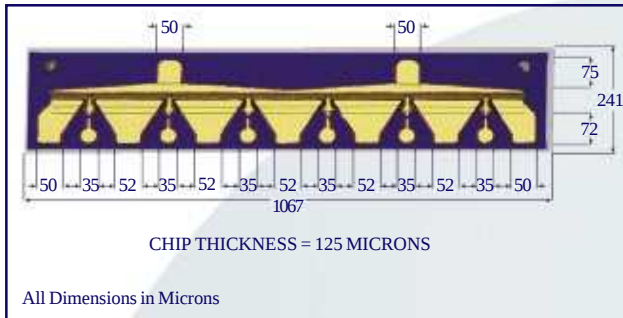


MwT-16

26 GHz High Power GaAs FET



DOWNLOAD ADDITIONAL DATA WWW.MWTINC.COM



FEATURES

- 0.5 WATT POWER OUTPUT AT 12 GHz
- +39 dBm THIRD ORDER INTERCEPT
- HIGH ASSOCIATED GAIN
- 0.3 MICRON REFRACTORY METAL/GOLD GATE
- 900 MICRON GATE WIDTH
- DIAMOND-LIKE CARBON PASSIVATION

DESCRIPTION

The MwT-16 is a GaAs MESFET device whose nominal quarter micron gate length and 900 micron gate width make it ideally suited to applications requiring high-power output in the 2 GHz to 18 GHz frequency range. The straight gate geometry of the MwT-16 makes it equally effective for either wideband (e.g. 6-18 GHz) or narrow-band applications. The chip is produced using MwT's reliable metal system and all devices are screened to insure reliability. All chips are passivated using MwT's patented "Diamond-Like Carbon" process for increased durability. Designers can use MwT's unique BIN selection feature to choose devices from narrow Idss ranges, insuring consistent circuit operation.

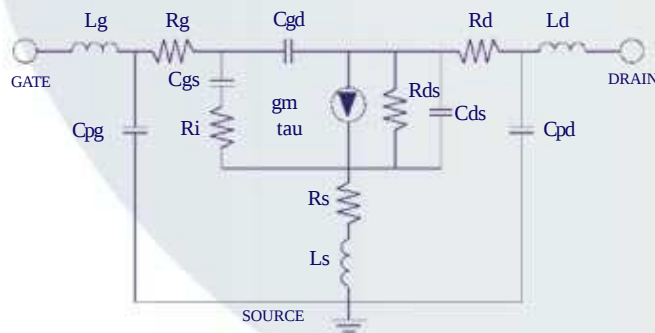
DC SPECIFICATIONS AT Ta = 25°C

SYMBOL	PARAM. & CONDITIONS	UNITS	MIN	TYP	MAX
IDSS	Saturated Drain Current Vds= 4.0 V VGS= 0.0 V	mA	90		360
Gm	Transconductance Vds= 2.0 V VGS= 0.0 V	mS	108	130	
Vp	Pinch-off Voltage Vds= 3.0 V IDS= 6.0 mA	V		-2.0	-5.0
BVGSO	Gate-to-Source Breakdown Volt. Igs= -0.6 mA	V	-6.0	-12.0	
BVGDO	Gate-to-Drain Breakdown Volt. Igd= -0.6 mA	V	-8.0	-12.0	
Rth	Thermal Resistance MwT-16 Chip	°C/W		55	

RF SPECIFICATIONS AT Ta = 25°C

SYMBOL	PARAMETERS AND CONDITIONS	FREQ	UNITS	MIN	TYP
P1dB	Output Power at 1 dB Compression VDS= 6.0 V IDS=150mA	12 GHz	dBm	26.0	27.0
SSG	Small Signal Gain VDS= 6.0 V IDS=150mA	12 GHz	dB	7.5	8.5
PAE	Power Added Efficiency VDS= 6.0V IDS=150mA	12 GHz	%	25	35
Idss	Recommended IDSS Range for Optimum P1dB		mA		240-330

DEVICE EQUIVALENT CIRCUIT MODEL



PARAMETER

VALUE

Source Resistance	Rs	0.60	Ω
Source Inductance	Ls	0.04	nH
Drain-Source Resistance	Rds	150.0	Ω
Drain-Source Capacitance	Cds	0.01	pF
Drain Resistance	Rd	1.0	Ω
Drain Pad Capacitance	Cpd	0.20	pF
Drain Inductance	Ld	0.09	nH
Gate Bond Wire Inductance	Lg	0.05	nH
Gate Pad Capacitance	Cpg	0.50	pF
Gate Resistance	Rg	0.30	Ω
Gate-Source Capacitance	Cgs	.85	pF
Channel Resistance	Ri	1.0	Ω
Gate-Drain Capacitance	Cgd	0.06	pF
Transconductance	gm	140.0	mS
Transit Time	tau	1.9	psec

ORDERING INFORMATION

Chip MwT-16

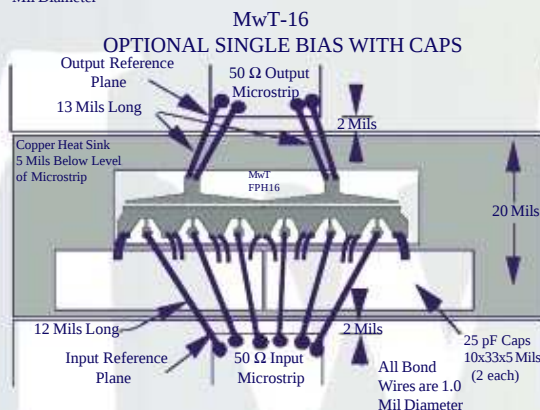
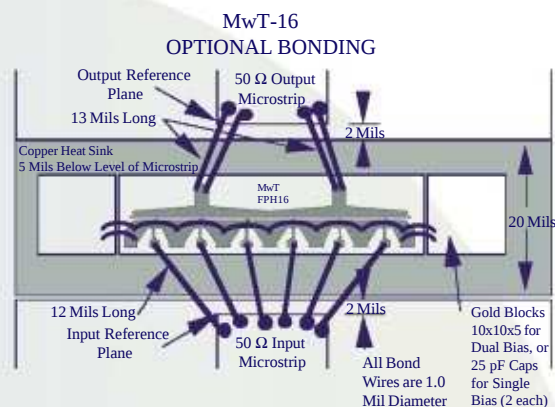
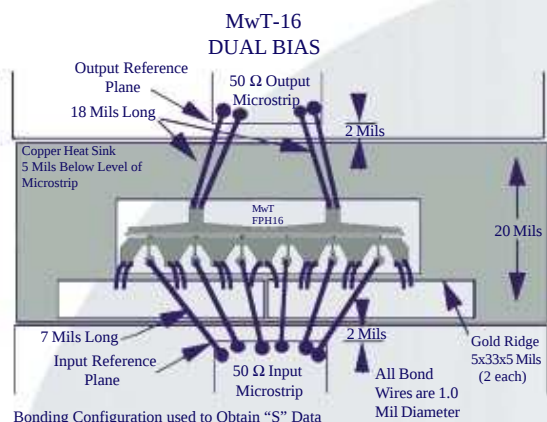
When placing order or inquiring, please specify BIN range, wafer no., if known, and screening level required.

4268 Solar Way Fremont California 94538 Phone: (510) 651-6700 Fax: (510) 651-2208

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MwT-16

26 GHz High Power GaAs FET



— Absolute Maximum — Continuous Maximum

MAXIMUM RATINGS AT $T_a = 25^\circ\text{C}$

SYMBOL	PARAMETER	UNITS	CONT MAX ¹	ABSOLUTE MAX ²
VDS	Drain to Source Voltage	V	See Safe Operating Limits	
Tch	Channel Temperature	°C	+150	+175
Tst	Storage Temperature	°C	-65 to +150	+175
Pin	RF Input Power	mW	280	430

NOTES: 1. Exceeding any one of these limits in continuous operation may reduce the mean-time-to-failure below the design goals.
2. Exceeding any one of these limits may cause permanent damage.

BIN SELECTION

BIN#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IDSS (mA)	90-105	105-120	120-135	135-150	150-165	165-180	180-195	195-210	210-225	225-240	240-255	255-270	270-285	285-300	300-315	315-330	330-345	345-360

BIN ACCURACY STATEMENT

When placing order or inquiring, please specify BIN range, wafer no., if known, and screening level required.

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