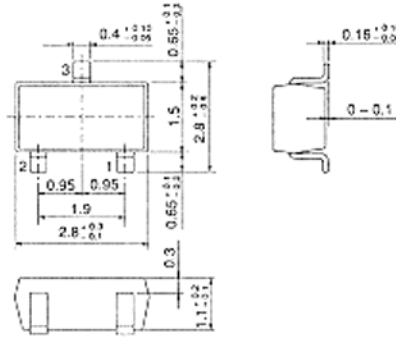


## 2SC2732

SILICON NPN EPITAXIAL  
UHF FREQUENCY CONVERTER



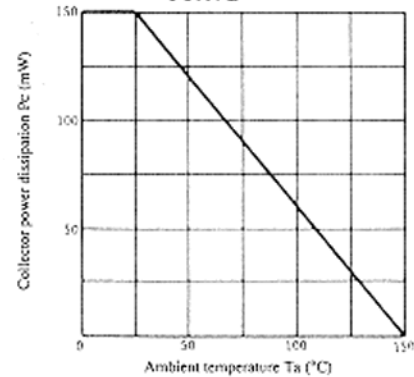
1. Emitter
  2. Base
  3. Collector
- (Dimensions in mm)

(MPAK)

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SC2732	Unit
Collector to base voltage	V <sub>CB0</sub>	30	V
Collector to emitter voltage	V <sub>CE0</sub>	25	V
Emitter to base voltage	V <sub>EB0</sub>	4	V
Collector current	I <sub>c</sub>	20	mA
Collector power dissipation	P <sub>c</sub>	150	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

### MAXIMUM COLLECTOR DISSIPATION CURVE



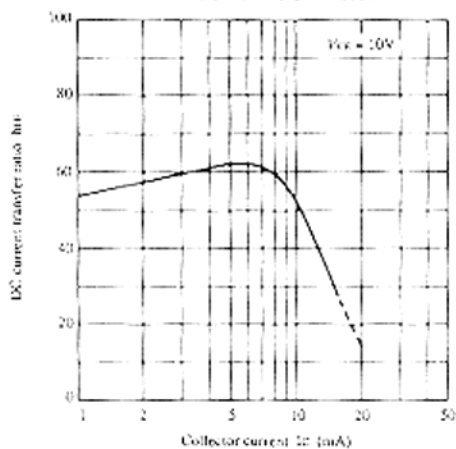
### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>c</sub> = 10μA, I <sub>E</sub> = 0	30	—	—	V
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>c</sub> = 1mA, R <sub>BE</sub> = ∞	25	—	—	V
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>c</sub> = 0	4	—	—	V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0	—	—	0.5	μA
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> = 10mA, I <sub>B</sub> = 1mA	—	—	5	V
DC current transfer ratio	h <sub>FE</sub>	V <sub>CE</sub> = 10V, I <sub>c</sub> = 3mA	30	60	—	
Gain bandwidth product	f <sub>r</sub>	V <sub>CE</sub> = 10V, I <sub>c</sub> = 5mA	700	1000	—	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	—	0.5	0.8	pF
Conversion gain	CG	V <sub>cc</sub> = 12V, I <sub>c</sub> = 1mA, f = 900MHz	—	7.0	—	dB
Noise figure	NF	f <sub>osc</sub> = 930MHz (0dBm), f <sub>out</sub> = 30MHz	—	10.0	—	dB

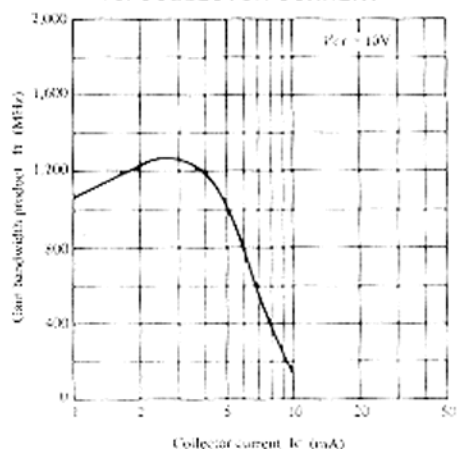
\* Marking is "BC".

## 2SC2732

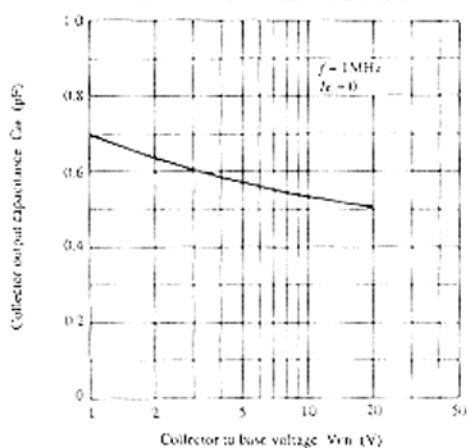
**DC CURRENT TRANSFER RATIO  
VS. COLLECTOR CURRENT**



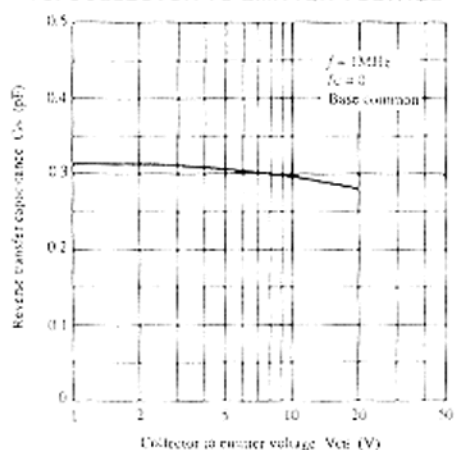
**GAIN BANDWIDTH PRODUCT  
VS. COLLECTOR CURRENT**



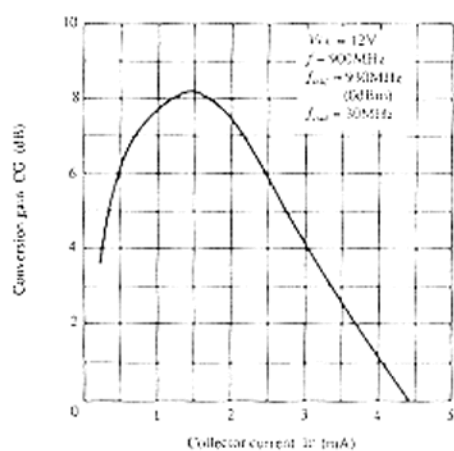
**COLLECTOR OUTPUT CAPACITANCE VS.  
COLLECTOR TO BASE VOLTAGE**



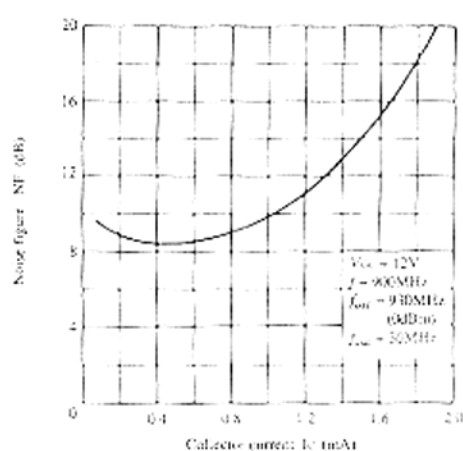
**REVERSE TRANSFER CAPACITANCE  
VS. COLLECTOR TO EMITTER VOLTAGE**



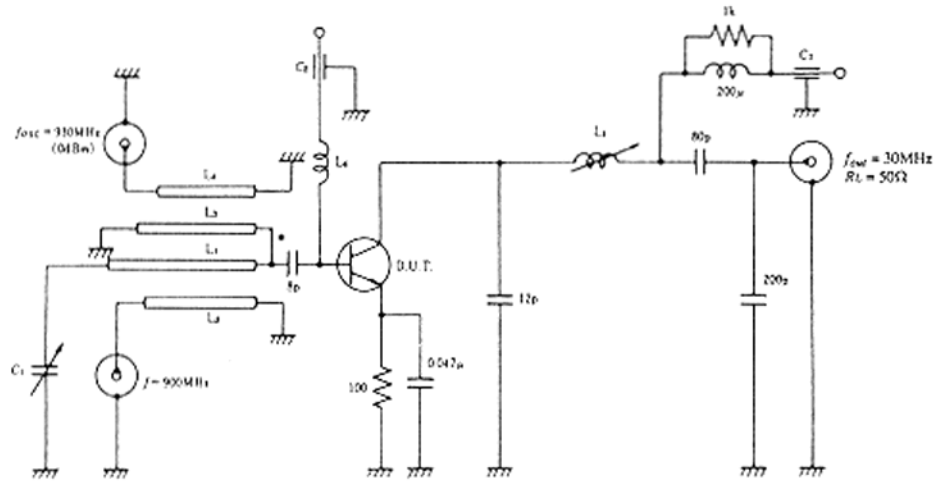
**CONVERSION GAIN VS. COLLECTOR CURRENT**



**NOISE FIGURE VS. COLLECTOR CURRENT**



### CONVERSION GAIN, NOISE FIGURE TEST CURCUIT



• Disk Capacitor  
Unit R Ω  
C: F  
L: H

L1 :  $\phi$ 1mm Enameled Copper wire

L2 :  $\phi$ 1mm Enameled Copper wire

L3 :  $\phi$ 1mm Enameled Copper wire

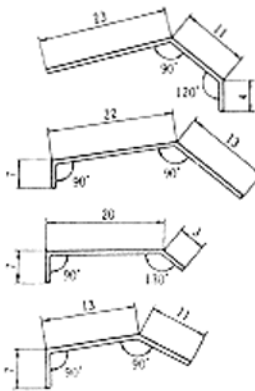
L4 :  $\phi$ 1mm Enameled Copper wire

L5 : Bobbin  $\phi$ 5mm inside dia,  $\phi$ 0.2mm Enameled Copper wire 20 Turns

L6 :  $\phi$ 0.5mm Enameled Copper wire 1 Turns inside dia  $\phi$ 6mm

C1 : 20pF max. Air Trimmer Condenser

C2,C3: 1000pF Air Core Capacitor



Unit : mm