

**200W - 28V - 200MHz**  
**GOLD METALLISED MULTI-PURPOSE**  
**SILICON DMOS RF FET**

**FEATURES**

- METAL GATE
- EXTRA LOW  $C_{rss}$
- BROAD BAND
- SIMPLE BIAS CIRCUITS
- LOW NOISE
- HIGH GAIN

**APPLICATIONS**

- HF/VHF/UHF COMMUNICATIONS  
from DC to 300 MHz

**ABSOLUTE MAXIMUM RATINGS**

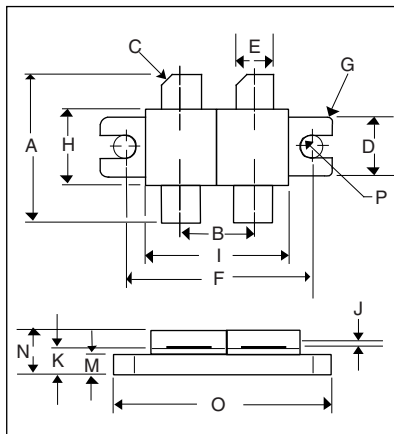
( $T_{CASE} = 25^{\circ}C$  unless otherwise stated)

$P_D$	Power Dissipation	438W
$BV_{DSS}$	Drain-source breakdown voltage	70V
$V_{GS}$	Gate-source voltage	$\pm 20V$
$I_D$	Drain Current	30A
$T_{stg}$	Storage temperature	65 to 150°C
$T_j$	Maximum operating junction temperature	200°C
$R_{\theta j-case}$	Thermal resistance junction-case	Max. 0.4°C/W

**ELECTRICAL CHARACTERISTICS ( $T_{CASE} = 25^{\circ}C$  unless otherwise stated)**

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
<u>PER SIDE</u>						
$BV_{DSS}$	Drain source, breakdown voltage	$V_{GS}=0$	$I_D=100mA$	70	Vdc	
$I_{DSS}$	Zero gate voltage drain current	$V_{DS}=28V$	$V_{GS}=0$	6	mAdc	
$I_{GSS}$	Gate leakage current	$V_{GS}=20V$	$V_{DS}=0$	1	$\mu$ Adc	
$V_{GS(th)}$	Gate threshold voltage	$I_D=10mA$	$V_{DS}=V_{GS}$	7	Vdc	
gfs	Transconductance (300 $\mu$ s pulse)	$V_{DS}=10V$	$I_D=6A$	4.8	Mhos	
<u>TOTAL DEVICE</u>						
$G_{PS}$	Common source power gain	$P_O=200W$		17	dB	
$\eta$	Drain efficiency	$V_{DS}=28V$	$I_{DQ}=2-4A$	50	%	
VSWR	Load mismatch tolerance	$f=200MHz$		20:1		
<u>PER SIDE</u>						
$C_{iss}$	Input capacitance	$V_{DS}=0V$	$V_{GS}=-5V$	$f=1MHz$	360	pF
$C_{oss}$	Output capacitance	$V_{DS}=28V$	$V_{GS}=0$	$f=1MHz$	180	pF
$C_{rss}$	Reverse transfer capacitance	$V_{DS}=28V$	$V_{GS}=0$	$f=1MHz$	15	pF

**DIMENSIONS**

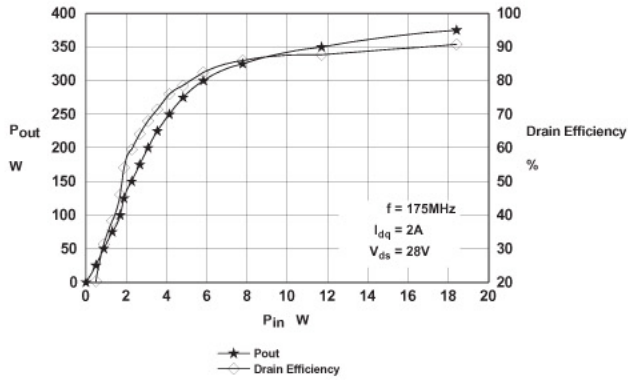


DM	Millimeter	TOL	Inches	TOL
A	19.05	.50	.750	.020
B	10.9	.25	.430	.010
C	45°	.05	45°	5°
D	9.78	.13	.385	.005
E	5.71	.13	.225	.005
F	27.94	.13	1.100	.005
G	1.52R	.13	.060R	.005
H	10.16	.13	.400	.005
I	22.22	MAX	.875	MAX
J	0.13	.02	.005	.001
K	2.72	.13	.107	.005
M	1.65	.13	.065	.005
N	5.08	.50	.200	.020
O	34.04	.13	1.340	.005
P	1.65R	.13	.065R	.005

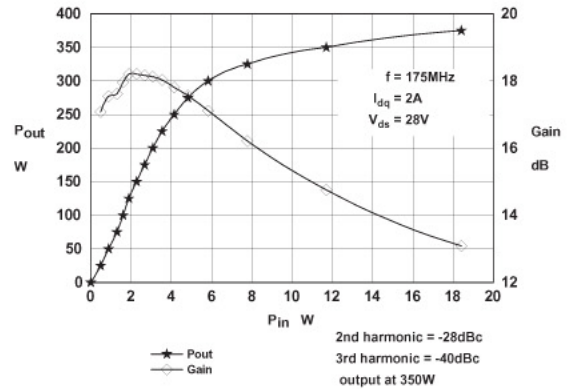
**HAZARDOUS MATERIAL WARNING**

The ceramic portion of the device between leads and metal flange is beryllium oxide. Beryllium oxide dust is highly toxic and care must be taken during handling and mounting to avoid damage to this area. THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.

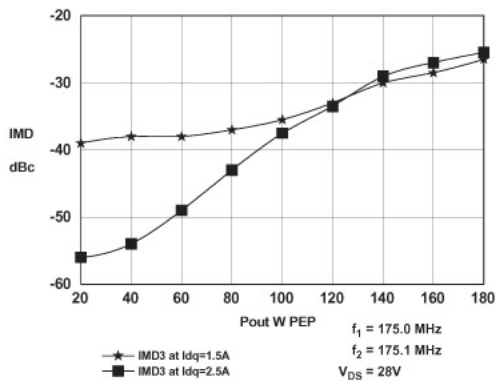
U.S. PATENTS 5,121,176 & 5,179,032  
GLOBAL PATENTS PENDING



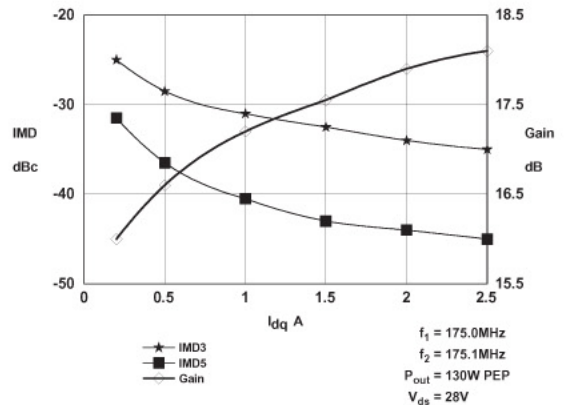
**Figure 1 – Power Output and Efficiency vs. Power Input.**



**Figure 2 – Power Output & Gain vs. Power Input.**

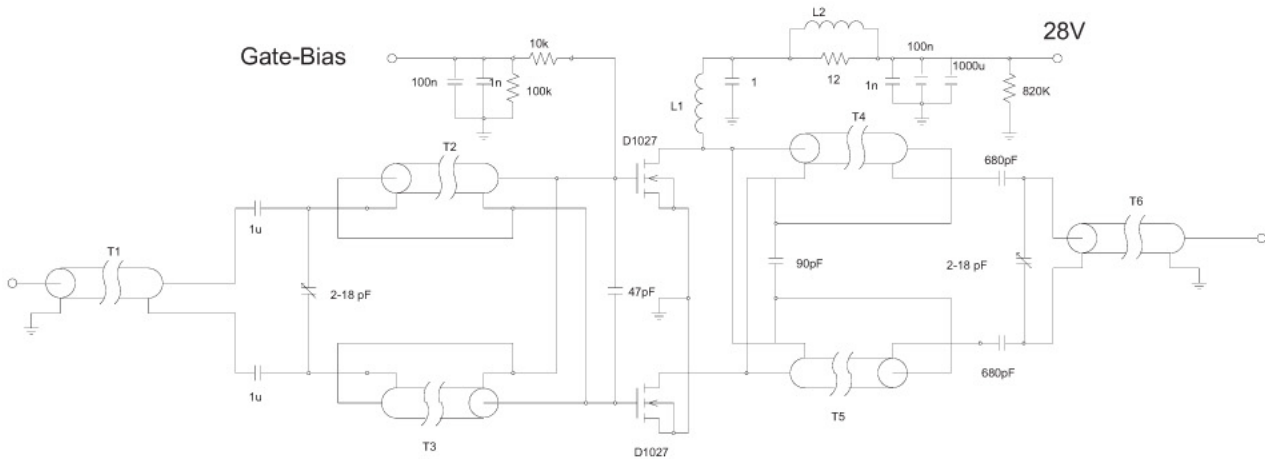


**Figure 3 – IMD vs. Output Power.**



**Figure 4 – IMD & Gain vs.  $I_{dq}$**

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## D1027 175MHz TEST FIXTURE

- T1,2,3 7cm Storm Products EXE18 19/30 S1TW coaxial cable on Siemens B62152A1X1 2-hole core.
- T4,5 14cm Storm Products EXE18 19/30 S1TW coaxial cable.
- T6 11cm Storm Products EXE18 19/30 S1TW coaxial cable
- L1 6 turns 1.2mm dia wire, 5mm internal diameter
- L2 1.5 turns 0.9mm dia wire on Siemens A1 x 1 2 hole core

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