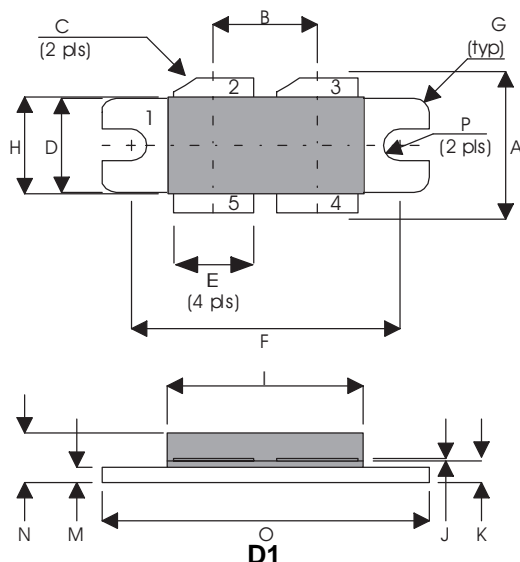


**MECHANICAL DATA**



PIN 1 SOURCE (COMMON)      PIN 2 DRAIN 1  
 PIN 3 DRAIN 2                PIN 4 GATE 2  
 PIN 5 GATE 1

DIM	Millimetres	Tol.	Inches	Tol.
A	15.24	0.50	0.600	0.020
B	10.80	0.13	0.425	0.005
C	45°	5°	45°	5°
D	9.78	0.13	0.385	0.005
E	8.38	0.13	0.330	0.005
F	27.94	0.13	1.100	0.005
G	1.52R	0.13	0.060R	0.005
H	10.16	0.15	0.400	0.006
I	21.84	0.23	0.860	0.009
J	0.10	0.02	0.004	0.001
K	1.96	0.13	0.077	0.005
M	1.02	0.13	0.040	0.005
N	4.45	0.38	0.175	0.015
O	34.04	0.13	1.340	0.005
P	1.63R	0.13	0.064R	0.005

**GOLD METALLISED**  
**MULTI-PURPOSE SILICON**  
**DMOS RF FET**  
**300W – 28V – 175MHz**  
**PUSH-PULL**

**FEATURES**

- SUITABLE FOR BROAD BAND APPLICATIONS
- SIMPLE BIAS CIRCUITS
- ULTRA-LOW THERMAL RESISTANCE
- BeO FREE
- LOW Crss
- HIGH GAIN – 16 dB MINIMUM

**APPLICATIONS**

- VHF/UHF COMMUNICATIONS  
from 1 MHz to 400 MHz

$P_D$	Power Dissipation	875W (438W -A Version)
$BV_{DSS}$	Drain – Source Breakdown Voltage *	70V
$BV_{GSS}$	Gate – Source Breakdown Voltage*	±20V
$I_{D(sat)}$	Drain Current*	30A
$T_{stg}$	Storage Temperature	-65 to 150°C
$T_j$	Maximum Operating Junction Temperature	200°C

\* Per Side

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### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
<b>PER SIDE</b>							
B <sub>V</sub> DSS	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0	I <sub>D</sub> = 100mA	70			V
I <sub>D</sub> DSS	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0			6	mA
I <sub>G</sub> DSS	Gate Leakage Current	V <sub>GS</sub> = 20V	V <sub>DS</sub> = 0			1	μA
V <sub>GS(th)</sub>	Gate Threshold Voltage*	I <sub>D</sub> = 10mA	V <sub>DS</sub> = V <sub>GS</sub>	1		7	V
g <sub>fs</sub>	Forward Transconductance*	V <sub>DS</sub> = 10V	I <sub>D</sub> = 6A	4.8			mhos
V <sub>GS(th)match</sub>	Gate Threshold Voltage Matching Between Sides	I <sub>D</sub> = 10mA	V <sub>DS</sub> = V <sub>GS</sub>			0.1	V
<b>TOTAL DEVICE</b>							
G <sub>PS</sub>	Common Source Power Gain	P <sub>O</sub> = 300W		16			dB
η	Drain Efficiency	V <sub>DS</sub> = 28V	I <sub>DQ</sub> = 2A	60			%
VSWR	Load Mismatch Tolerance	f = 175MHz		20:1			—
<b>PER SIDE</b>							
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = -5V f = 1MHz			360	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0 f = 1MHz			180	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0 f = 1MHz			15	pF

\* Pulse Test: Pulse Duration = 300 μs , Duty Cycle ≤ 2%

### THERMAL DATA

R <sub>THj-case</sub>	Thermal Resistance Junction – Case	Max. 0.2°C / W 0.4 °C / W -A Version
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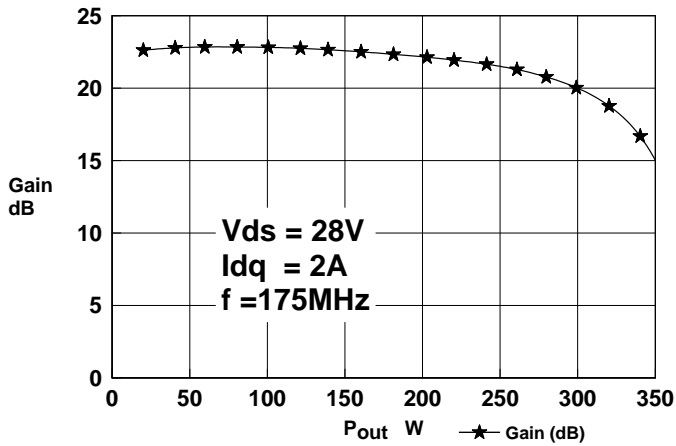


Figure 1 – Gain vs. Power Output.

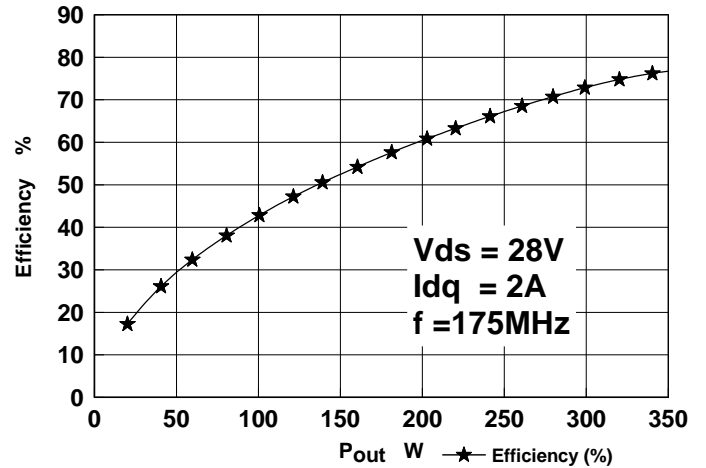


Figure 2 – Efficiency vs. Power Output.

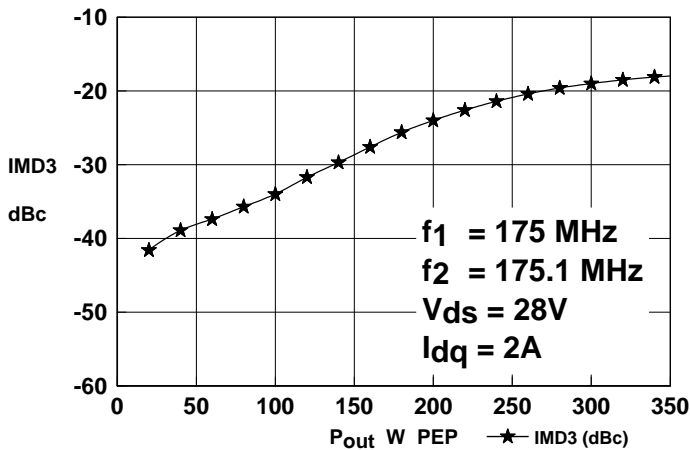
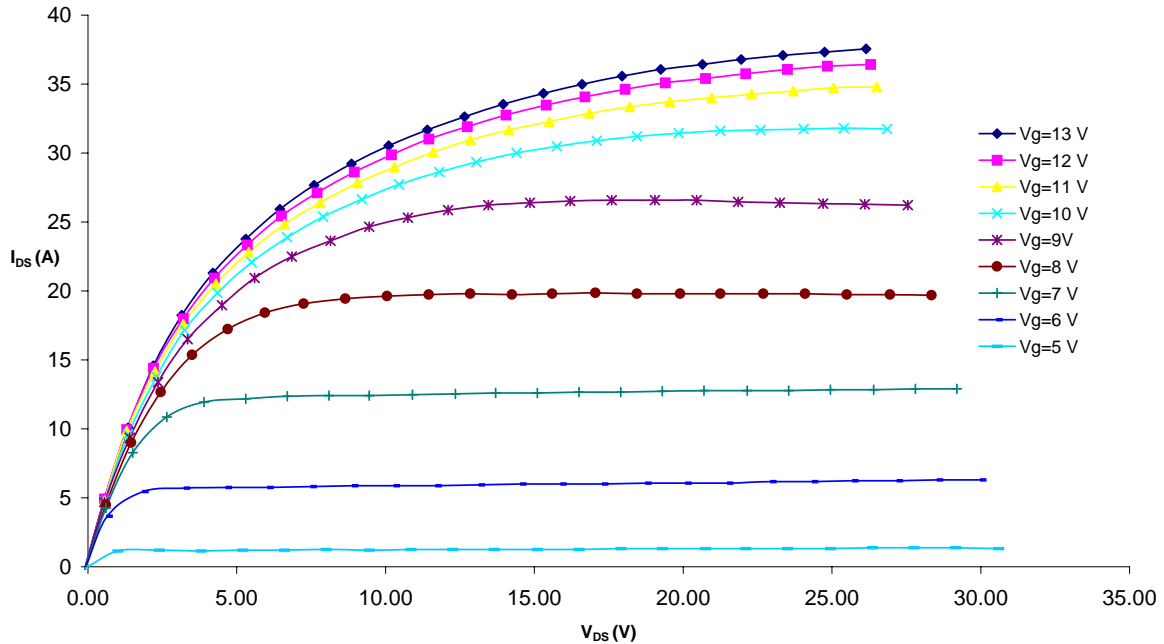
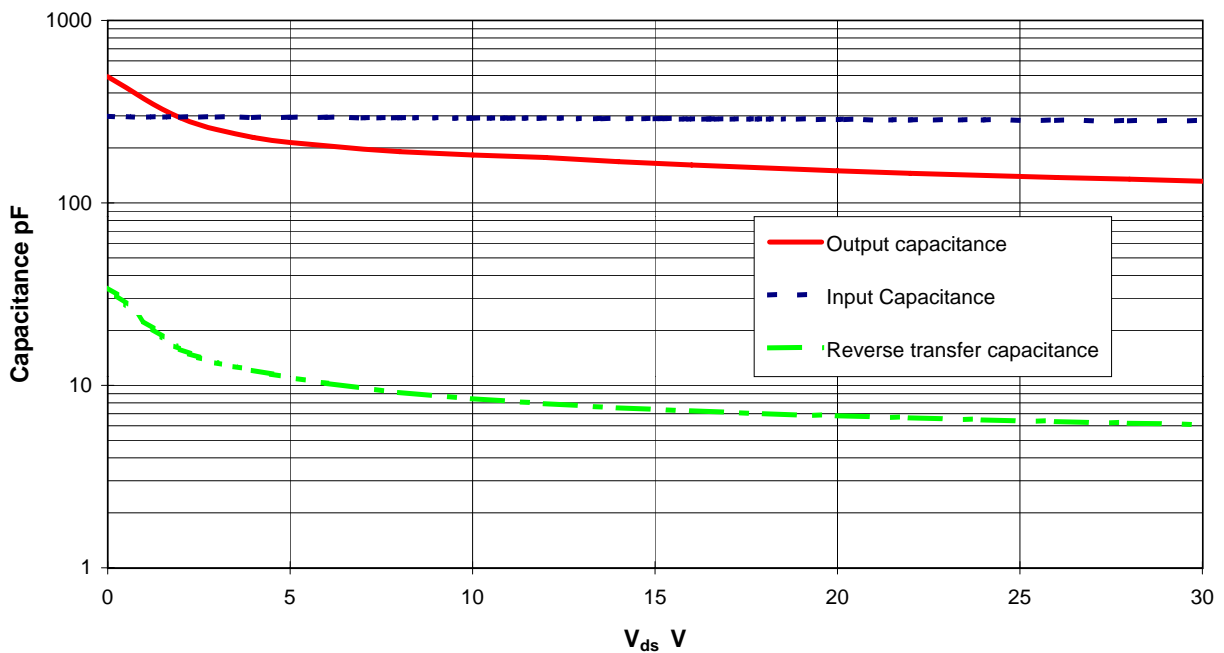


Figure 3 – IMD vs. Power Output

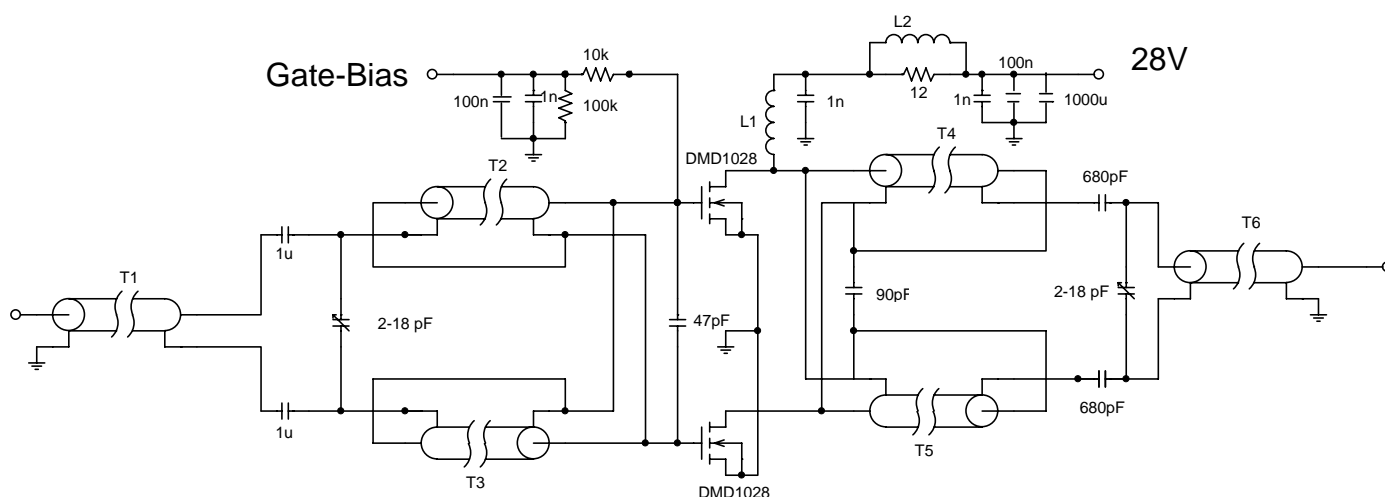


**Figure 4 – Typical IV Characteristics.**



**Figure 5 – Typical CV Characteristics.**

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## DMD1028 175MHz TEST FIXTURE

Substrate 1.6mm PTFE/glass, Er=2.5  
All microstrip lines W=4.4mm

- 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