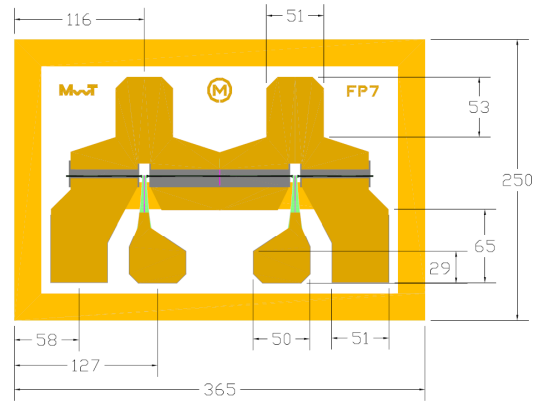


### Features:

- 21 dBm Output Power at 12 GHz
- 15 dB Small Signal Gain at 12 GHz
- Excellent for High Linear Gain or Oscillator Applications
- Ideal for Commercial, Military, Hi-Rel Space Applications
- 0.25 Micron Refractory Metal/Gold Gate
- 250 Micron Gate Width
- Choice of Chip and Three Package Types



Chip Dimensions: 365 x 250 microns  
Chip Thickness: 100 microns

### Description:

The MwT-7F is a GaAs MESFET device whose nominal 0.25 micron gate length and 250 micron gate width make it ideally suited to applications requiring high-gain and medium linear power in the 500 MHz to 26 GHz frequency range. MwT-7F is equally effective for either wideband (e.g., 6 to 18 GHz) or narrow-band applications. Processing which guarantees low phase noise makes the MwT-7F particularly attractive for oscillator applications. All chips are passivated with SiN (Silicon Nitride).

### RF Specifications: • at Ta= 25 C

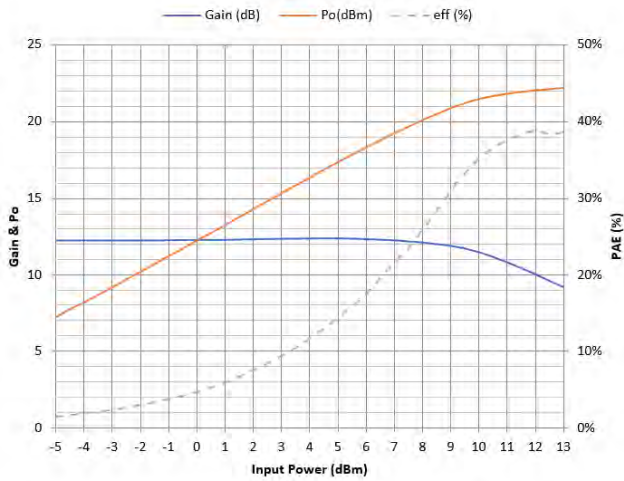
PARAMETERS & CONDITIONS	SYMBOL	FREQ	UNITS	MIN	TYP
Output Power at 1dB Compression Vds=7.0V Ids=0.6xIDSS	P1dB	12 GHz	dBm		21.0
Output Third Order Intercept Point Vds=7.0V Ids=0.6xIDSS	OIP3	12 GHz	dBm		32
Power Added Efficiency Vds=7.0V Ids=0.6xIDSS	PAE	12 GHz	%		35
Small Signal Gain Vds=7.0V Ids=0.6xIDSS	SSG	12 GHz	dB	14.0	15.0
Optimum Noise Figure Vds=4.0V Ids=20mA	NF Opt	12 GHz	dB		2.0
Gain @ Opt NF Vds=4.0V Ids=20mA	GA	12 GHz	dB		8.0

### DC Specifications: • at Ta= 25 ° C

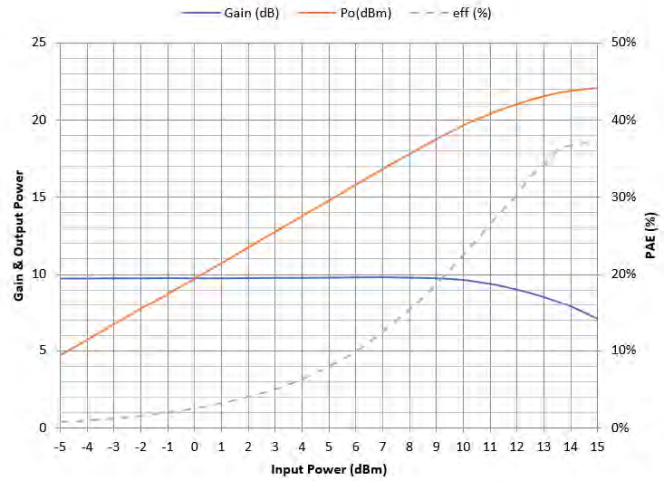
PARAMETERS & CONDITIONS	SYMBOL	UNITS	MIN	TYP	MAX
Saturated Drain Current Vds= 4.0 V VGS=0.0V	IDSS	mA	70		85
Transconductance Vds= 2.0 V VGS=0.0V	Gm	mS		42	
Pinch-off Voltage Vds= 3.0 IDS=0mA	Vp	V		-2.0	
Gate-to-Source Breakdown Voltage Igs= -1.0 mA	BVGSO	V	-16	-17	
Gate-to-Drain Breakdown Voltage Igd= -1.0 mA	BVGDO	V	-16	-17	
Thermal Resistance <i>MwT-7F Chip, 71 Pkg 70 Pkg &amp; 73 Pkg</i>	Rth	°C/W			150 350*

\*Overall Rth depends on case mounting

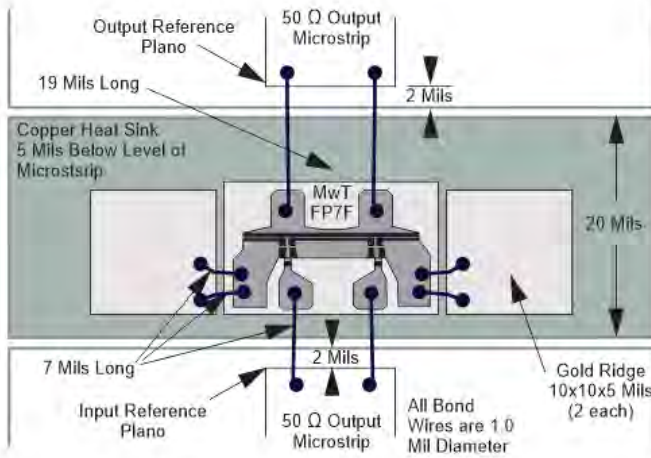
**MwT-7F, Typical Power at 12GHz**  
 $V_{ds}=7V; I_{ds}=0.6 \times I_{DSS}$



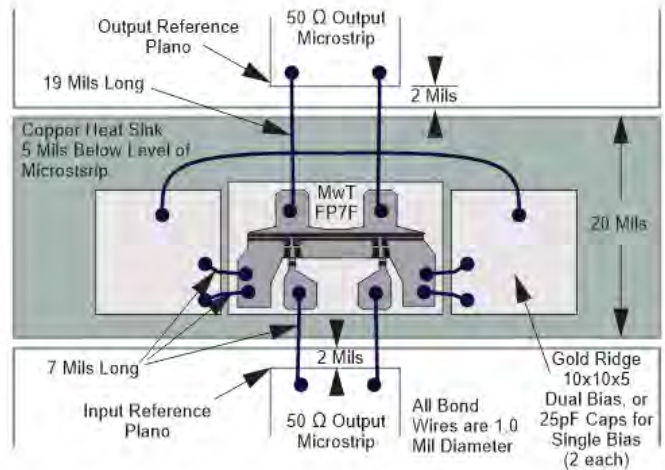
**MwT-7F, Typical Power at 18GHz**  
 $V_{ds}=7V; I_{ds}=0.6 \times I_{DSS}$



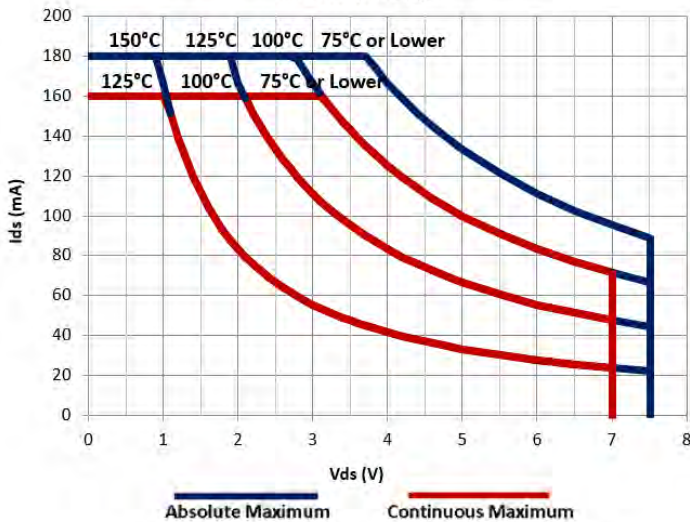
### MwT-7F DUAL BIAS



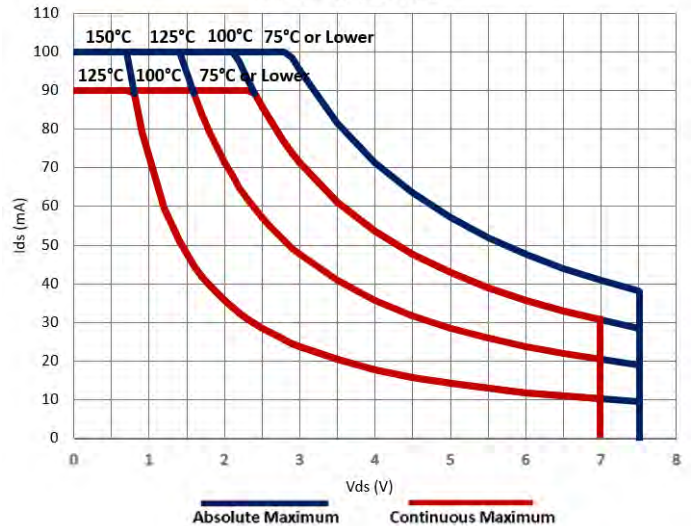
### MwT-7F OPTIONAL BONDING



SAFE OPERATING LIMITS vs BACKSIDE TEMPERATURE  
MwT-7F Chip & 71 pkg



SAFE OPERATING LIMITS vs BACKSIDE TEMPERATURE  
MwT-7F with 70 pkg & 73 pkg



### MAXIMUM RATINGS AT Ta = 25 °C

Symbol	Parameter	Units	Cont Max1	Absolute Max2
VDS	Drain to Source Volt.	V	See Safe Operating Limits	
Tch	Channel Temperature	°C	+150	+175
Tst	Storage Temperature	°C	-65 to +150	+175
Pin	RF Input Power	mW	80	120

**Notes:**

- Exceeding any one of these limits in continuous operation may reduce the mean-time-to-failure below the design goal.
- Exceeding any one of these limits may cause permanent damage.