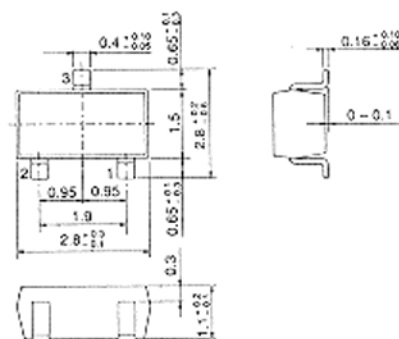


2SC2733

SILICON NPN EPITAXIAL
VHF FREQUENCY CONVERTER



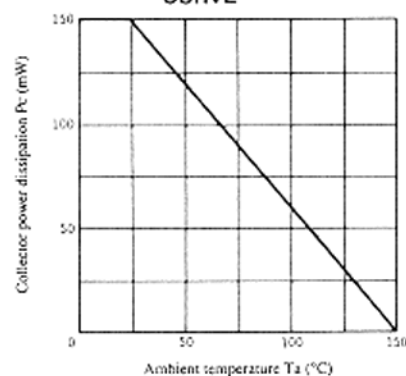
1. Emitter
2. Base
3. Collector
(Dimensions in mm)

(MPAK)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SC2733	Unit
Collector to base voltage	V _{CB0}	30	V
Collector to emitter voltage	V _{CE0}	20	V
Emitter to base voltage	V _{EB0}	3	V
Collector current	I _C	50	mA
Collector power dissipation	P _C	150	mW
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

MAXIMUM COLLECTOR DISSIPATION CURVE

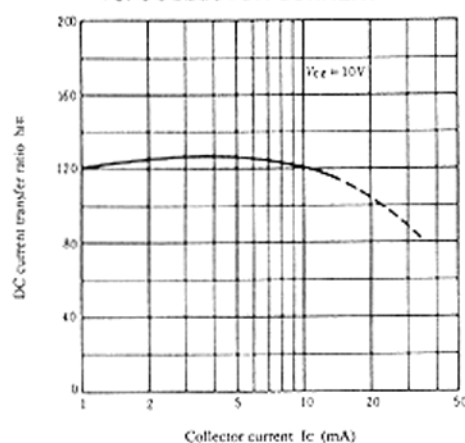


■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

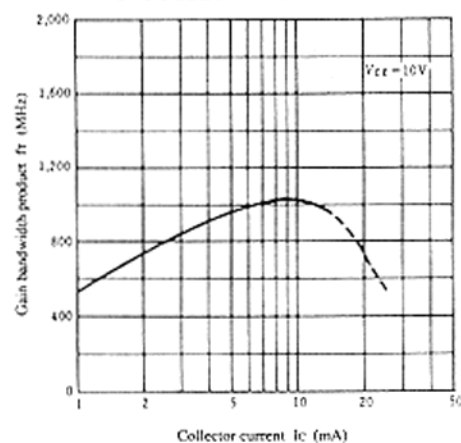
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	V _{(BR)CBO}	I _C = 10μA, I _E = 0	30	—	—	V
Collector to emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA, R _{FE} = ∞	20	—	—	V
Emitter to base breakdown voltage	V _{(BR)EBO}	I _E = 10μA, I _C = 0	3	—	—	V
Collector cutoff current	I _{CBO}	V _{CB} = 10V, I _E = 0	—	—	0.5	μA
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = 20mA, I _B = 4mA	—	—	1.0	V
DC current transfer ratio	h _{FE}	V _{CE} = 10V, I _C = 10mA	60	120	—	
Gain bandwidth product	f _T	V _{CE} = 10V, I _C = 10mA	600	1000	—	MHz
Reverse transfer capacitance	C _{ob}	V _{CB} = 10V, Emitter ground, f = 1MHz	—	0.35	0.65	pF
Conversion gain	CG	V _{CC} = 12V, I _C = 2mA, f = 200MHz	—	21	—	dB
Noise figure	NF	f _{osc} = 230MHz (0dBm), f _{out} = 30MHz	—	4.0	—	dB

• Marking is "HC".

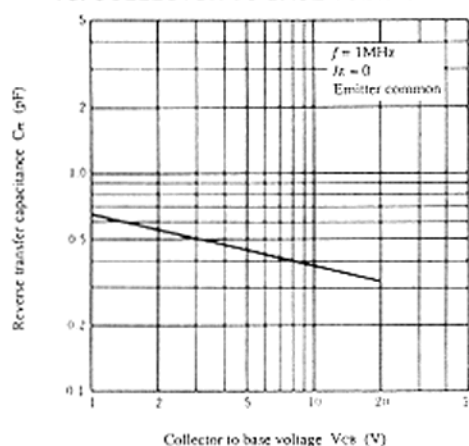
DC CURRENT TRANSFER RATIO
VS. COLLECTOR CURRENT



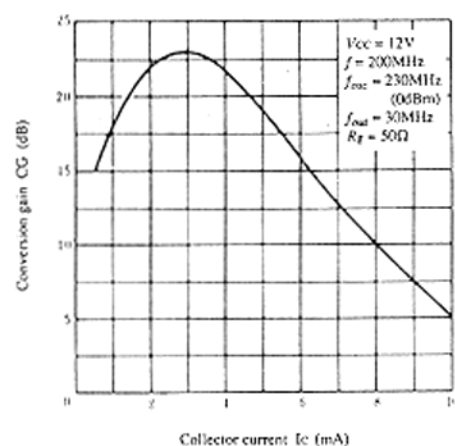
GAIN BANDWIDTH PRODUCT
VS. COLLECTOR CURRENT



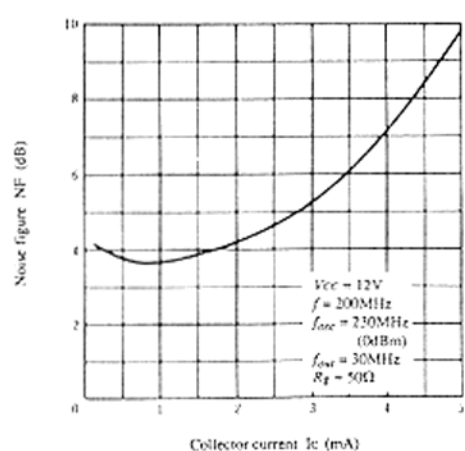
REVERSE TRANSFER CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE



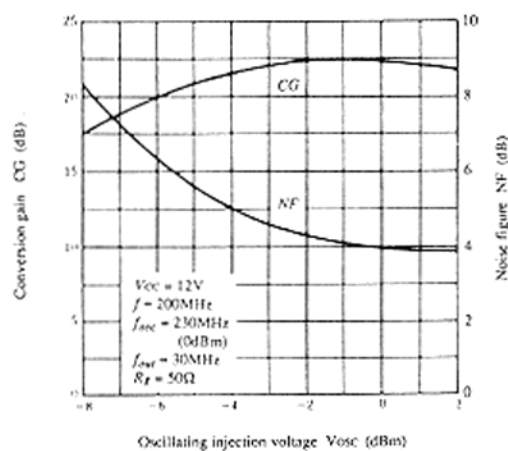
CONVERSION GAIN VS. COLLECTOR CURRENT



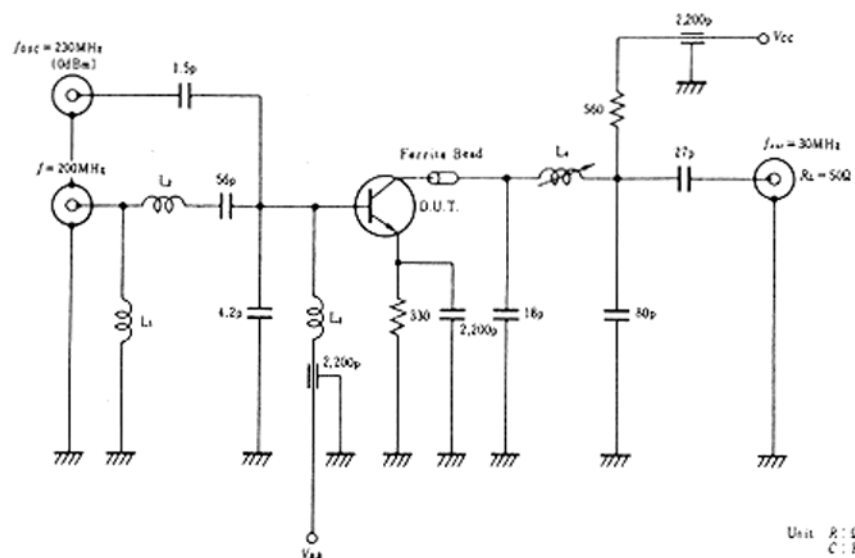
NOISE FIGURE VS. COLLECTOR CURRENT



CONVERSION GAIN, NOISE FIGURE
VS. OSCILLATING INJECTION VOLTAGE



CONVERSION GAIN, NOISE FIGURE TEST CIRCUIT



L1: $\phi 0.5\text{mm}$ Enameled Copper wire 4 Turns inside dia $\phi 5\text{mm}$

L2: $\phi 0.5\text{mm}$ Enameled Copper wire 4 Turns inside dia $\phi 4\text{mm}$

L3: $\phi 0.2\text{mm}$ Enameled Copper wire 6 Turns inside dia $\phi 3\text{mm}$

L4: Outside dia $\phi 5\text{mm}$ Bobbin, $\phi 0.2\text{mm}$ Enameled Copper wire 16 Turns, using Ferrite bead.