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# 2SC4628

Silicon NPN Planar

# HITACHI

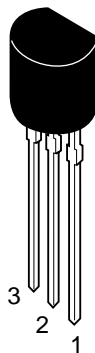
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## Application

High frequency amplifier

## Outline

TO-92 (2)



1. Emitter
2. Collector
3. Base

## 2SC4628

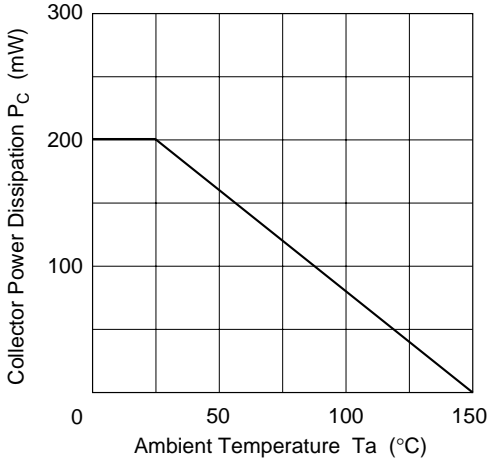
### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated	Unit
Collector to base voltage	$V_{CBO}$	20	V
Collector to emitter voltage	$V_{CEO}$	20	V
Emitter to base voltage	$V_{EBO}$	3	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

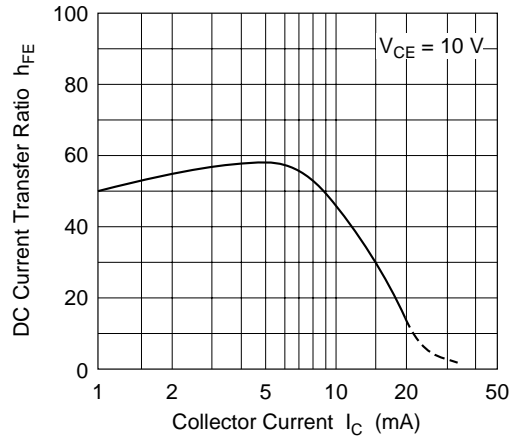
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	20	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 3 \text{ V}, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	1	$\mu A$	$V_{CB} = 15 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE}$	60	—	320		$V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$
Gain bandwidth product	$f_T$	600	—	—	MHz	$V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$
Reverse transfer capacitance	$C_{re}$	—	—	0.9	pF	$V_{CB} = 10 \text{ V}, I_E = 0,$ emitter common, $f = 1 \text{ MHz}$
Power gain	PG	10	—	—	dB	$V_{CB} = 10 \text{ V}, I_C = 2 \text{ mA},$ $f = 800 \text{ MHz}$
Noise figure	NF	—	—	7.0	dB	

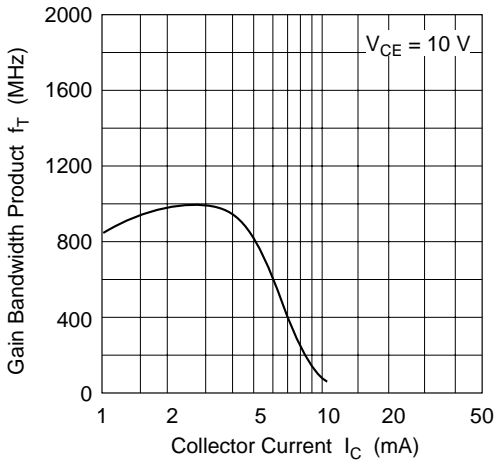
Maximum Collector Dissipation Curve



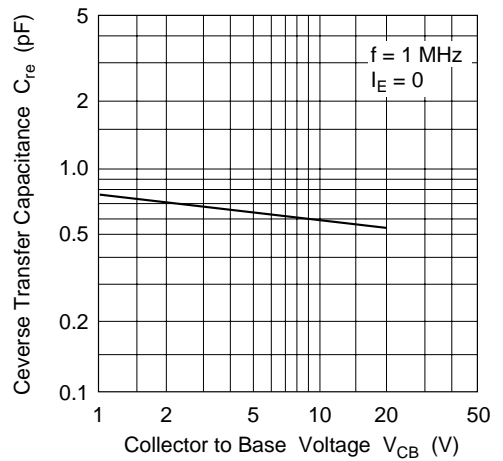
DC Current Transfer Ratio vs. Collector Current

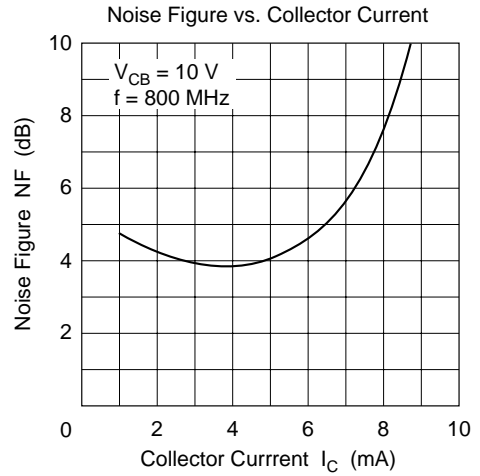
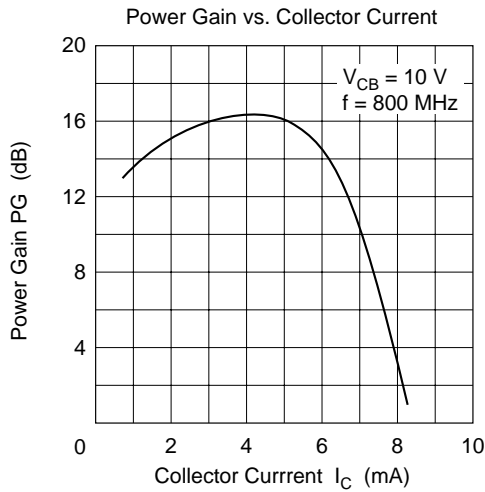


Gain Bandwidth Product vs. Collector Current

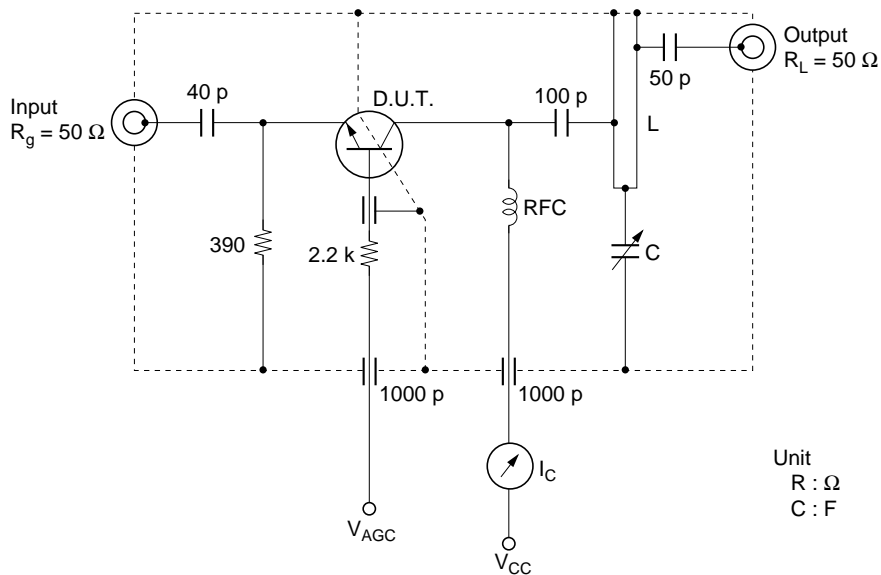


Reverse Transfer Capacitance vs. Collector to Base Voltage



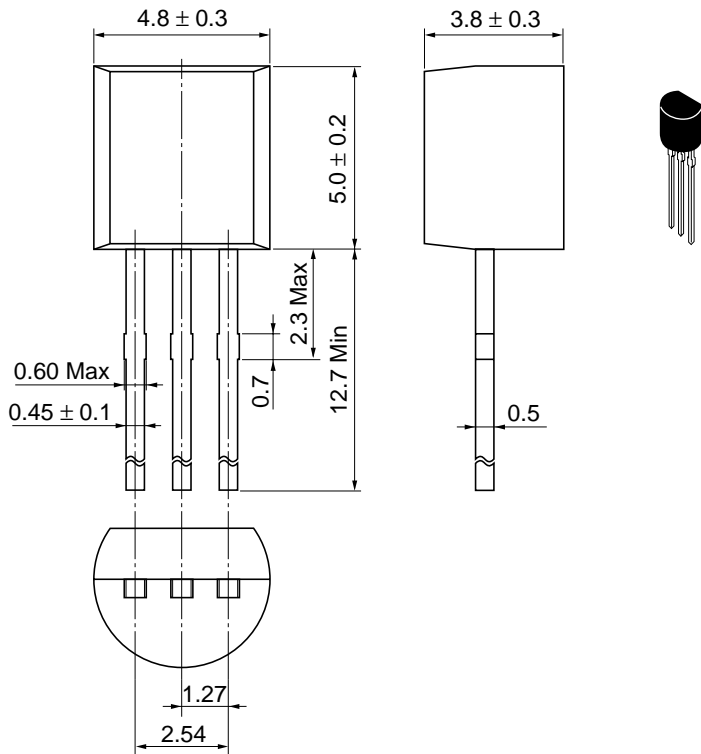


800 MHz Power Gain and Noise Figure Test Circuit



Unit  
R :  $\Omega$   
C : F

- C : 0.5 to 10 pF variable capacitance
- L :  $\lambda/4$  silver plated copper  $26 \times 3 \times 1$  (mm)  
Collector tap to ground distance: 7 mm  
Output tap to ground distance: 3 mm
- RFC : 0.17 mm copper wire, 2.4 mm inside dia, 16 turns  
-3 dB down bandwidth is 40 MHz



Hitachi Code	TO-92 (2)
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

URL      North America      : <http://semiconductor.hitachi.com/>  
             Europe                 : <http://www.hitachi-eu.com/hel/ecg>  
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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

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

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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