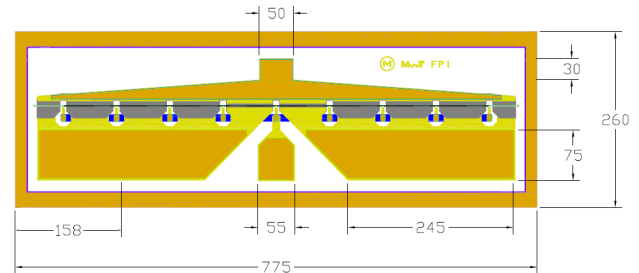


### Features:

- 10 dB Gain at 12 GHz
- 26 dBm Output Power at 18 GHz
- Excellent for High Linearity Amplifier Applications
- Ideal for Commercial, Military, Hi-Rel Space Applications
- 0.25 Micron Refractory Metal/Gold Gate
- 630 Micron Gate Width
- Choice of Chip and Three Package Types



Chip Dimensions: 775 x 260 microns  
Chip Thickness: 100 microns

### Description:

The MwT-1F is a GaAs MESFET device whose nominal 0.25 micron gate length and 630 micron gate width make it ideally suited to applications requiring high-gain and linearity up to 18 GHz. MwT-1F is equally effective for either wideband (e.g. 2 to 6 GHz) or narrow-band applications. All chips are passivated with SiN (Silicon Nitride).

### RF Specifications: • at $T_a = 25^\circ C$

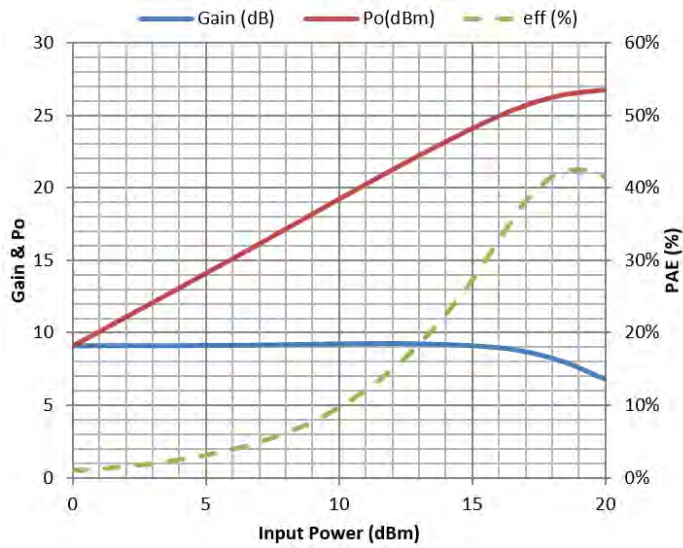
PARAMETERS & CONDITIONS	SYMBOL	FREQ	UNITS	MIN	TYP
Output Power at 1dB Compression $V_{ds}=7.0V$ $I_{ds}=0.6 \times I_{DSS}$	P1dB	12 GHz	dBm	25.0	26.0
Output Third Order Intercept Point $V_{ds}=7.0V$ $I_{ds}=0.6 \times I_{DSS}$	OIP3	12 GHz	dBm	35	37
Power Added Efficiency $V_{ds}=7.0V$ $I_{ds}=0.6 \times I_{DSS}$	PAE	12 GHz	%	35	
Small Signal Gain $V_{ds}=6.0V$ $I_{ds}=0.6 \times I_{DSS}$	SSG	12 GHz	dB	9.0	10.0
Optimum Noise Figure $V_{ds}=3.0V$ $I_{ds}=90mA$	NFopt	12 GHz	dB		2.0
Gain @ Opt NF $V_{ds}=3.0V$ $I_{ds}=90mA$	GAIN	12 GHz	dB		7.0

### DC Specifications: • at $T_a = 25^\circ C$

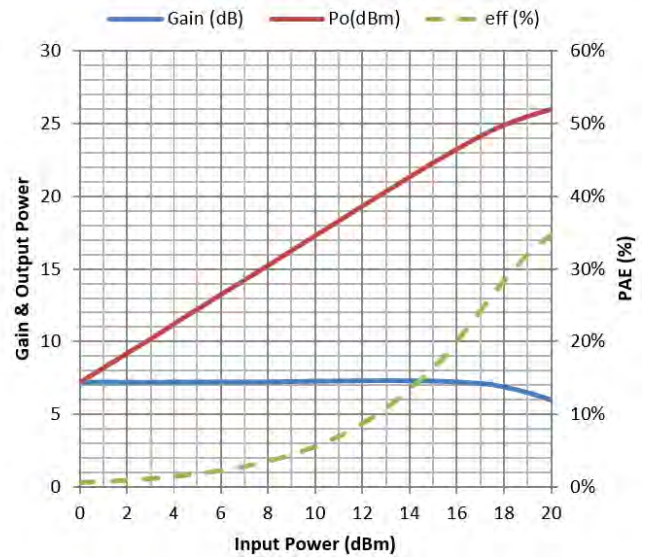
PARAMETERS & CONDITIONS	SYMBOL	UNITS	MIN	TYP	MAX
Saturated Drain Current $V_{ds}=4.0V$ $V_{gs}=0.0V$	$I_{DSS}$	mA	180		220
Transconductance $V_{ds}=4.0V$ $V_{gs}=0.0V$	$G_m$	mS	80	100	
Pinch-off Voltage $V_{ds}=3.0V$ $I_{ds}=4.0mA$	$V_p$	V		-2.0	
Gate-to-Source Breakdown Voltage $I_{gs}=-1.0mA$	BVGSO	V	-16	-17	
Gate-to-Drain Breakdown Voltage $I_{gd}=-1.0mA$	BVGDO	V	-15	-16	
Thermal Resistance <i>MwT-1F chip &amp; 71 pkg</i> <i>70 pkg &amp; 73 pkg</i>	$R_{th}$	C/W			65 165*

\*Overall  $R_{th}$  depends on case mounting

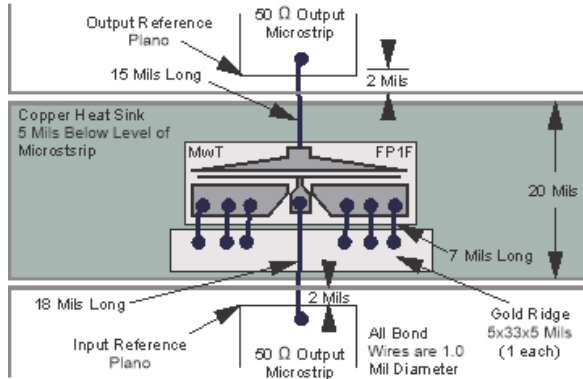
**MwT-1F, Typical Power at 12GHz**  
 $V_{ds}=7V, I_{ds}=0.6 \times I_{dss}$



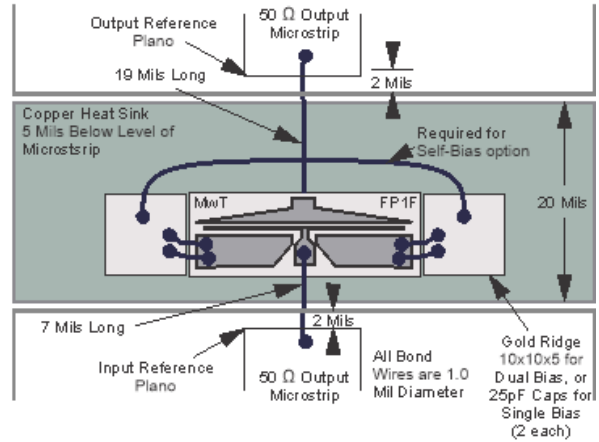
**MwT-1F, Typical Power at 18GHz**  
 $V_{ds}=7V; I_{ds} = 0.6 \times I_{dss}$



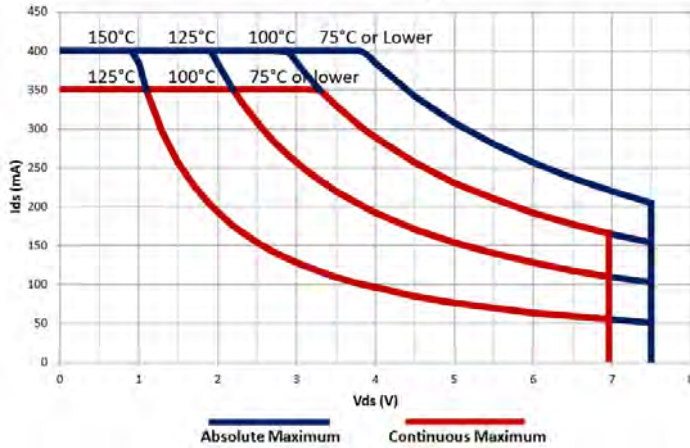
### MwT-1F DUAL BIAS



### MwT-1F OPTIONAL BONDING



Safe Operating Limits vs Backside temperature  
Chip & 71 package



Safe Operating Limits vs Backside Temperature  
70 & 73 package

