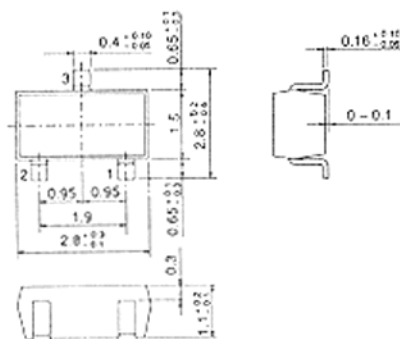


## 2SC3867

SILICON NPN EPITAXIAL

UHF FREQUENCY CONVERTER, WIDE  
BAND AMPLIFIER



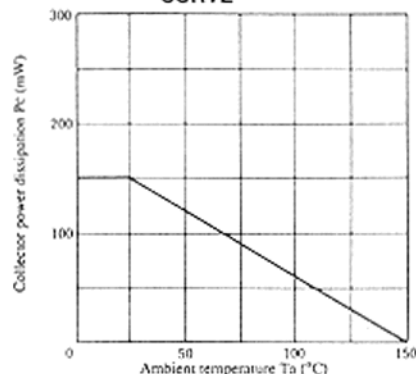
1. Base
  2. Emitter
  3. Collector
- (Dimensions in mm)

(MPAK)

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

Item	Symbol	2SC3867	Unit
Collector to base voltage	V <sub>CB0</sub>	20	V
Collector to emitter voltage	V <sub>CE0</sub>	11	V
Emitter to base voltage	V <sub>EB0</sub>	3	V
Collector current	I <sub>C</sub>	50	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

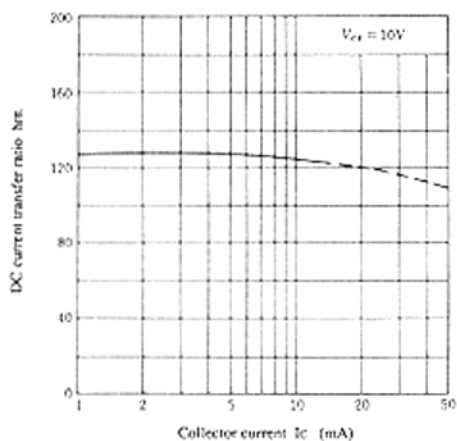


### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

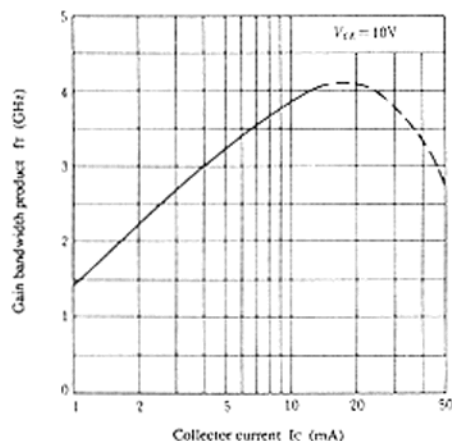
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	20	—	—	V
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	11	—	—	V
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	3	—	—	V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 15V, 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> = 5mA	—	—	0.7	V
DC current transfer ratio	h <sub>FE</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 5mA	45	—	200	
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA	2.5	3.8	—	GHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	—	0.8	1.5	pF
Conversion gain	CG	V <sub>CC</sub> = 10V, I <sub>C</sub> = 1mA, f = 900MHz	10	14	—	dB
Noise figure	NF	f <sub>osc</sub> = 930MHz (-5dBm), f <sub>rec</sub> = 30MHz	—	10	14	dB

\* Marking is [DI-]

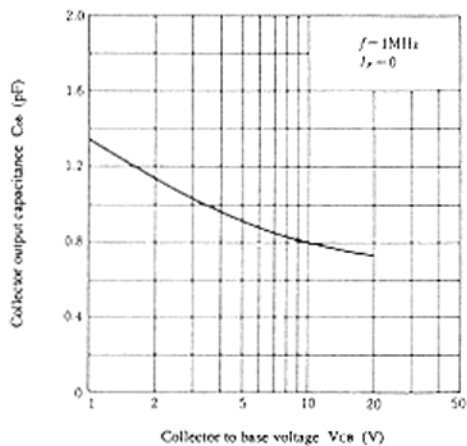
**DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT**



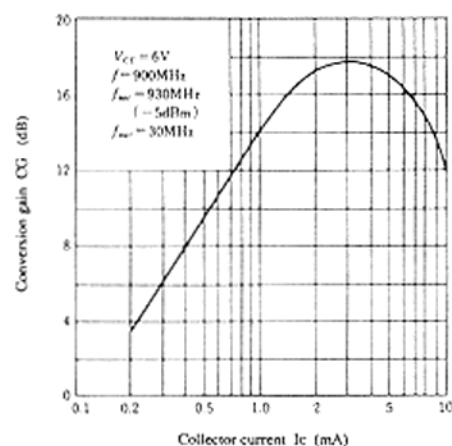
**GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT**



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



**CONVERSION GAIN VS. COLLECTOR CURRENT**



**NOISE FIGURE VS. COLLECTOR CURRENT**

