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# 2SC2545, 2SC2546, 2SC2547

Silicon NPN Epitaxial

# HITACHI

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## Application

- Low frequency low noise amplifier
- Complementary pair with 2SA1083, 2SA1084 and 2SA1085

## Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

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**2SC2545, 2SC2546, 2SC2547**

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**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

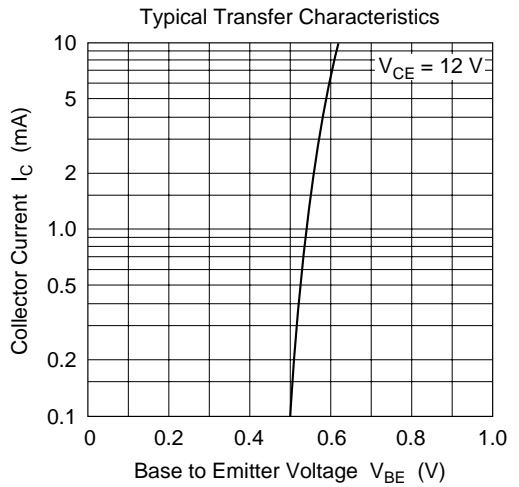
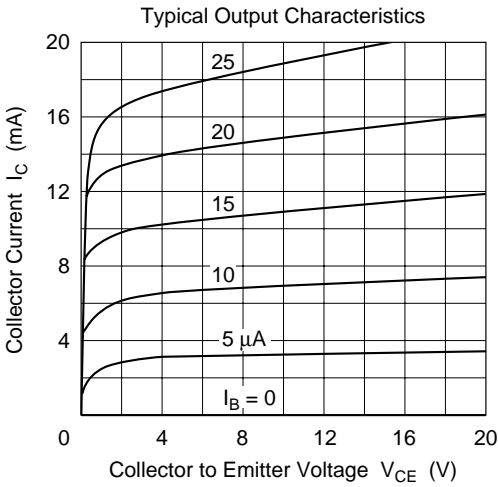
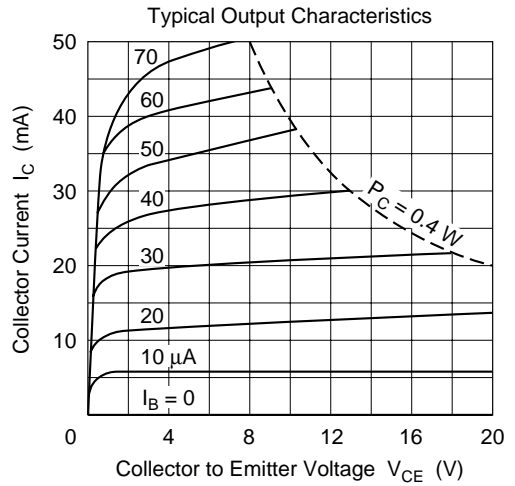
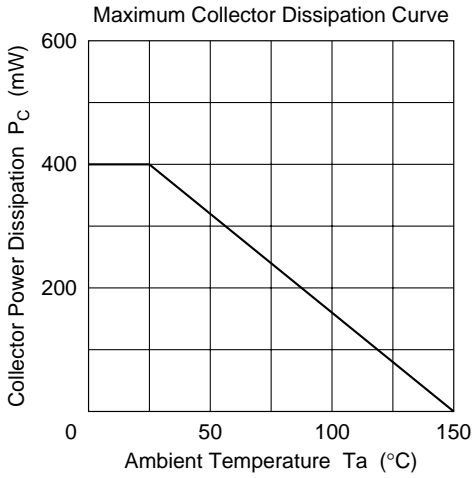
<b>Item</b>	<b>Symbol</b>	<b>2SC2545</b>	<b>2SC2546</b>	<b>2SC2547</b>	<b>Unit</b>
Collector to base voltage	$V_{\text{CBO}}$	60	90	120	V
Collector to emitter voltage	$V_{\text{CEO}}$	60	90	120	V
Emitter to base voltage	$V_{\text{EBO}}$	5	5	5	V
Collector current	$I_{\text{C}}$	100	100	100	mA
Emitter current	$I_{\text{E}}$	-100	-100	-100	mA
Collector power dissipation	$P_{\text{C}}$	400	400	400	mW
Junction temperature	$T_{\text{j}}$	150	150	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	-55 to +150	-55 to +150	$^\circ\text{C}$

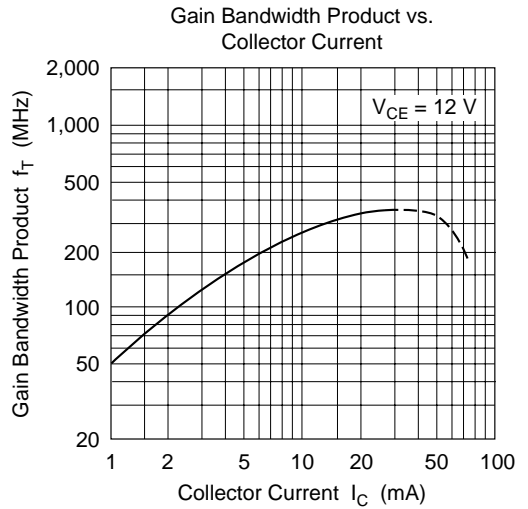
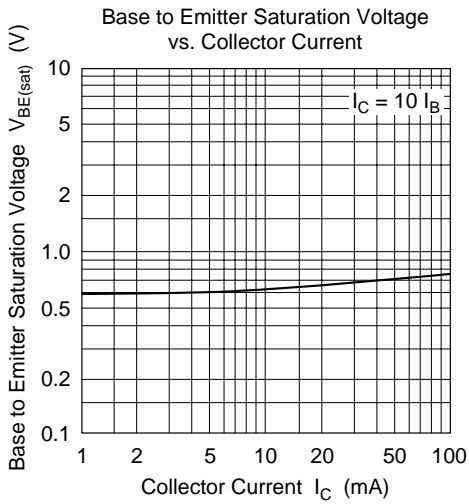
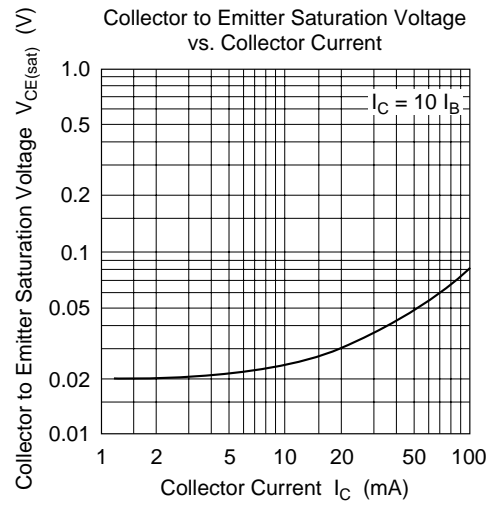
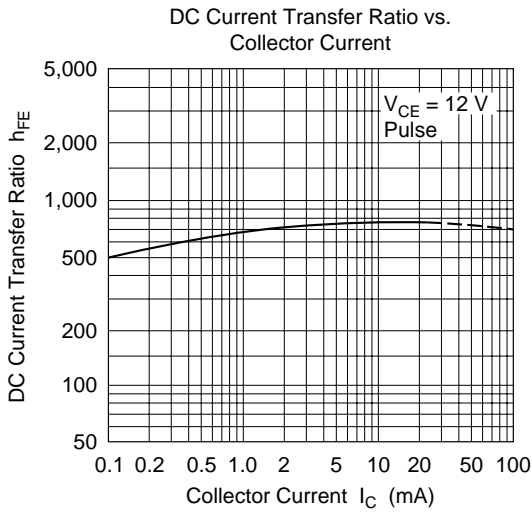
**Electrical Characteristics (Ta = 25°C)**

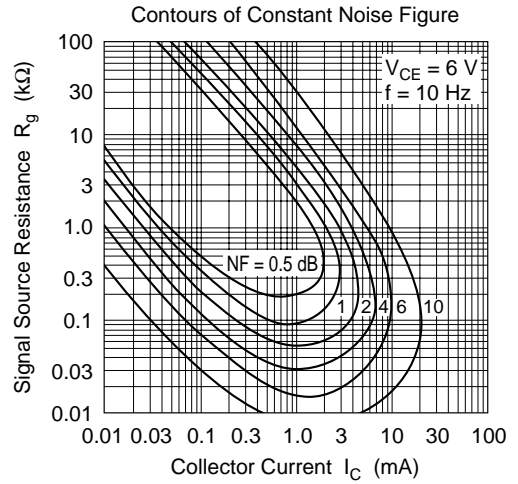
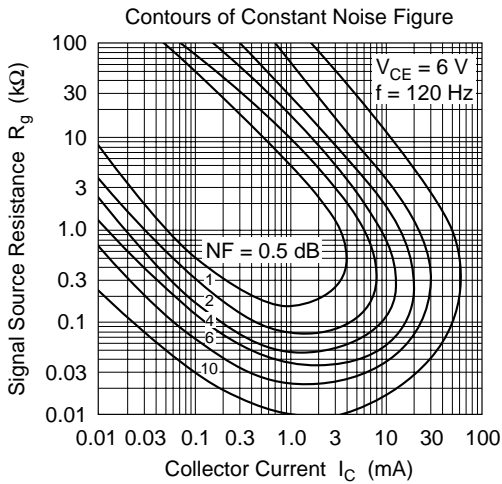
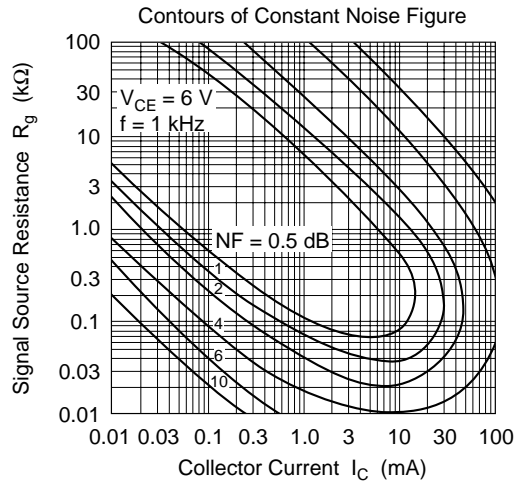
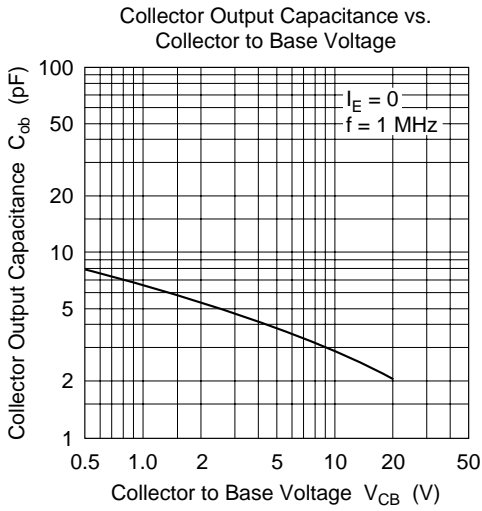
Item	Symbol	2SC2545			2SC2546			2SC2547			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	60	—	—	90	—	—	120	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	90	—	—	120	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
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	$\mu A$	$V_{CB} = 50 \text{ V}, I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	0.1	—	—	0.1	—	—	0.1	$\mu A$	$V_{EB} = 2 \text{ V}, I_C = 0$
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/ $\sqrt{\text{Hz}}$	$V_{CE} = 6 \text{ V}, I_C = 10 \text{ mA}, f = 1 \text{ kHz}, R_g = 0, \Delta f = 1 \text{ Hz}$

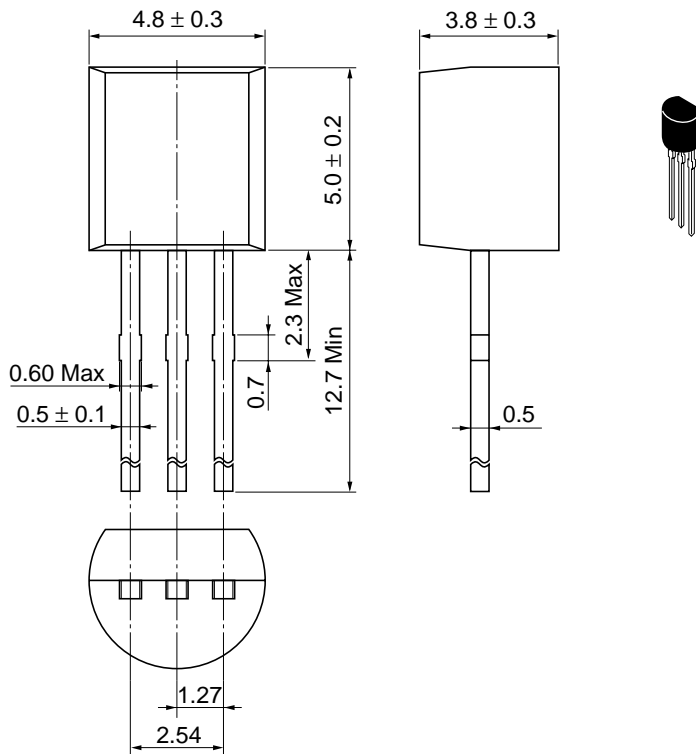
Note: 1. The 2SC2545, 2SC2546 and 2SC2547 are grouped by  $h_{FE}$  as follows.

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









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

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