

Cascadable Silicon Bipolar MMIC Amplifier

Electrostatic sensitive device.
Observe precautions for handling.



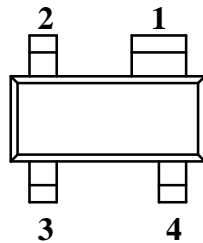
Applications

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



94 9279

S858TA3 Marking: TA3

Plastic case (SOT 143)

1 = RF-output; 2 = Ground; 3 = RF-input; 4 = Ground

Absolute Maximum Ratings

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

Maximum Thermal Resistance

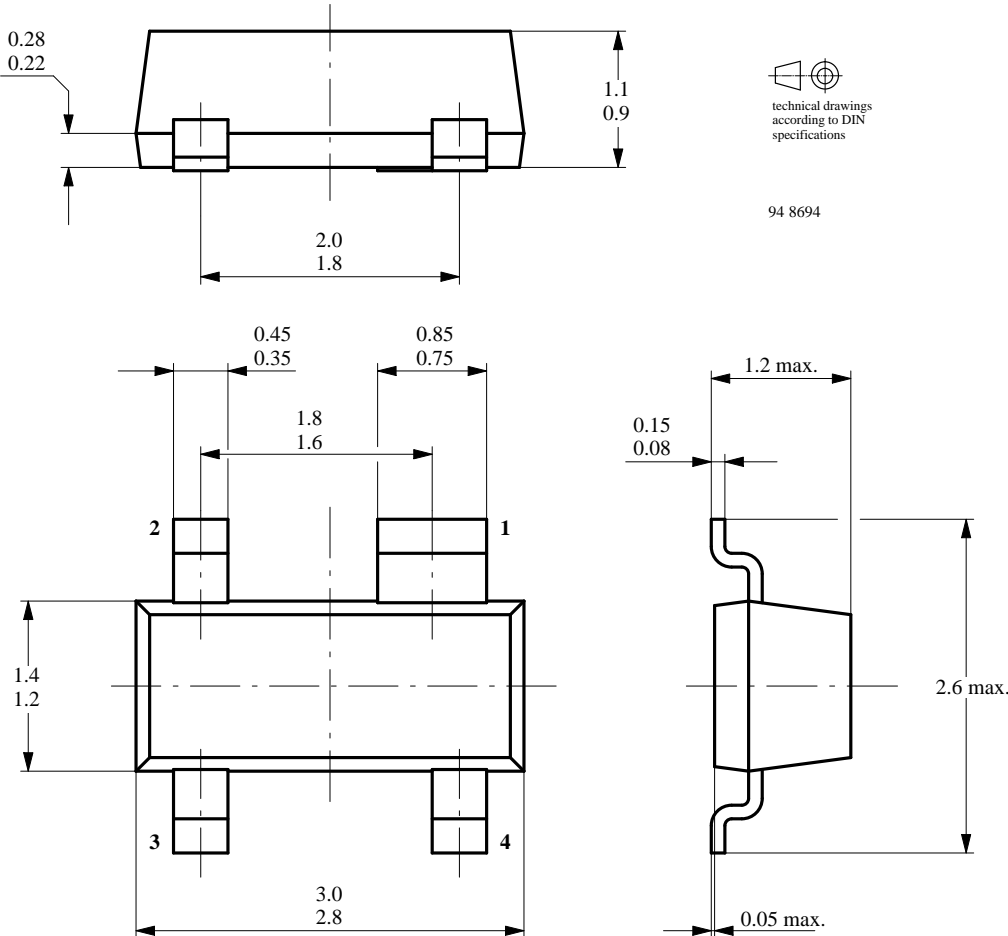
Parameters	Symbol	Value	Unit
Channel ambient on glass fibre printed board (25 x 20 x 1.5) mm ³ plated with 35 μm Cu	R_{thJA}	450	K/W

Electrical AC Characteristics

$T_{amb} = 25^{\circ}\text{C}$, $I_b = 29 \text{ mA}$, $Z_0 = 50 \Omega$, $f = 900 \text{ MHz}$

Parameters / Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Power gain	G_p	17	17.5		dB
3 dB bandwidth	f_{3dB}		500		MHz
Input VSWR f = 0.1 to 2.5 GHz	VSWR		1.8:1		
Output VSWR f = 0.1 to 2.5 GHz	VSWR		1.8:1		
Noise figure	F		3.3		dB
Intermodulation distortion 22.5 mV input voltage	IM_3		50		dB
1 dB compression point	P_{1dB}		10		dBm
Device voltage	V_d	2.9	3.6	4.3	V

Dimensions in mm



Ozone Depleting Substances Policy Statement

It is the policy of **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

TEMIC TELEFUNKEN microelectronic GmbH semiconductor division has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

TEMIC can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC products for any unintended or unauthorized application, the buyer shall indemnify TEMIC against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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