

DATA SHEET

MX1011B430W

NPN microwave power transistor

Product specification
Supersedes data of November 1994
File under Discrete Semiconductors, SC15

1997 Feb 18

NPN microwave power transistor

MX1011B430W

FEATURES

- Suitable for short and medium pulse applications up to 500 μ s/10%
- Internal input and output prematching networks allow an easier design of circuits
- Diffused emitter ballasting resistors improve ruggedness
- Interdigitated emitter-base structure provides high emitter efficiency
- Gold metallization with barrier realizes very stable characteristics and excellent lifetime
- Multicell geometry improves power sharing and reduces thermal resistance.

APPLICATIONS

Intended for use in common base, class C, broadband, pulsed power amplifiers for TCAS applications in the 1030 to 1090 MHz band. Also suitable for medium pulse, heavy duty operation within this band.

DESCRIPTION

NPN silicon planar epitaxial microwave power transistor in a SOT439A metal ceramic flange package with base connected to flange.

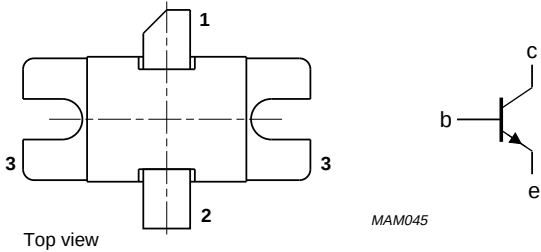
QUICK REFERENCE DATA

Microwave performance up to $T_{mb} = 25\text{ }^{\circ}\text{C}$ in a common base class C broadband amplifier.

MODE OF OPERATION	CONDITIONS	f (GHz)	V _{CC} (V)	P _L (W)	G _p (dB)	η_c (%)
Class C	$t_p = 30\text{ }\mu\text{s}$; $\delta = 1\%$	1.03	45	≥ 480	≥ 6.7	≥ 45

PINNING - SOT439A

PIN	DESCRIPTION
1	collector
2	emitter
3	base connected to flange



Top view

MAM045

Marking code: MX1011B430W.

Fig.1 Simplified outline and symbol.

WARNING

Product and environmental safety - toxic materials

This product contains beryllium oxide. The product is entirely safe provided that the BeO slab is not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with the general or domestic waste.

MAINTENANCE TYPE - NOT RECOMMENDED FOR NEW DESIGNS; SEE INDEX SECTION OF SC15

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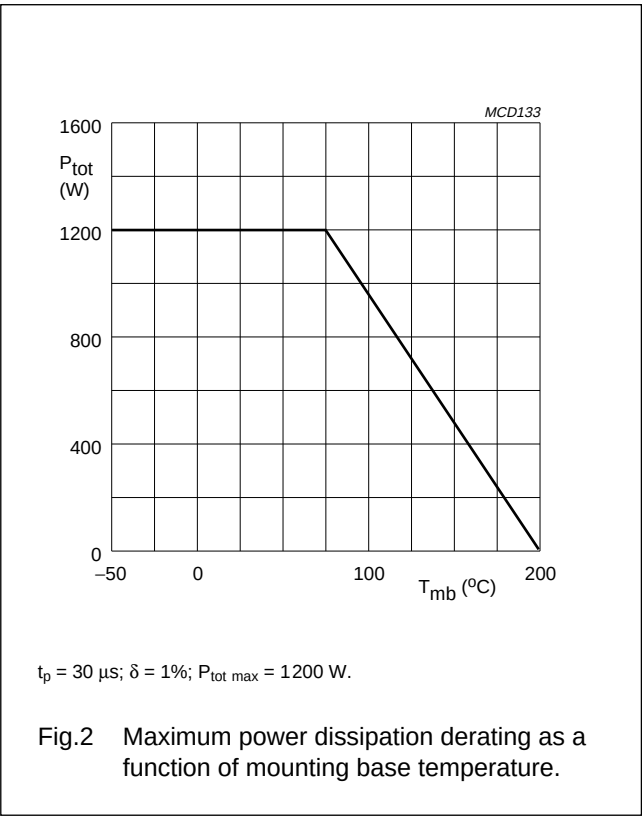
LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter	–	65	V
V _{CEO}	collector-emitter voltage	open base	–	20	V
V _{CES}	collector-emitter voltage	R _{BE} = 0 Ω	–	65	V
V _{EBO}	emitter-base voltage	open collector	–	3	V
I _C	collector current	t _p ≤ 30 μs; δ ≤ 1%	–	35	A
P _{tot}	total power dissipation	t _p ≤ 30 μs; δ ≤ 1%; T _{mb} < 75 °C	–	1200	W
T _{stg}	storage temperature		–65	+200	°C
T _j	operating junction temperature		–	200	°C
T _{sld}	soldering temperature	t ≤ 10 s; note 1	–	235	°C

Note

1. Up to 0.2 mm from ceramic.

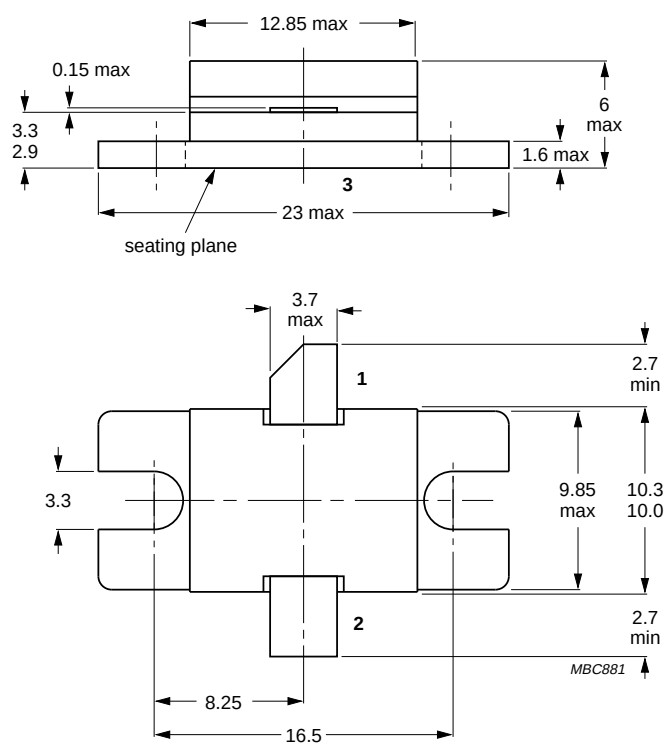


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PACKAGE OUTLINE



Dimensions in mm.

Torque on screws: max. 0.4 Nm.

Recommended screw: M3.

Recommended pitch for mounting screws: 19 mm.

Fig.3 SOT439A.

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NPN microwave power transistor**MX1011B430W****DEFINITIONS**

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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NOTES

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