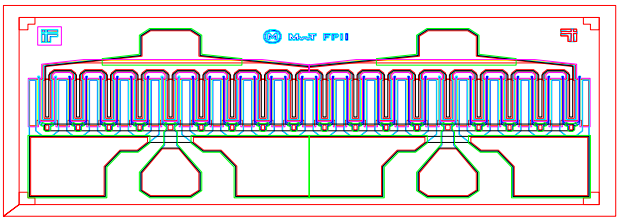
MicroWave Technology

Preliminary

MwT- 11

High Power, High Linearity GaAs FET

Dec 2005



Chip Dimensions: 775 x 343 microns
Chip Thickness: 100 microns

Features:

- **+30 dBm typical Output Power at 12 GHz**
- **9 dB typical Small Signal Gain at 12 GHz**
- **40% typical PAE at 12 GHz**
- **0.3 x 2400 Micron Refractory Metal/Gold Gate**
- **Sorted into 40 mA Idss Bin Ranges**
- **Excellent for High Power, and High Power Added Efficiency**
- **Ideal for Commercial, Military, Hi-Rel Space Applications**
- **Download MwT-11 SPARAM Files (s2p format)**

The MwT-11 is GaAs MESFET device device whose nominal 0.3 micron gate length and 2400 microns gate width make it ideally suited for applications requiring high power up to 1watt. The chip is produced using MwT's reliable metal systems and all devices from each wafer are screened to insure reliability. All chips are passivated using MwT's patented "Diamond-Like Carbon" process for increased durability.

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RF Specifications at Ta= 25 °C

SYMBOL	PARAMETERS & CONDITIONS	FREQ	UNITS	MIN	TYP
OIP3	Output IP3 with two tones Vds=6.0 V Ids=0.6xIDSS=300 mA		dBm		45
P1dB	Output Power at 1dB Compression Vds=6.0 V Ids=0.6xIDSS=300 mA	12 GHz	dBm	28.0	30.0
SSG	Small Signal Gain VDS=6.0 V Ids=0.6xIDSS=300 mA	12 GHz	dB	7.0	9.0
PAE	Power Added Efficiency at P1dB VDS=6.0 V Ids=0.6xIDSS=300 mA	12 GHz	%		40
IDSS	Recommended IDSS Range		mA		400-800

DC Specifications at Ta= 25 °C

SYMBOL	PARAMETERS & CONDITIONS	UNITS	MIN	TYP	MAX
IDSS	Saturated Drain Current Vds=3.0 V Vgs=0.0 V	mA	240		920
Gm	Transconductance Vds=2.0 V Vgs=0.0 V	mS	290	380	
Vp	Pinch-off Voltage Vds=3.0 V Ids=16 mA	V		-2.5	-5.0
BVGSO	Gate-to-Source Breakdown Voltage Igs= -2.4 mA	V	-6.0	-12.0	
BVGDO	Gate-to-Drain Breakdown Voltage Igd= -2.4 mA	V	-8.0	-12.0	
Rth	Chip Thermal Resistance	C/W		28	

Bin Selection Guide

Bin	A	B	C	D
Idss Range	240-360	360-480	480-720	720-840

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