

BIPMIC[®] – Cascadable Silicon Bipolar Amplifier

Electrostatic sensitive device.
Observe precautions for handling.



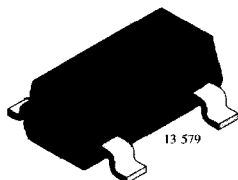
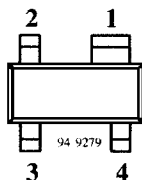
Applications

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

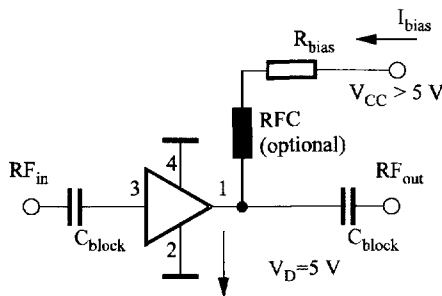
this amplifier with minimal external circuitry, thus providing a simple, cost effective way to achieve low level amplification.

Features

- Broadband amplification
- Low operating voltage (6 V)
- 50 Ω cascadable gain block
- High gain (17.5 dB at 900 MHz)
- Low noise figure (3.3 dB at 900 MHz)
- Low cost surface mount plastic package
- Few external components



S858TA1 Marking: 858
Plastic case (SOT 143)
1 = RF-output; 2 = Ground; 3 = RF-input; 4 = Ground



$$R_{bias} = (V_{CC} - 5 V) / I_{bias} \quad 13292$$

Typical biasing configuration

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Device current	I_{bias}	35	mA
RF input power	P_{in}	+20	dBm
Total power dissipation $T_{amb} \leq 60^{\circ}C$	P_{tot}	200	mW
Junction temperature	T_j	150	$^{\circ}C$
Storage temperature range	T_{stg}	-65 to +150	$^{\circ}C$

Maximum Thermal Resistance

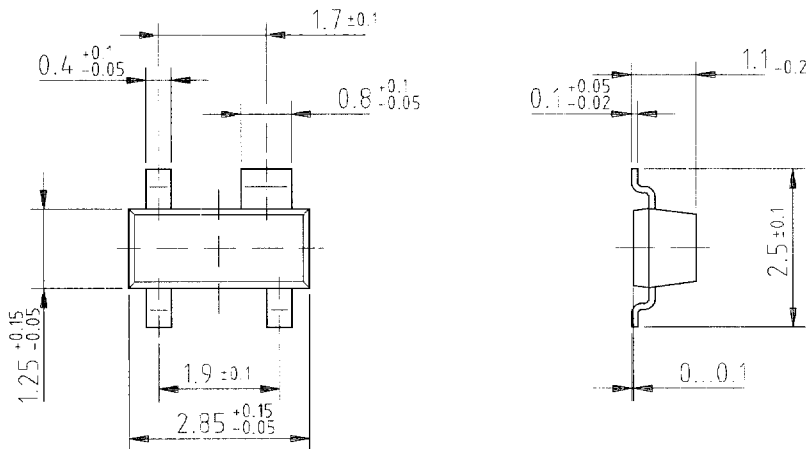
Parameters	Symbol	Value	Unit
Junction ambient on glass fibre printed board (25 x 20 x 1.5) mm ³ plated with 35 μm Cu	R_{thJA}	450	K/W

Electrical AC Characteristics

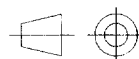
$I_{bias} = 29 \text{ mA}$, $Z_0 = 50 \Omega$, $T_{amb} = 25^\circ\text{C}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Power gain $f = 900 \text{ MHz}$	G_p	17	17.5		dB
3 dB bandwidth	f_{3dB}		0.5		GHz
Input VSWR $f = 0.1 \text{ to } 2.5 \text{ GHz}$	VSWR		1.8:1		
Output VSWR $f = 0.1 \text{ to } 2.5 \text{ GHz}$	VSWR		1.8:1		
Noise figure $f = 900 \text{ MHz}$	F		3.3		dB
Intermodulation distortion 22.5 mV input voltage	IM_3		50		dB
Output power at 1 dB gain compression	P_{1dB}		5		dBm
Device voltage	V_d	4.0	5.0	6.0	V

Dimensions in mm



96 12240



Technical drawings
according to DIN
specifications