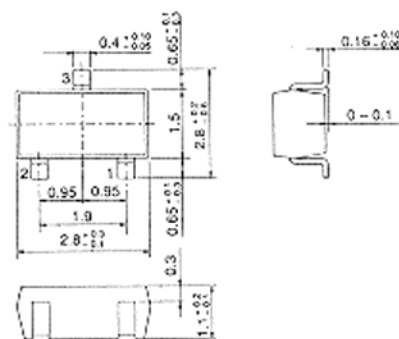


2SC2733

SILICON NPN EPITAXIAL
VHF FREQUENCY CONVERTER

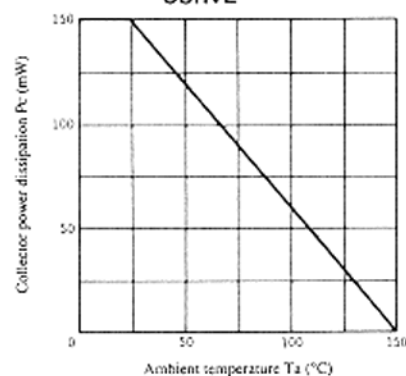


(MPAK)

■ 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

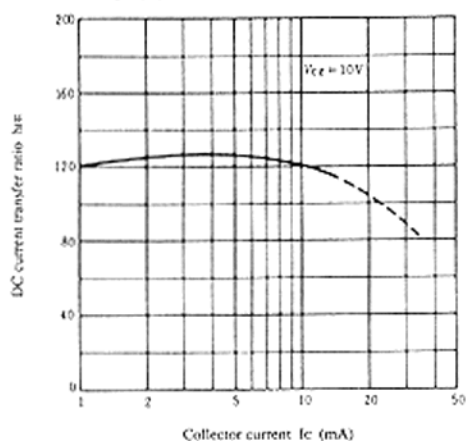


■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

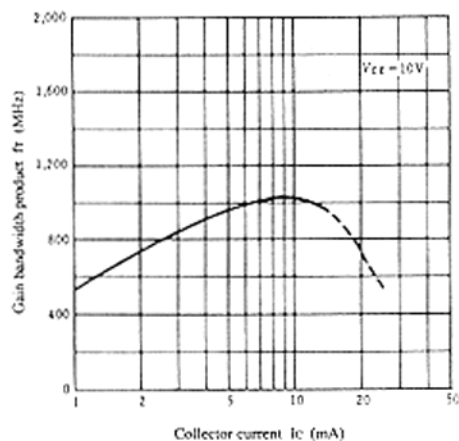
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	V _{(BR)CB0}	I _c = 10μA, I _E = 0	30	—	—	V
Collector to emitter breakdown voltage	V _{(BR)CE0}	I _c = 1mA, R _{BE} = ∞	20	—	—	V
Emitter to base breakdown voltage	V _{(BR)EB0}	I _E = 10μA, I _c = 0	3	—	—	V
Collector cutoff current	I _{CB0}	V _{CB} = 10V, I _c = 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 _r	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".

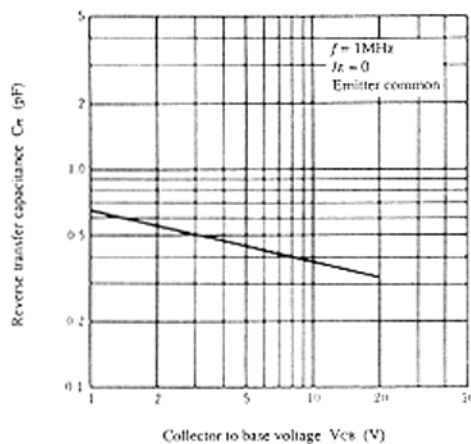
**DC CURRENT TRANSFER RATIO
VS. COLLECTOR CURRENT**



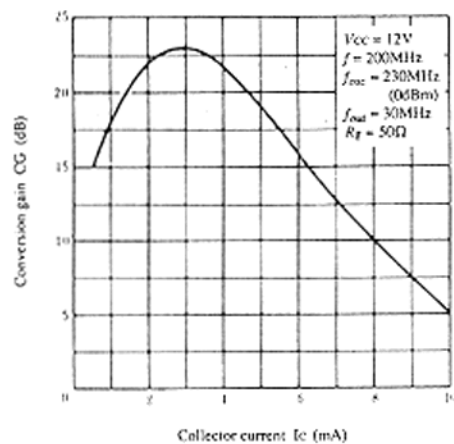
**GAIN BANDWIDTH PRODUCT
VS. COLLECTOR CURRENT**



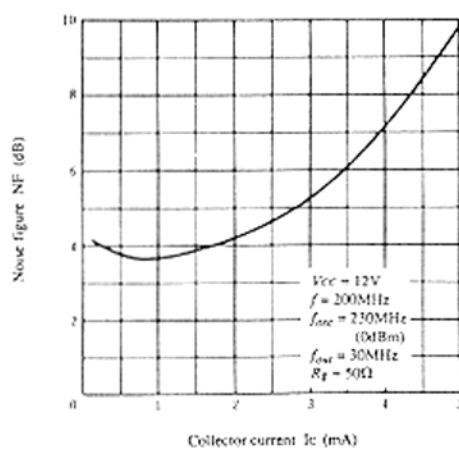
**REVERSE TRANSFER CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE**



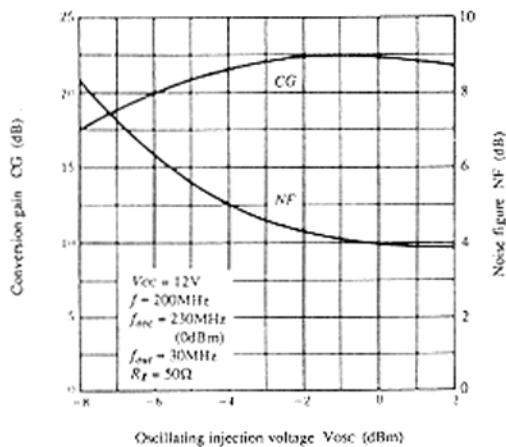
CONVERSION GAIN VS. COLLECTOR CURRENT



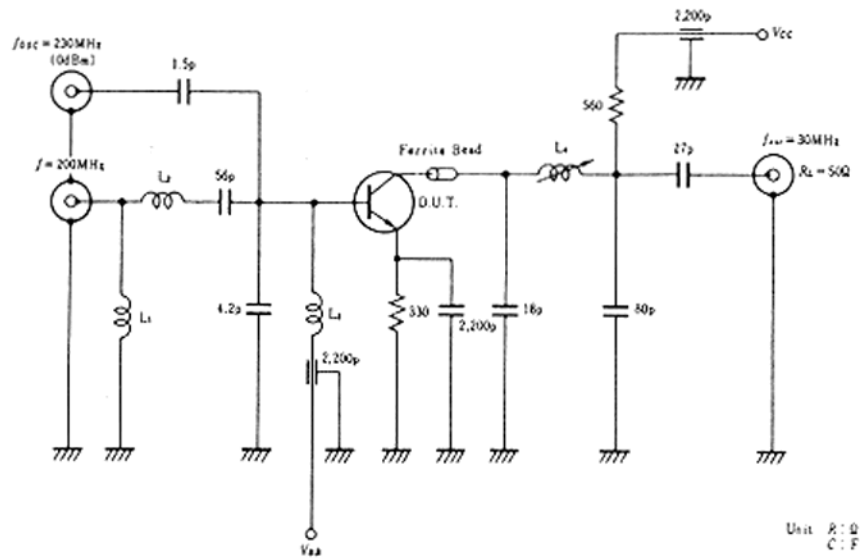
NOISE FIGURE VS. COLLECTOR CURRENT



**CONVERSION GAIN, NOISE FIGURE
VS. OSCILLATING INJECTION VOLTAGE**



CONVERSION GAIN, NOISE FIGURE TEST CIRCUIT



L1: ϕ 0.5mm Enameled Copper wire 4 Turns inside dia ϕ 5mm

L2: ϕ 0.5mm Enameled Copper wire 4 Turns inside dia ϕ 4mm

L3: ϕ 0.2mm Enameled Copper wire 6 Turns inside dia ϕ 3mm

L4: Outside dia ϕ 5mm Bobbin, ϕ 0.2mm Enameled Copper wire 16 Turns, using Ferrite bead.