PHILIPS INTERNATIONAL 56E D 7110826 0046338 637 PHIN

PULSED MICROWAVE POWER TRANSISTOR

NPN silicon power transistor (two transistor sections) intended for use in military and professional applications. It operates only in pulsed conditions and is recommended for IFF applications at 1.09 MHz.

It offers the following technological advantages:

- Interdigitated structure giving a high emitter efficiency
- Diffused emitter ballasting resistors providing excellent current sharing and withstanding a high VSWR.
- Gold metallization realizes very good stability of the characteristics and excellent life time
- Multicell geometry gives good balance of dissipated power and thermal resistance

The transistor has an FO-96 metal-ceramic flange package.

It is mounted in a common-base configuration, specified in class-C and operates in pulsed conditions. An input matching cell improves the input impedance and allows an easier design of wideband circuits.

QUICK REFERENCE DATA

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

mode of operation	f GHz	V_{CC} V	P_L W	G_p dB	η_c %	z_i Ω	Z_L Ω
pulsed: t_p = 10 μs δ = 1%	1.09	50	≥ 800	≥ 7	> 30	see Fig. 3	

MECHANICAL DATA

FO-96 (see Fig. 1).

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 general industrial or domestic waste.

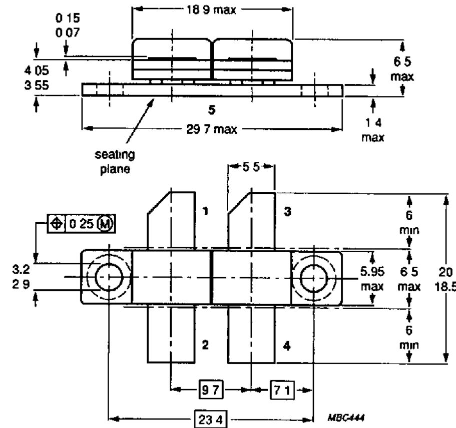
MECHANICAL DATA

Dimensions in mm

Fig. 1 FO-96.

Pinning:

1 = collector
2 = emitter
3 = collector
4 = emitter
5 = base



Torque on screw: max. 0.4 Nm
Recommended screw: M2.5

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Parameter	Symbol		Value	Unit
Collector-base voltage, open emitter	V_{CBO}	max.	65	V
Collector-emitter voltage				
$R_{BE} = 0$	V_{CES}	max.	65	V
open base	V_{CEO}	max.	25	V
Emitter-base voltage, open collector	V_{EBO}	max.	3.5	V
Collector current, per transistor section $t_p \leq 10\ \mu s$, $\delta \leq 1\%$	I_C	max.	30	A
Total power dissipation $t_p \leq 10\ \mu s$, $\delta \leq 1\%$; $T_{mb} \leq 75\ ^oC$	P_{tot}	max.	2x1000	W
Storage temperature	T_{stg}		−65 to 150	°C
Junction temperature	T_j	max.	200	°C
Soldering temperature at 0.1 mm from case; $t_{sld} \leq 10$ s	T_{sld}	max.	235	°C

THERMAL RESISTANCE* (at $T_j = 75\ ^oC$)

Parameter	Symbol		Value	Unit
From junction to mounting base under pulsed conditions: $t_p \leq 10\ \mu s$, $\delta \leq 1\%$	$R_{th\ j\text{-}mb}$	max.	0.02	K/W

* Dissipation of either transistor section shall not exceed half rated power.