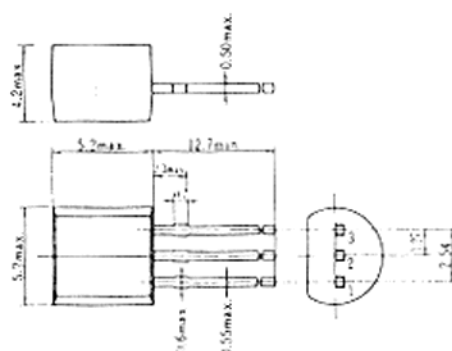


2SC1344, 2SC1345

SILICON NPN EPITAXIAL

LOW FREQUENCY LOW NOISE AMPLIFIER



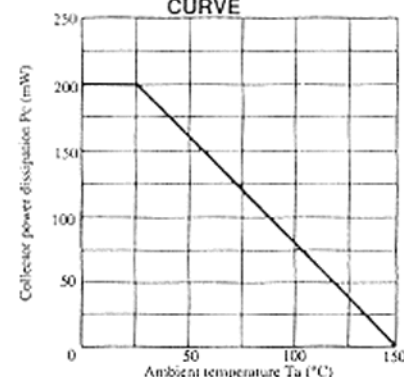
1. Emitter
 2. Collector
 3. Base
- (Dimensions in mm)

(JEDEC TO-92)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SC1344	2SC1345	Unit
Collector to base voltage	V _{CB0}	30	55	V
Collector to emitter voltage	V _{CE0}	30	50	V
Emitter to base voltage	V _{EB0}	5	5	V
Collector current	I _C	100	100	mA
Collector power dissipation	P _C	200	200	mW
Junction temperature	T _j	150	150	°C
Storage temperature	T _{stg}	-55 to +150	-55 to +150	°C

MAXIMUM COLLECTOR DISSIPATION CURVE



■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	2SC1344			2SC1345			Unit
			min.	typ.	max.	min.	typ.	max.	
Collector to base breakdown voltage	V _{(BR)CBO}	I _C = 10μA, I _E = 0	30	—	—	55	—	—	V
Collector to emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA, R _{BE} = ∞	30	—	—	50	—	—	V
Emitter to base breakdown voltage	V _{(BR)EBO}	I _E = 10μA, I _C = 0	5	—	—	5	—	—	V
Collector cutoff current	I _{CBO}	V _{CB} = 18V, I _E = 0	—	—	0.5	—	—	0.5	μA
Emitter cutoff current	I _{EBO}	V _{CB} = 2V, I _C = 0	—	—	0.5	—	—	0.5	μA
DC current transfer ratio	h _{FE} *	V _{CE} = 12V, I _C = 2mA	250	—	1200	250	—	1200	
Base to emitter voltage	V _{BE}	V _{CE} = 12V, I _C = 2mA	—	—	0.75	—	—	0.75	V
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = 10mA, I _B = 1mA	—	—	0.5	—	—	0.5	V
Gain bandwidth product	f _r	V _{CE} = 12V, I _C = 2mA	—	230	—	—	230	—	MHz
Collector output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	—	3.5	—	—	3.5	pF
Noise figure	NF	V _{CE} = 6V, I _C = 0.1mA f = 10Hz, R _g = 10kΩ	—	—	8	—	—	8	dB
		V _{CE} = 6V, I _C = 0.1mA f = 1kHz, R _g = 10kΩ	—	—	1	—	—	1	dB

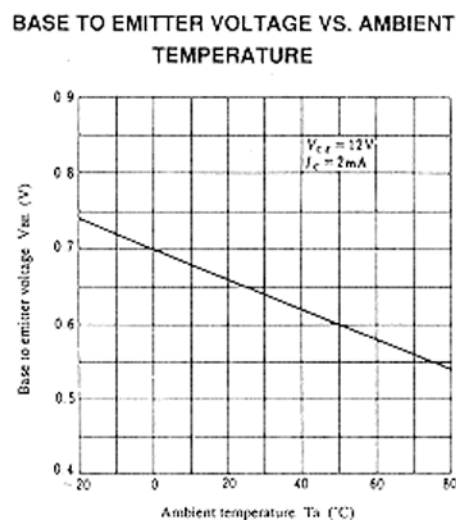
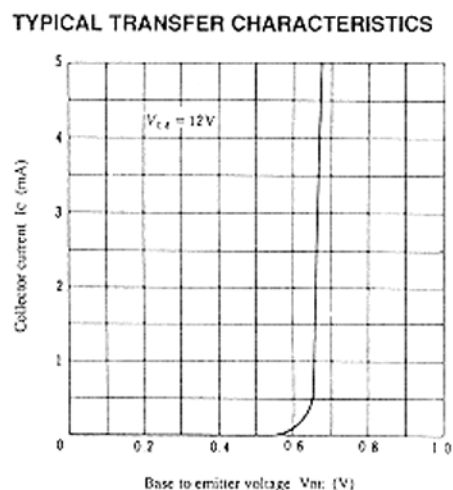
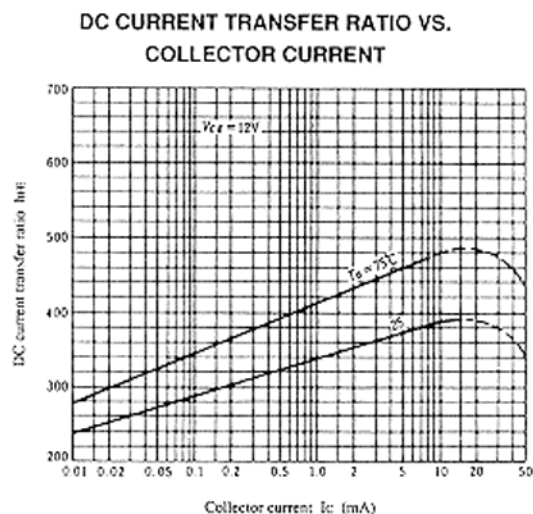
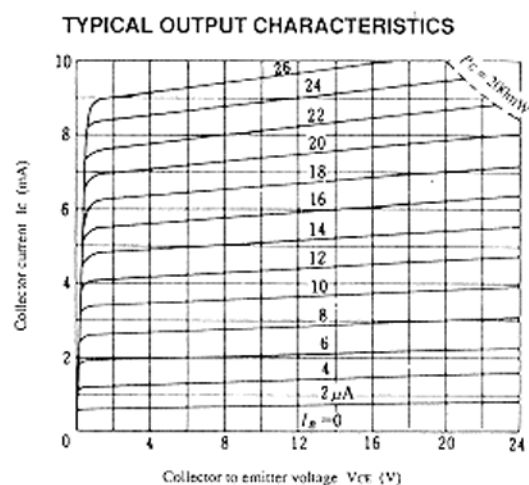
* The 2SC1344 and 2SC1345 are grouped by h_{FE} as follows.

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

2SC1344, 2SC1345

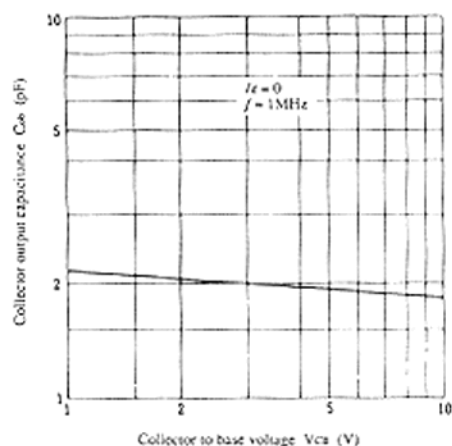
■ SMALL SIGNAL h PARAMETERS ($V_{CE}=5V$, $I_C=0.1mA$, $f=270Hz$, $T_a=25^\circ C$, Emitter common)

Item	Symbol	D	E	F	Unit
Input impedance	h_{ie}	110	170	240	$k\Omega$
Voltage feedback ratio	h_{re}	9.5	14.5	16	$\times 10^{-4}$
Current transfer ratio	h_{fe}	340	540	825	
Output admittance	h_{oe}	12.0	12.5	13.5	μS

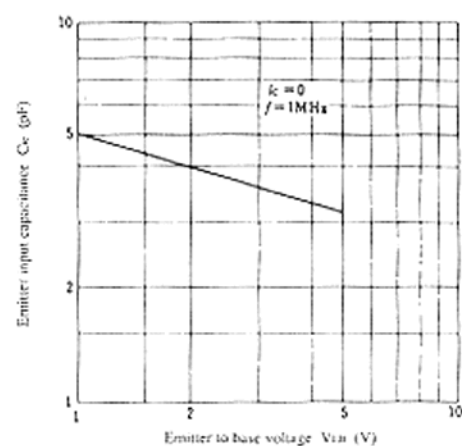


2SC1344, 2SC1345

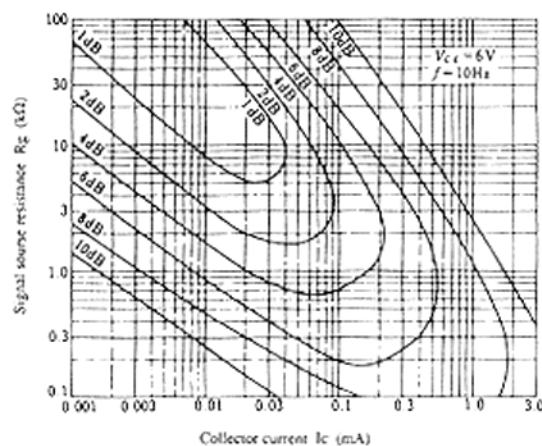
COLLECTOR OUTPUT CAPACITANCE VS.
COLLECTOR TO BASE VOLTAGE



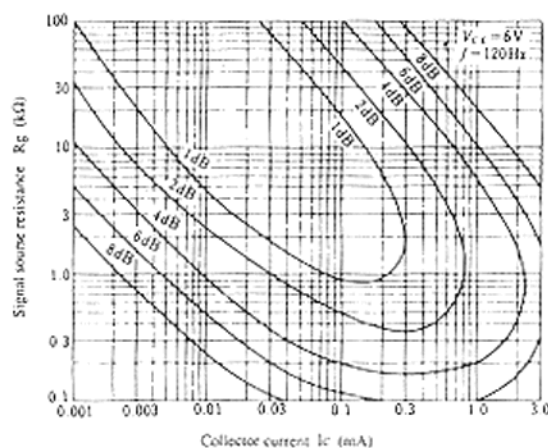
EMITTER INPUT CAPACITANCE VS. EMITTER
TO BASE VOLTAGE



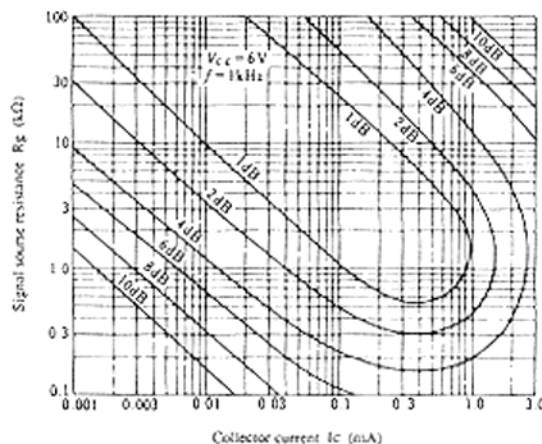
CONTOURS OF CONSTANT NOISE FIGURE



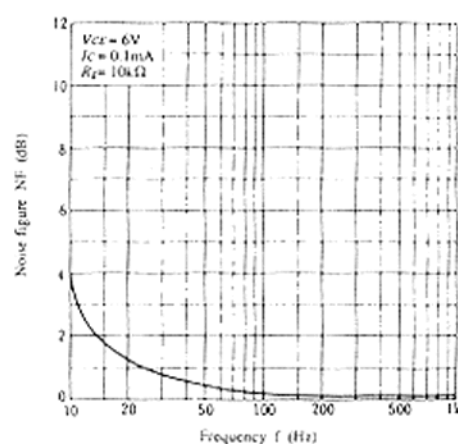
CONTOURS OF CONSTANT NOISE FIGURE



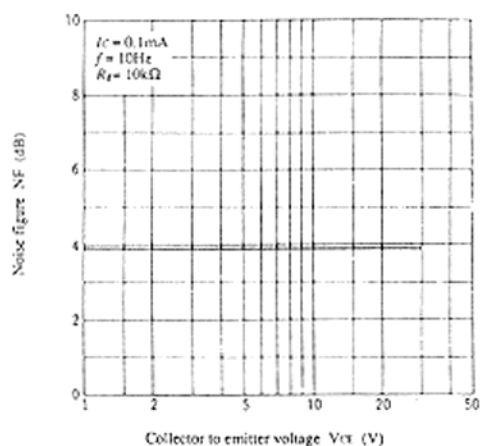
CONTOURS OF CONSTANT NOISE FIGURE



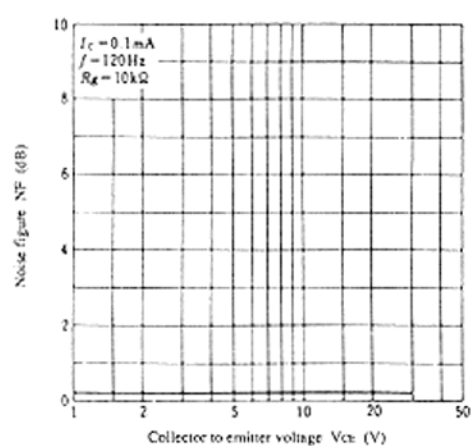
NOISE FIGURE VS. FREQUENCY



NOISE FIGURE VS. COLLECTOR TO
EMITTER VOLTAGE



NOISE FIGURE VS. COLLECTOR TO
EMITTER VOLTAGE



NOISE FIGURE VS. COLLECTOR TO
EMITTER VOLTAGE

