Unit: mm

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

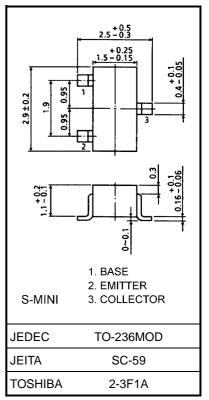
# 2SC3324

Audio Frequency Low Noise Amplifier Applications

- High voltage: V<sub>CEO</sub> = 120 V
- Excellent hFE linearity: hFE (IC = 0.1 mA)/ hFE (IC = 2 mA) = 0.95 (typ.)
- High hFE: hFE = 200~700
- Low noise: NF (2) = 0.2dB (typ.), 3dB (max)
- Complementary to 2SA1312
- Small package

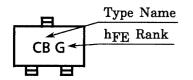
#### Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	120	V
Collector-emitter voltage	V <sub>CEO</sub>	120	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	Ι <sub>C</sub>	100	mA
Base current	Ι <sub>Β</sub>	20	mA
Collector power dissipation	P <sub>C</sub>	150	mW
Junction temperature	Tj	125	°C
Storage temperature range	T <sub>stg</sub>	-55~125	°C



Weight: 0.012 g (typ.)

#### Marking



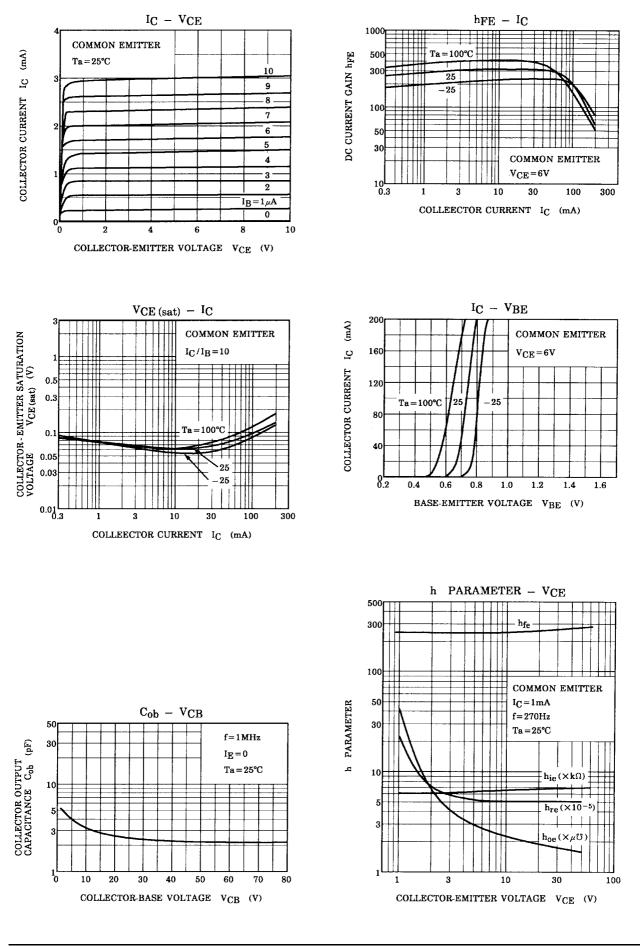
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	$V_{CB} = 120 \text{ V}, \text{ I}_{E} = 0$			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	$V_{EB} = 5 V, I_{C} = 0$			0.1	μA
DC current gain	h <sub>FE</sub> (Note)	$V_{CE} = 6 \text{ V}, \text{ I}_{C} = 2 \text{ mA}$	200	_	700	
Collector-emitter saturation voltage	V <sub>CE (sat)</sub>	$I_{C} = 10 \text{ mA}, I_{B} = 1 \text{ mA}$		_	0.3	V
Transition frequency	f <sub>T</sub>	$V_{CE} = 6 V, I_{C} = 1 mA$	_	100	_	MHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = 10 \text{ V}, \text{ I}_{E} = 0, \text{ f} = 1 \text{ MHz}$		4		pF
Noise figure	NF (1)	$V_{CB}$ = 6 V, I_C = 0.1 mA, f = 100 Hz, Rg = 10 k\Omega	_	0.5	6	dB
	NF (2)	$V_{CB}$ = 6 V, I <sub>C</sub> = 0.1 mA, f = 1 kHz, Rg = 10 k\Omega		0.2	3	

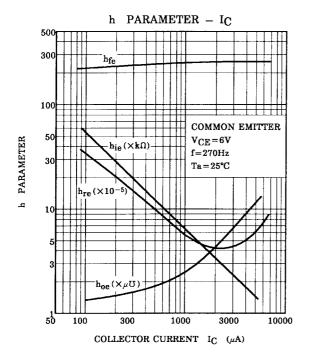
Note: hFE classification GR (G): 200~400, BL (L): 350~700

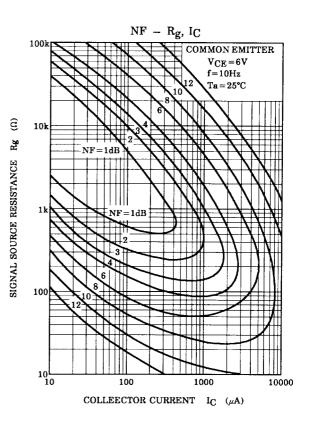
() marking symbol

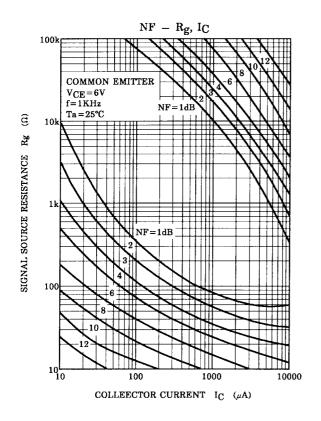
### TOSHIBA

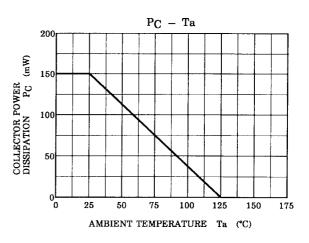


## TOSHIBA









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Handbook" etc.,

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