

# NPN silicon planar epitaxial microwave power transistor

**MX1011B400W**

## FEATURES

- Suitable for short and medium pulse applications up to 500  $\mu$ 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 good stability of the characteristics and excellent lifetime
- Multicell geometry improves power sharing and reduces thermal resistance.

## DESCRIPTION

NPN silicon planar epitaxial microwave power transistor intended for use in common base class C pulsed power amplifiers. The transistor has a FO-91B metal ceramic flange package with base connected to flange.

## 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.

## QUICK REFERENCE DATA

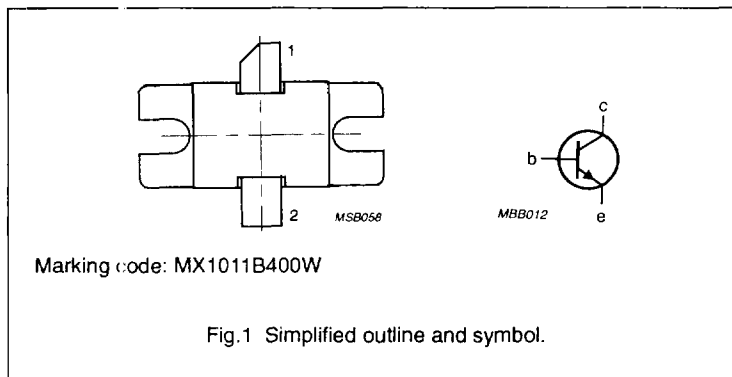
Microwave performance up to  $T_{nb} = 25^\circ\text{C}$  in a common base class C narrow band amplifier.

MODE OF OPERATION	CONDITIONS	f (GHz)	V <sub>CC</sub> (V)	P <sub>L</sub> (W)	G <sub>p</sub> (dB)	$\eta_c$ (%)
class C	$t_p = 30 \mu\text{s};$ $\delta = 1\%$	1.03	45	$\geq 450$	$\geq 6.5$	$\geq 42$

## PINNING - FO-91B

PIN	DESCRIPTION
1	collector
2	emitter
3	base connected to flange

## PIN CONFIGURATION



## 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.

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## LIMITING VALUES

In accordance with the Absolute Maximum 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	$R_{BE} = 0 \Omega$	–	65	V
$V_{EBO}$	emitter-base voltage	open collector	–	3	V
$I_C$	average collector current	$t_p \leq 30 \mu\text{s};$ $\delta \leq 1\%$	–	35	A
$P_{tot}$	total power dissipation	$T_{mb} < 75 \text{ }^\circ\text{C};$ $t_p \leq 30 \mu\text{s};$ $\delta \leq 1\%$	–	1200	W
$T_{stg}$	storage temperature range		–65	200	$^\circ\text{C}$
$T_j$	operating junction temperature		–	200	$^\circ\text{C}$
$T_{sld}$	soldering temperature	$t \leq 10 \text{ s}$ note 1	–	235	$^\circ\text{C}$

### Note

- Up to 0.2 mm from ceramic.

