

## BIPMIC<sup>®</sup> – Cascadable Silicon Bipolar Amplifier

### Applications

General purpose 50 Ω gain block for narrow and broad band IF and RF amplifiers in commercial and industrial applications. The 50 Ω level allows directly to cascade

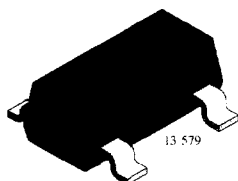
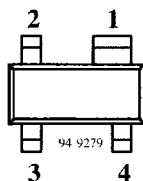
Electrostatic sensitive device.  
Observe precautions for handling.



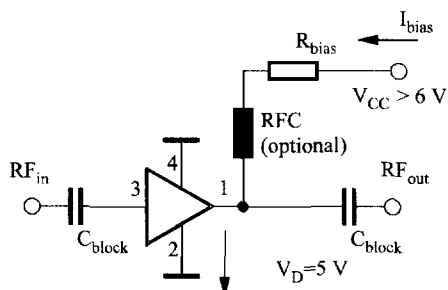
this amplifier with minimal external circuitry, thus providing a simple, cost effective way to achieve high level amplification.

### Features

- Broadband amplification
- 50 Ω cascadable gain block
- High gain (19 dB at 900 MHz)
- Low noise figure (2.9 dB at 900 MHz)
- High output level
- Low cost surface mount plastic package
- Few external components



S868T Marking: 868  
Plastic case (SOT 143)  
1 = RF-output; 2 = Ground; 3 = RF-input; 4 = Ground



$$R_{bias} = (V_{CC} - 5 \text{ V}) / I_{bias} \quad 13295$$

Typical biasing configuration

### Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Device current	$I_{bias}$	55	mA
RF input power	$P_{in}$	+20	dBm
Total power dissipation $T_{amb} \leq 25^\circ\text{C}$	$P_{tot}$	275	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-65 to +150	$^\circ\text{C}$

### Maximum Thermal Resistance

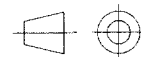
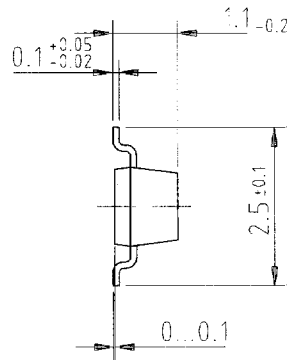
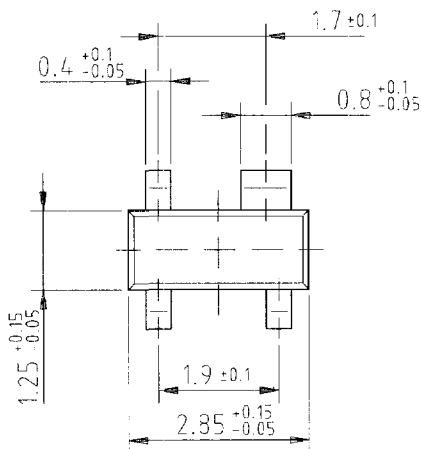
Parameters	Symbol	Value	Unit
Junction ambient on glass fibre printed board (25 x 20 x 1.5) mm <sup>3</sup> plated with 35 μm Cu	$R_{thJA}$	450	K/W

## Electrical AC Characteristics

$T_{amb} = 25^{\circ}\text{C}$ ,  $I_{bias} = 45\text{ mA}$ ,  $Z_o = 50\ \Omega$ ,  $f = 900\text{ MHz}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Power gain	$G_p$	17	19		dB
3 dB bandwidth	$f_{3dB}$		500		MHz
Input VSWR $f = 0.1$ to $2.5\text{ GHz}$	VSWR		1.8:1		
Output VSWR $f = 0.1$ to $2.5\text{ GHz}$	VSWR		1.8:1		
Noise figure $f = 900\text{ MHz}$	F		2.9		dB
Intermodulation distortion 22.5 mV input voltage	$IM_3$		55		dB
Output power at 1 dB gain compression	$P_{1dB}$		13		dBm
Device voltage	$V_d$		5		V

## Dimensions in mm



Technical drawings  
according to DIN  
specifications

96 12240