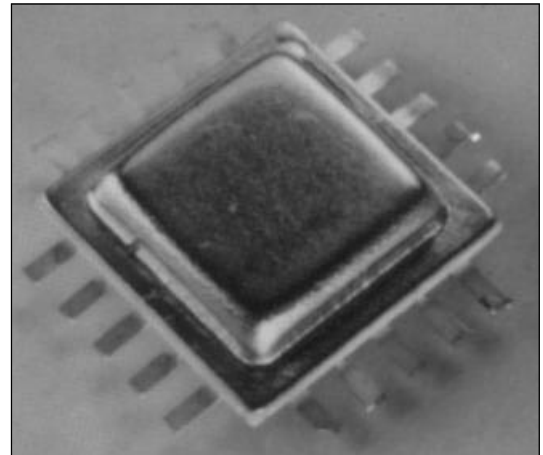


MMIC for SART Applications



Features

- Integral T/R switch
- High output power
- High linearity VCO
- High reproducibility MMIC technology
- Low cost
- Available in Die form or surface mount ceramic package

Description

The P35-4800 Gallium Arsenide Monolithic Microwave Integrated Circuit operates at X-Band and is designed to provide low cost transmit functions in Search and Rescue Transponders (SARTS) as part of the Global Maritime Distress and Safety System (GMDSS). The High reproducibility of the MMIC means no post assembly alignment is required. The output power of the MMIC has been designed to meet minimum EIRP specifications with low gain antenna and no post amplification.

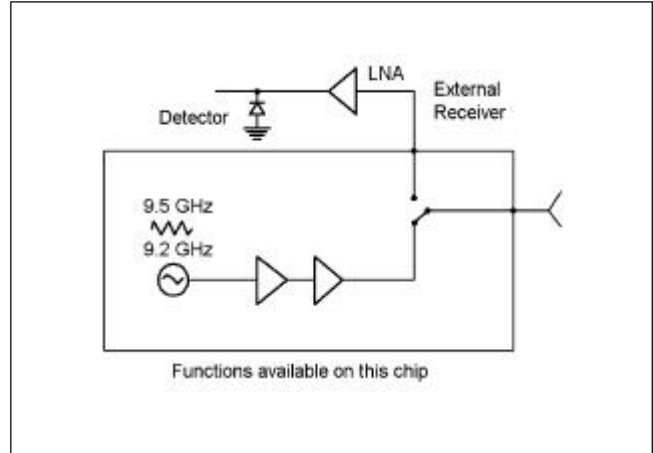
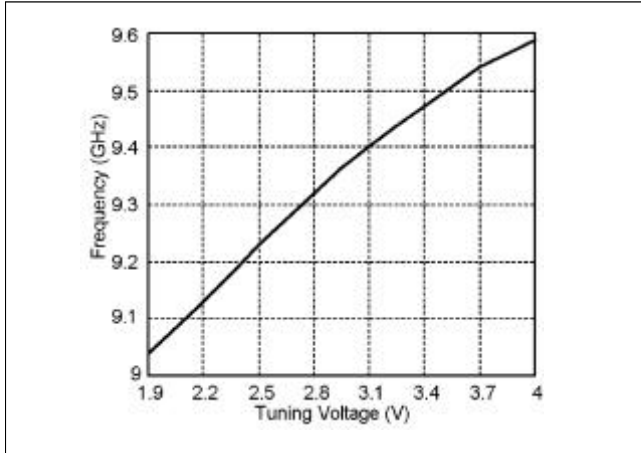
The die is fabricated using MOC's F20 Gallium Arsenide MESFET MMIC process. It is fully protected using Silicon Nitride passivation for excellent performance and reliability.

Electrical Performance

Ambient temperature = $22 \pm 3^{\circ}\text{C}$, $Z_0 = 50\Omega$

Parameter	Conditions	Min	Typ	Max	Units
Frequency range		9.17	-	9.56	GHz
Output power		25.0	26.0	-	dBm
Output Power variation		-	-	2.0	dB
Pulling figure	14dB Return loss	-	-	± 25	MHz
Phase noise	@100kHz Offset	-	-65.0	-	dBc/Hz
Tuning voltage	+Vdc @ Low frequency	0.20	-	-	V
Tuning voltage	+Vdc @ High frequency	-	-	4.0	V
Drain voltage	Vd	-	+6.1	-	V
Tuning profile (Linearity)		-	-	20	MHz
Max tuning sensitivity		-	300	-	MHz/V
Tuning speed		2000	-	-	
MHz/mS					
Current consumption		-	-	500	mA
Negative bias voltage1		-2.5	-	-1	V
Negative Current Consumption		-	-	2	mA
Insertion loss	Antenna to receiver port	-	-	2.7	dB
Isolation	Antenna to receiver port	20	-	-	dB
Tx to Rx Switching time	50% Control to 90% RF	-	-	500	nS
Rx to Tx Switching time	50% Control to 90% RF	-	-	50	nS
Logic level 1		-0.2	-	+0.2	V
Logic level 0		-6.5	-	-8.0	V
Control Current		-	-	200	mA

Typical Performance at 22°C



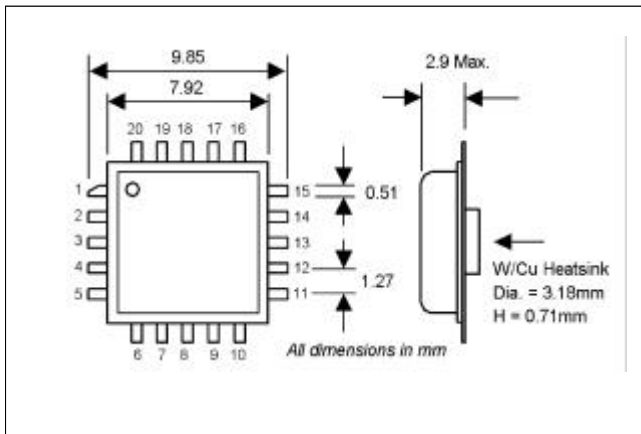
Absolute maximum Ratings

Max supply voltage	+8.0V
Max control voltage	- 8.0V
Chip operating temperature	-20°C to +55°C
Package operating temperature	-20°C to +55°C
Storage temperature	-65°C to +150°C

Package Details

Pad	Function
1	GND
2	-Vg Negative Bias
3	GND
4	+Vd
5	GND
6	GND
7	Vt Tuning voltage
8	GND
9	Rx
10	GND
11	GND
12	C2 Control 2
13	GND
14	C1 Control 1
15	GND
16	GND
17	Antenna port
18	GND
19	+Vd
20	GND

Package Outline



Control Logic

Function	C1	C2
Receive	1	0
Transmit	0	1

Ordering Information: P25-4800-1 Ceramic Package

The data and product specifications are subject to change without notice. These devices should not be used for device qualification and production without prior notice.

463/SM/00044/200 Issue 1/1

Marconi

www.moc.marconi.com