NPN silicon planar epitaxial microwave power transistor

RZB06050W

FEATURES

- Suitable for short and medium pulse applications up to 1 ms/10%
- Internal input 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.

PINNING - FO-57C

PIN	DESCRIPTION
1	collector
2	emitter
3	base connected to flange

DESCRIPTION

NPN silicon planar epitaxial microwave power transistor in a FO-57C metal ceramic flange package with base connected to flange.

APPLICATIONS

Intended for use in common base, class C, broadband, pulsed power amplifiers for radar applications in the 540 to 610 MHz band. Also suitable for medium pulse, heavy duty operation within this band.

QUICK REFERENCE DATA

Microwave performance up to T_{mb} = 25 °C in a common base class C broadband amplifier.

MODE OF OPERATION	CONDITIONS	f (MHz)	V_{CC} (V)	P_L (W)	G_p (dB)	η_C (%)
class C	t_p = 500 µs; δ = 15%	540 to 610	40	≥ 30	≥ 7.5	≥ 50

PIN CONFIGURATION

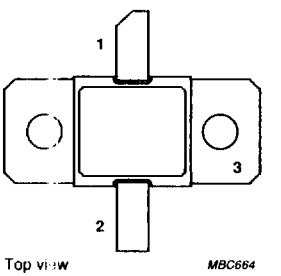

Fig.1 Simplified outline and symbol.

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.

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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	–	15	V
V_{CES}	collector-emitter voltage	$R_{BE} = 0\ \Omega$	–	60	V
V_{EBO}	emitter-base voltage	open collector	–	3	V
T_{stg}	storage temperature range		–65	200	°C
T_j	junction temperature		–	200	°C
T_{sld}	soldering temperature	$t \leq 10$ s note 1	–	235	°C

Note

1. Up to 0.2 mm from ceramic.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MAX.
$R_{th\ j\text{-}mb}$	thermal resistance from junction to mounting base	$T_j = 120$ °C	5 K/W
$R_{th\ mb\text{-}h}$	thermal resistance from mounting base to heatsink		0.2 K/W

CHARACTERISTICS

$T_{mb} = 25$ °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
I_{CBO}	collector cut-off current	$V_{CB} = 50$ V; $I_E = 0$	2	mA
I_{EBO}	emitter cut-off current	$V_{EB} = 1.5$ V; $I_C = 0$	200	µA