

2SC2545, 2SC2546, 2SC2547

Silicon NPN Epitaxial

RENESAS

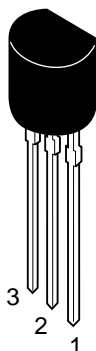
ADE-208-1067A (Z)
2nd. Edition
Mar. 2001

Application

- Low frequency low noise amplifier

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

2SC2545, 2SC2546, 2SC2547

Absolute Maximum Ratings (Ta = 25°C)

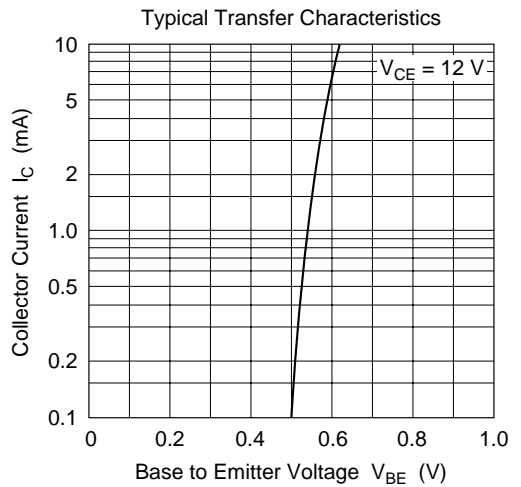
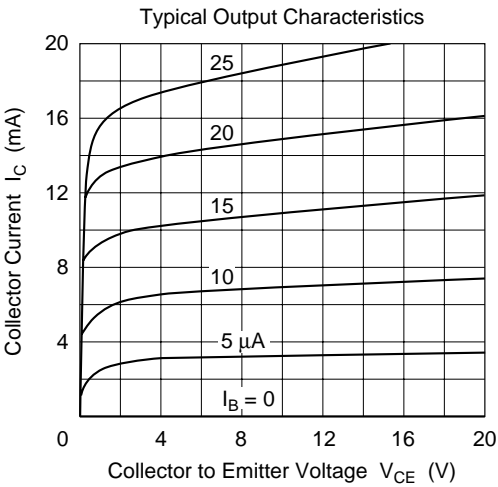
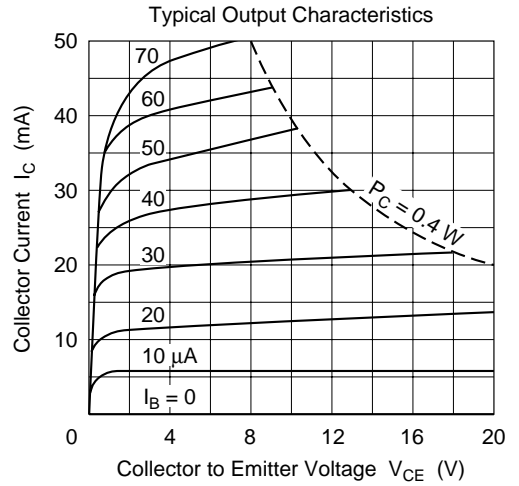
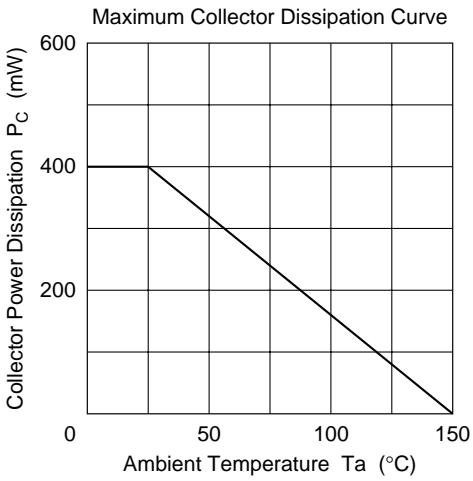
Item	Symbol	2SC2545	2SC2546	2SC2547	Unit
Collector to base voltage	V _{CBO}	60	90	120	V
Collector to emitter voltage	V _{CEO}	60	90	120	V
Emitter to base voltage	V _{EBO}	5	5	5	V
Collector current	I _C	100	100	100	mA
Emitter current	I _E	-100	-100	-100	mA
Collector power dissipation	P _C	400	400	400	mW
Junction temperature	T _j	150	150	150	°C
Storage temperature	T _{stg}	-55 to +150	-55 to +150	-55 to +150	°C

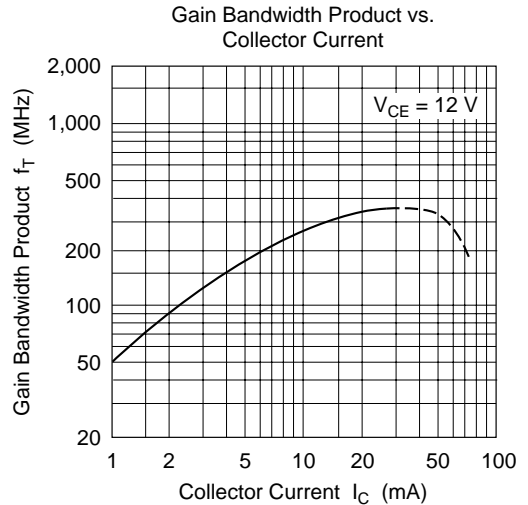
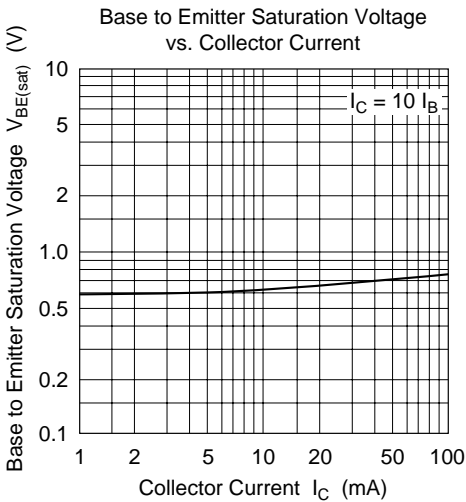
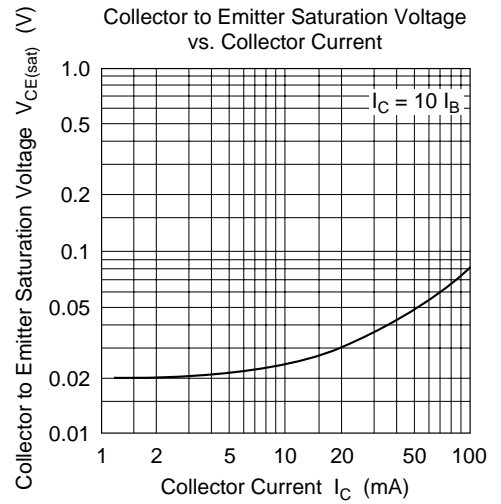
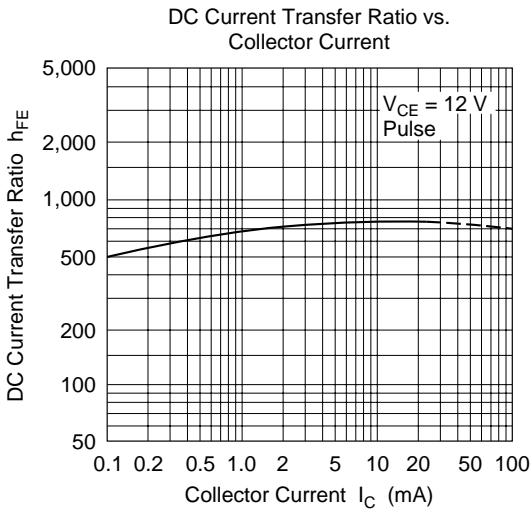
Electrical Characteristics (Ta = 25°C)

Item	Symbol	2SC2545			2SC2546			2SC2547			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	60	—	—	90	—	—	120	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	90	—	—	120	—	—	V	$I_C = 1 \text{ mA}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.1	—	—	0.1	—	—	0.1	μA	$V_{CB} = 50 \text{ V}, I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	0.1	—	—	0.1	—	—	0.1	μA	$V_{EB} = 2 \text{ V}, I_C = 0$
DC current transfer ratio	h_{FE}^{*1}	250	—	1200	250	—	1200	250	—	800		$V_{CE} = 12 \text{ V}, I_C = 2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.2	—	—	0.2	—	—	0.2	V	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$
Base to emitter voltage	V_{BE}	—	0.6	—	—	0.6	—	—	0.6	—	V	$V_{CE} = 12 \text{ V}, I_C = 2 \text{ mA}$
Gain bandwidth product	f_T	—	90	—	—	90	—	—	90	—	MHz	$V_{CE} = 12 \text{ V}, I_C = 2 \text{ mA}$
Collector output capacitance	C_{ob}	—	3.0	—	—	3.0	—	—	3.0	—	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Noise voltage referred input	e_n	—	0.5	—	—	0.5	—	—	0.5	—	nV/ $\sqrt{\text{Hz}}$	$V_{CE} = 6 \text{ V}, I_C = 10 \text{ mA}, f = 1 \text{ kHz}, R_g = 0, \Delta f = 1 \text{ Hz}$

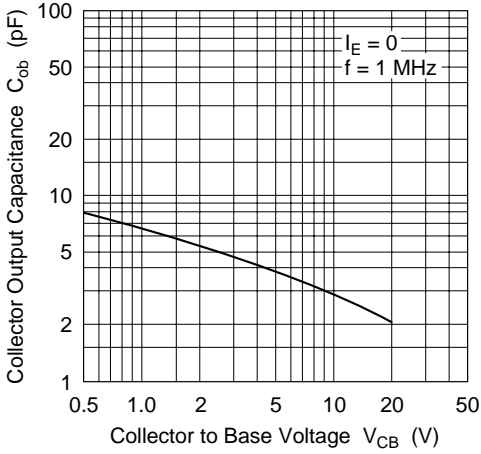
Note: 1. The 2SC2545, 2SC2546 and 2SC2547 are grouped by h_{FE} as follows.

	D	E	F
2SC2545, 2SC2546	250 to 500	400 to 800	600 to 1200
2SC2547	250 to 500	400 to 800	—

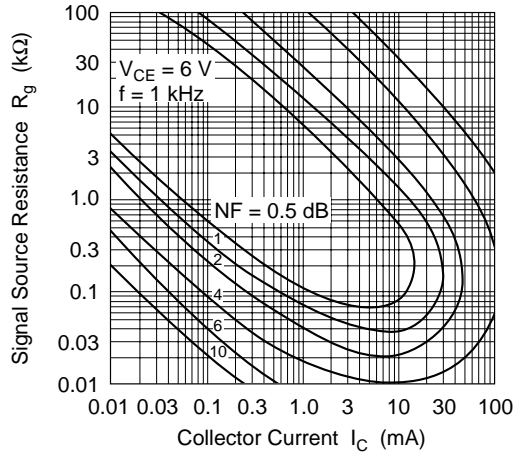




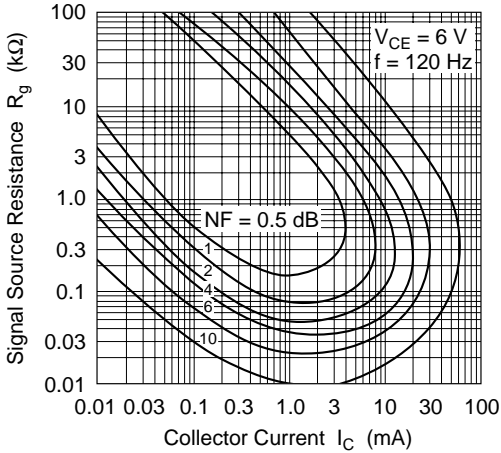
Collector Output Capacitance vs. Collector to Base Voltage



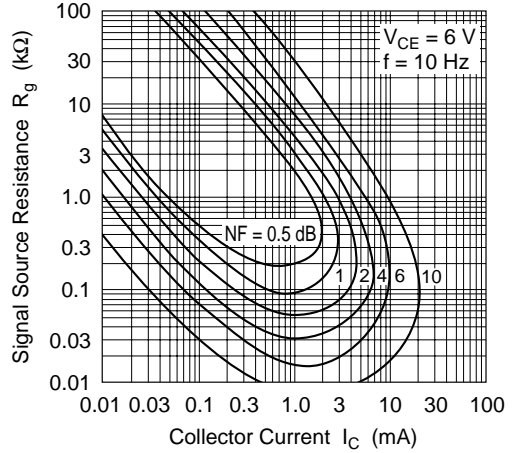
Contours of Constant Noise Figure



Contours of Constant Noise Figure



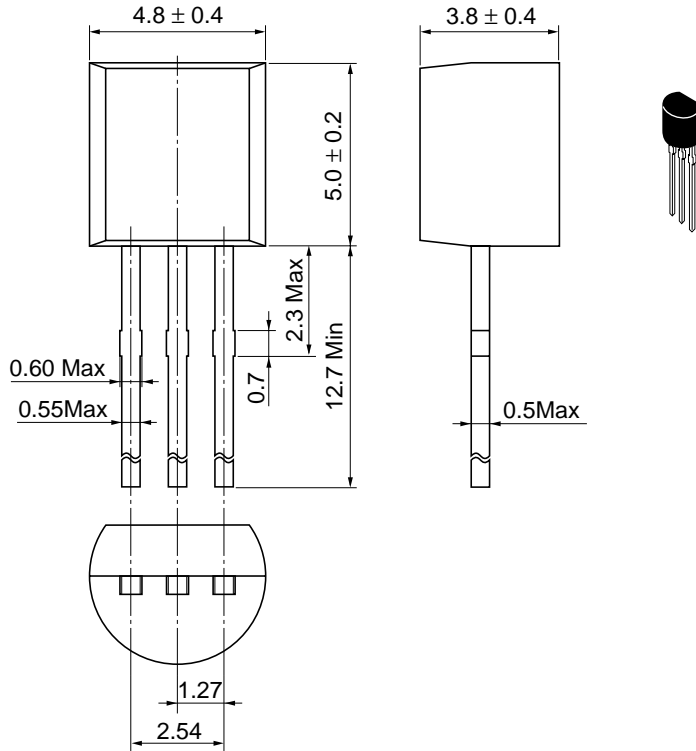
Contours of Constant Noise Figure



Package Dimensions

As of January, 2001

Unit: mm



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

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