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Silicon NPN Epitaxial

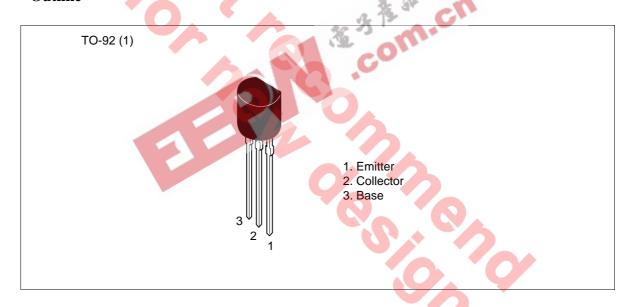


ADE-208-1053 (Z) 1st. Edition Mar. 2001

Application

Low frequency low noise amplifier

Outline



Absolute Maximum Ratings ($Ta = 25^{\circ}C$)

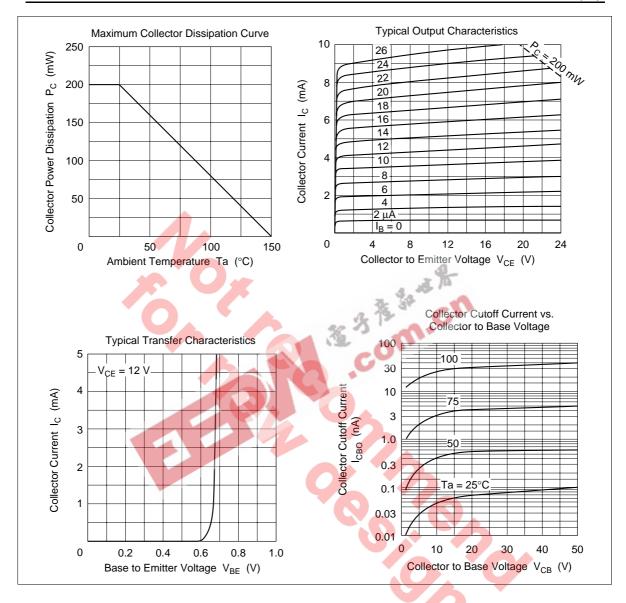
Item	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	55	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V _{EBO}	5	V
Collector current	I _c	100	mA
Collector power dissipation	P _c	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

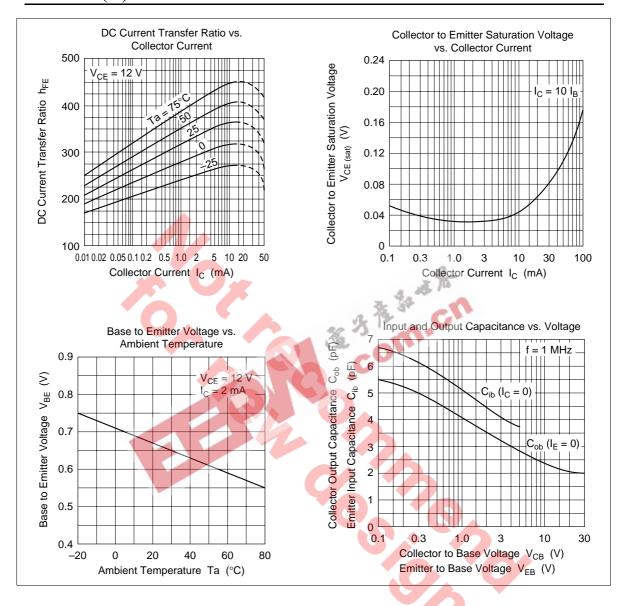
Electrical Characteristics (Ta = 25°C)

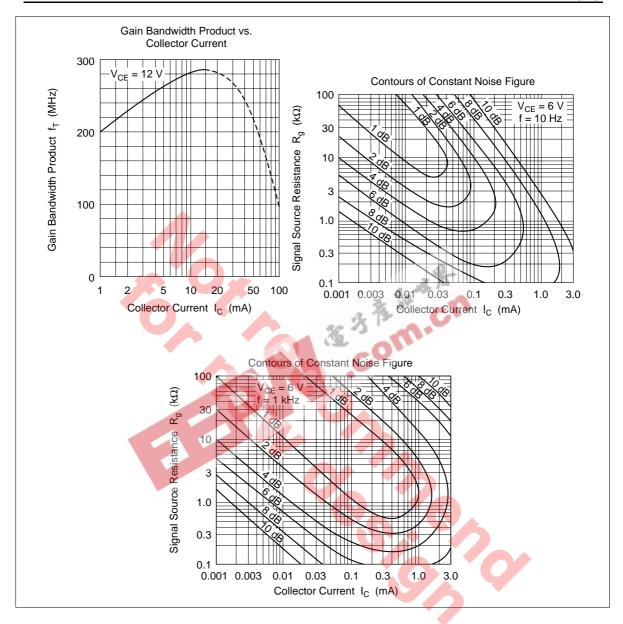
Electrical Characteristics (Ta = 25°C)				A A Th		3 ju
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Collector to base breakdown voltage	V _{(BR)CBO}	55	- 3	25	V	$I_{c} = 10 \ \mu A, \ I_{E} = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	50	a	·C.	V	$I_{c} = 1 \text{ mA}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	-		V	$I_{E} = 10 \ \mu A, \ I_{C} = 0$
Collector cutoff current	СВО	-1		0.5	μA	V _{CB} = 18 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	+0	1200		$V_{CE} = 12 \text{ V}, I_{C} = 2 \text{ mA}$
Base to emitter voltage	V_{BE}	_	- /	0.75	٧	$V_{CE} = 12 \text{ V}, I_{C} = 2 \text{ mA}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	_	_	0.5	V	$I_{\rm C}$ = 10 mA, $I_{\rm B}$ = 1 mA
Collector output capacitance	Cob	_	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 kHz, R _g = 10 kΩ

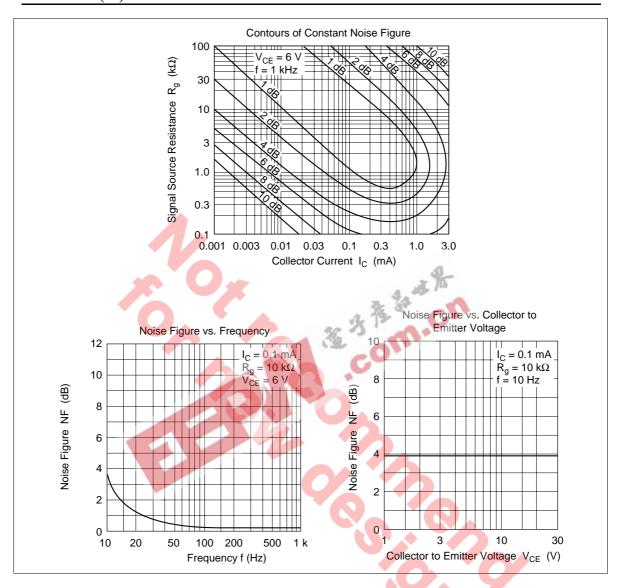
Note: 1. The 2SC1345(K) is grouped by h_{FE} as follows.

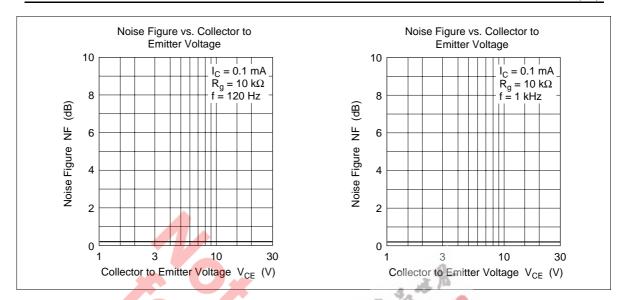
D	E	F
250 to 500	400 to 800	600 to 1200



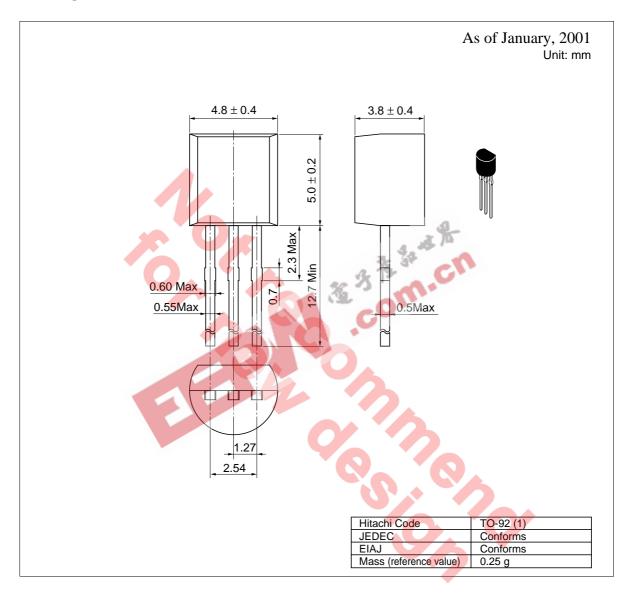








Package Dimensions



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