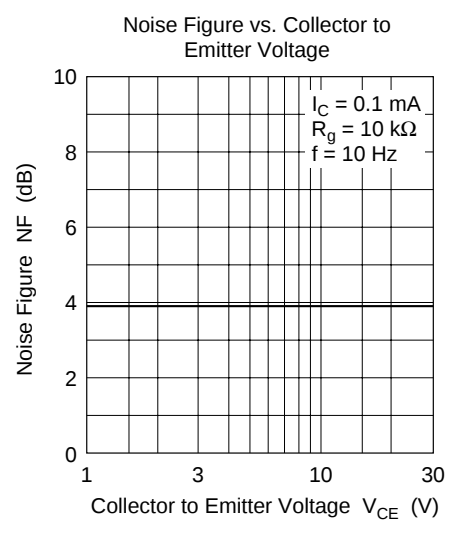
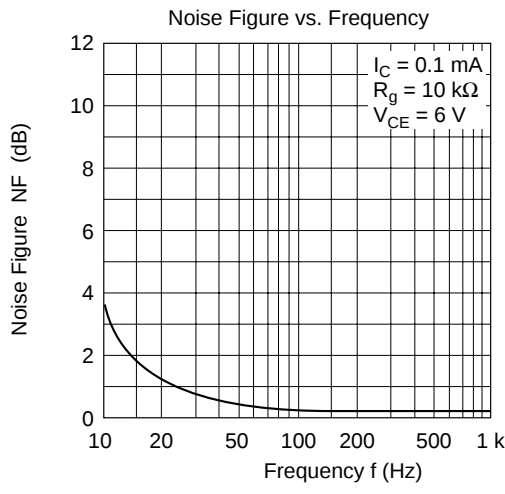
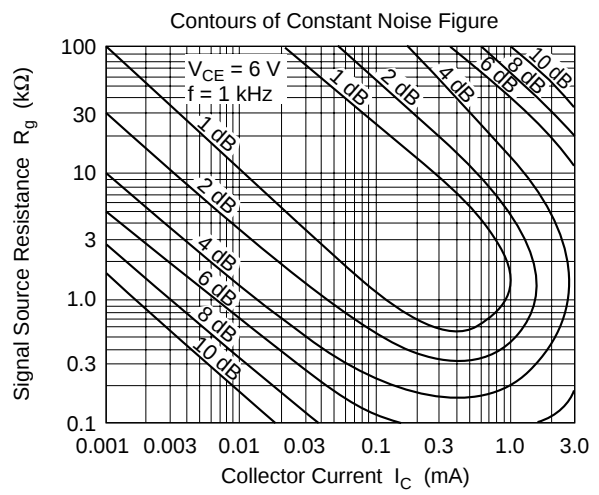


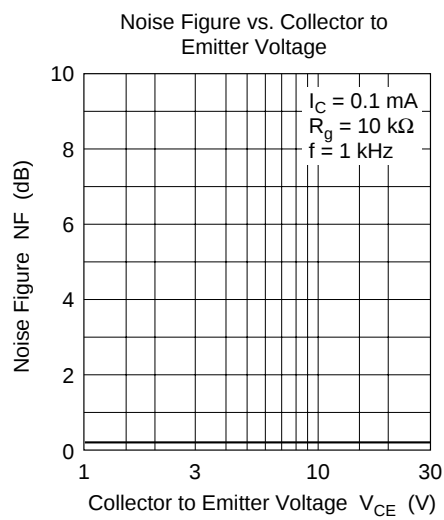
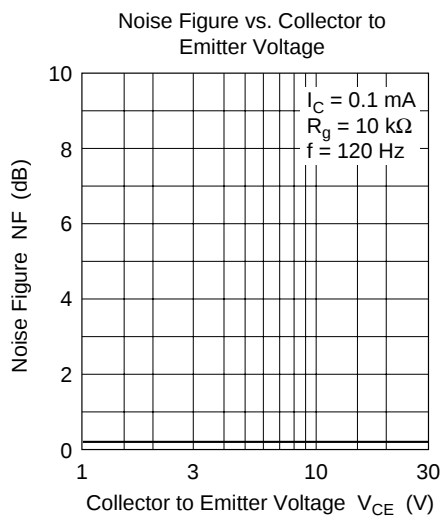
Collector Cutoff Current vs. Collector to Base Voltage

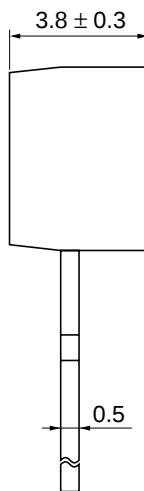
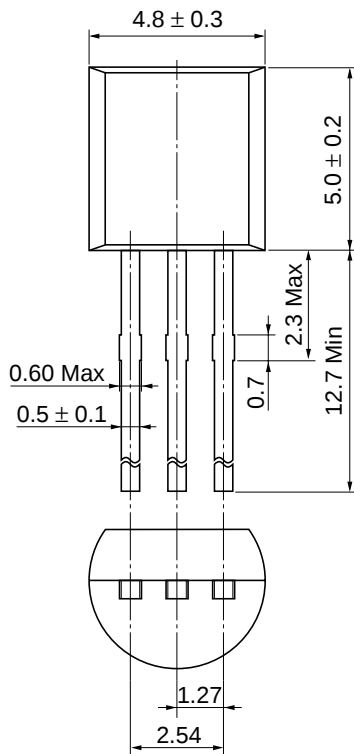












Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

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For further information write to:

Hitachi Semiconductor (America) Inc. 179 East Tasman Drive, San Jose, CA 95134 Tel: <1> (408) 433-1990 Fax: <1> (408) 433-0223	Hitachi Europe GmbH Electronic components Group Dornacher Straße 3 D-85622 Feldkirchen, Munich Germany Tel: <49> (89) 9 9180-0 Fax: <49> (89) 9 29 30 00 Hitachi Europe Ltd. Electronic Components Group. Whitebrook Park Lower Cookham Road Maidenhead Berkshire SL6 8YA, United Kingdom Tel: <44> (1628) 585000 Fax: <44> (1628) 778322
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Hitachi Asia Pte. Ltd. 16 Collyer Quay #20-00 Hitachi Tower Singapore 049318 Tel: 535-2100 Fax: 535-1533 Hitachi Asia Ltd. Taipei Branch Office 3F, Hung Kuo Building. No.167, Tun-Hwa North Road, Taipei (105) Tel: <886> (2) 2718-3666 Fax: <886> (2) 2718-8180
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Hitachi Asia (Hong Kong) Ltd. Group III (Electronic Components) 7/F., North Tower, World Finance Centre, Harbour City, Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong Tel: <852> (2) 735 9218 Fax: <852> (2) 730 0281 Telex: 40815 HITEC HX
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