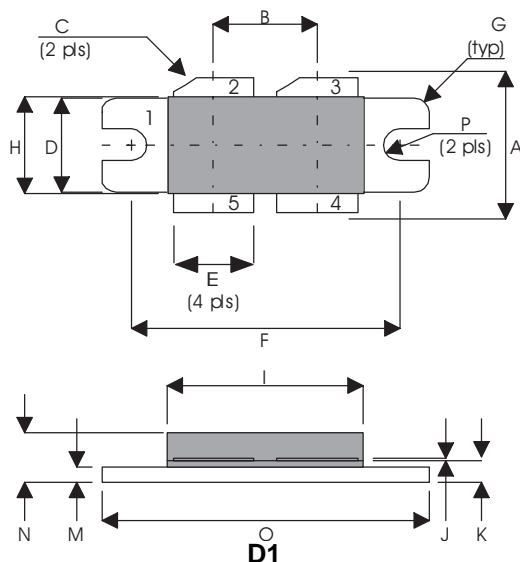


MECHANICAL DATA



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 – 50V – 175MHz
PUSH-PULL

FEATURES

- SUITABLE FOR BROAD BAND APPLICATIONS
- SIMPLE BIAS CIRCUITS
- ULTRA-LOW THERMAL RESISTANCE
- BeO FREE
- LOW Crss
- HIGH GAIN – 20 dB MINIMUM

APPLICATIONS

- VHF/UHF COMMUNICATIONS
from 1 MHz to 175 MHz

P_D	Power Dissipation	875W (438W -A Version)
BV_{DSS}	Drain – Source Breakdown Voltage *	125V
BV_{GSS}	Gate – Source Breakdown Voltage*	±20V
$I_{D(sat)}$	Drain Current*	18A
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_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
PER SIDE							
B _V DSS	Drain–Source Breakdown Voltage	V _{GS} = 0	I _D = 100mA	125			V
I _D DSS	Zero Gate Voltage Drain Current	V _{DS} = 125V	V _{GS} = 0			6	mA
I _G DSS	Gate Leakage Current	V _{GS} = 20V	V _{DS} = 0			6	μA
V _{GS(th)}	Gate Threshold Voltage*	I _D = 10mA	V _{DS} = V _{GS}	1		7	V
g _{fs}	Forward Transconductance*	V _{DS} = 10V	I _D = 3A	4.8			mhos
V _{GS(th)match}	Gate Threshold Voltage Matching Between Sides	I _D = 10mA	V _{DS} = V _{GS}			0.1	V
TOTAL DEVICE							
G _{PS}	Common Source Power Gain	P _O = 300W		20			dB
η	Drain Efficiency	V _{DS} = 50V	I _{DQ} = 1.2A	60			%
VSWR	Load Mismatch Tolerance	f = 175MHz		20:1			—
PER SIDE							
C _{iss}	Input Capacitance	V _{DS} = 50V	V _{GS} = -5V f = 1MHz			360	pF
C _{oss}	Output Capacitance	V _{DS} = 50V	V _{GS} = 0 f = 1MHz			150	pF
C _{rss}	Reverse Transfer Capacitance	V _{DS} = 50V	V _{GS} = 0 f = 1MHz			9	pF

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

THERMAL DATA

R _{THj-case}	Thermal Resistance Junction – Case	Max. 0.2°C / W 0.4 °C / W -A Version
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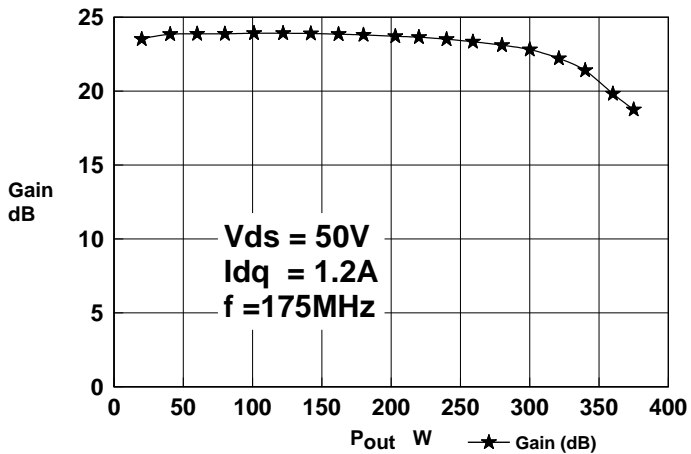


Figure 1 – Gain vs. Power Output.

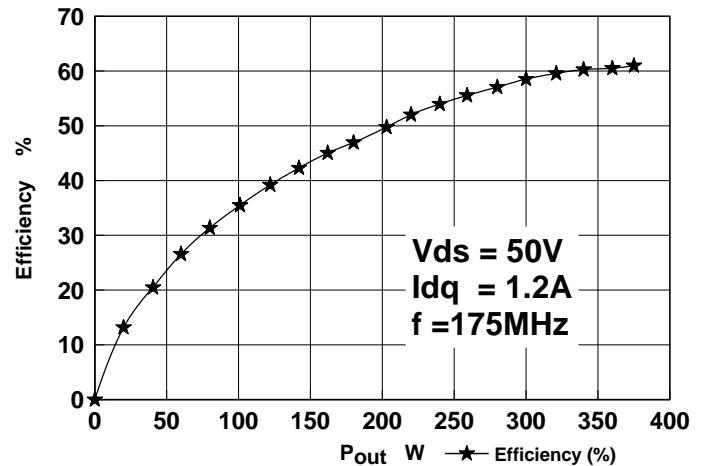


Figure 2 – Efficiency vs. Power Output.

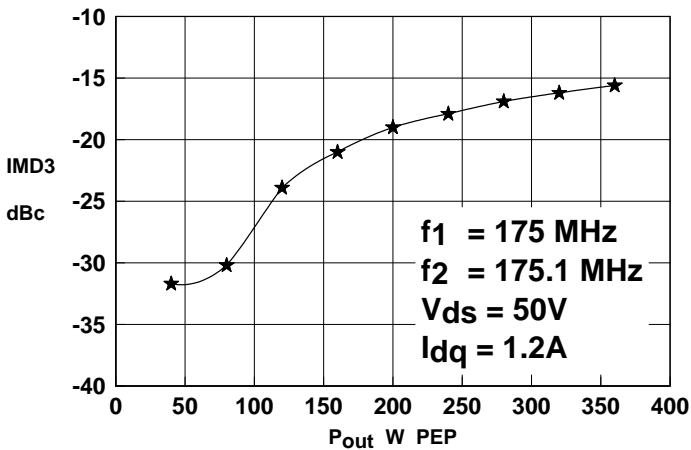


Figure 3 – IMD vs. Power Output

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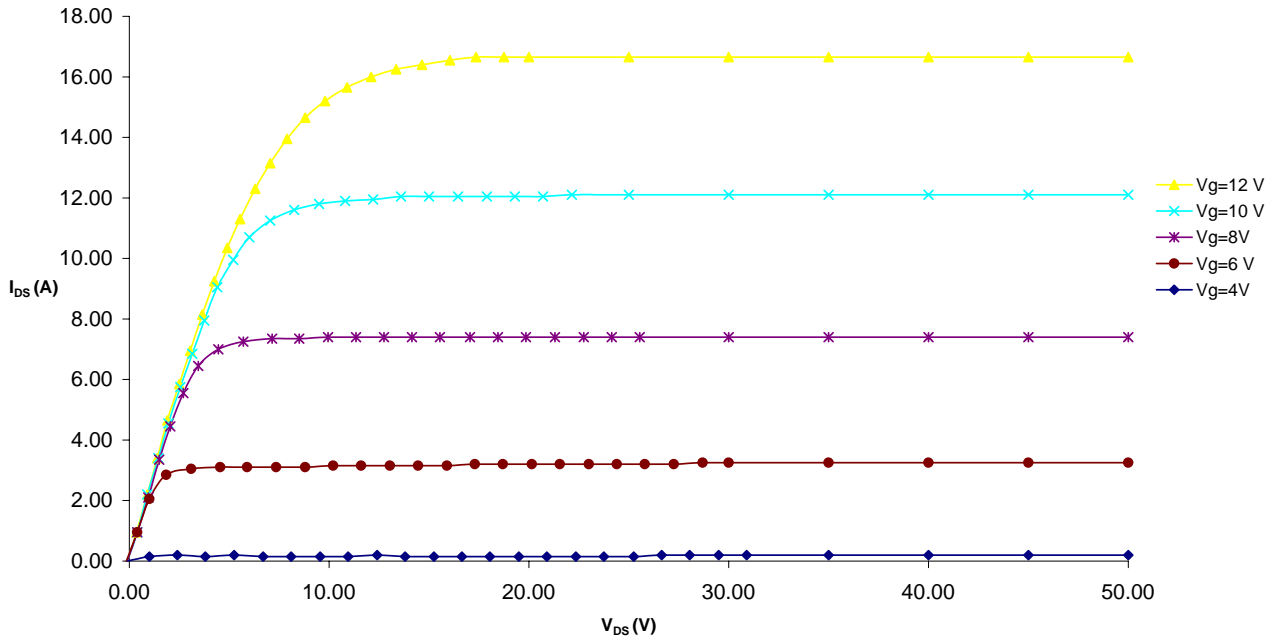


Figure 4 – Typical IV Characteristics.

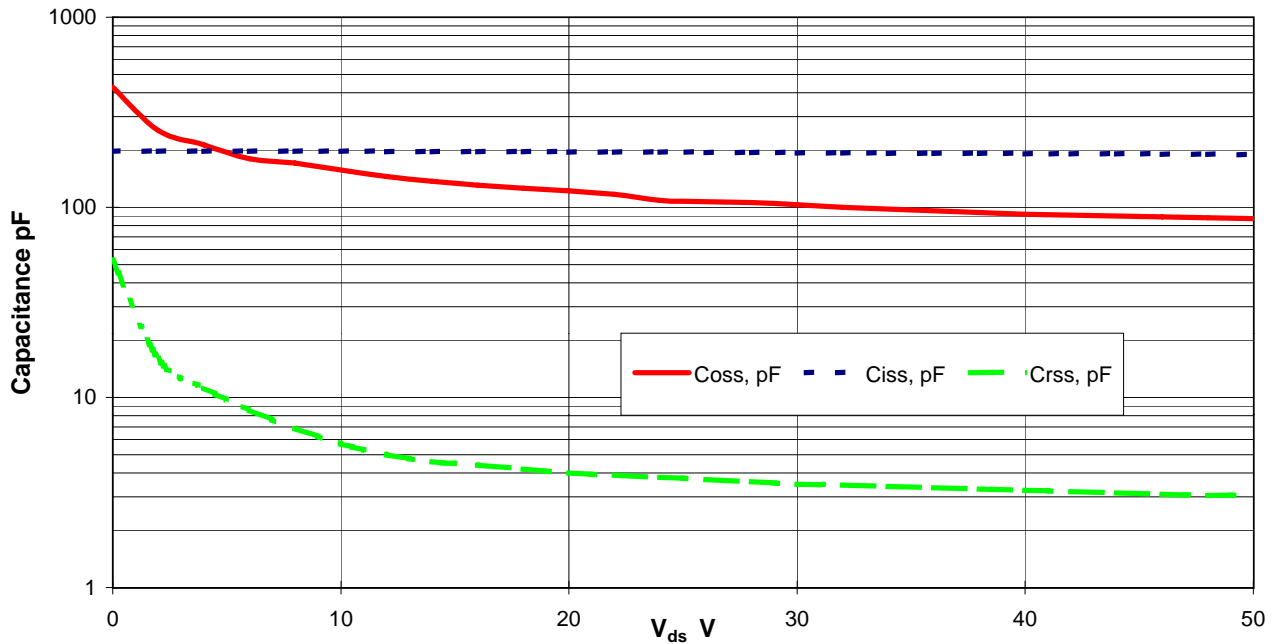
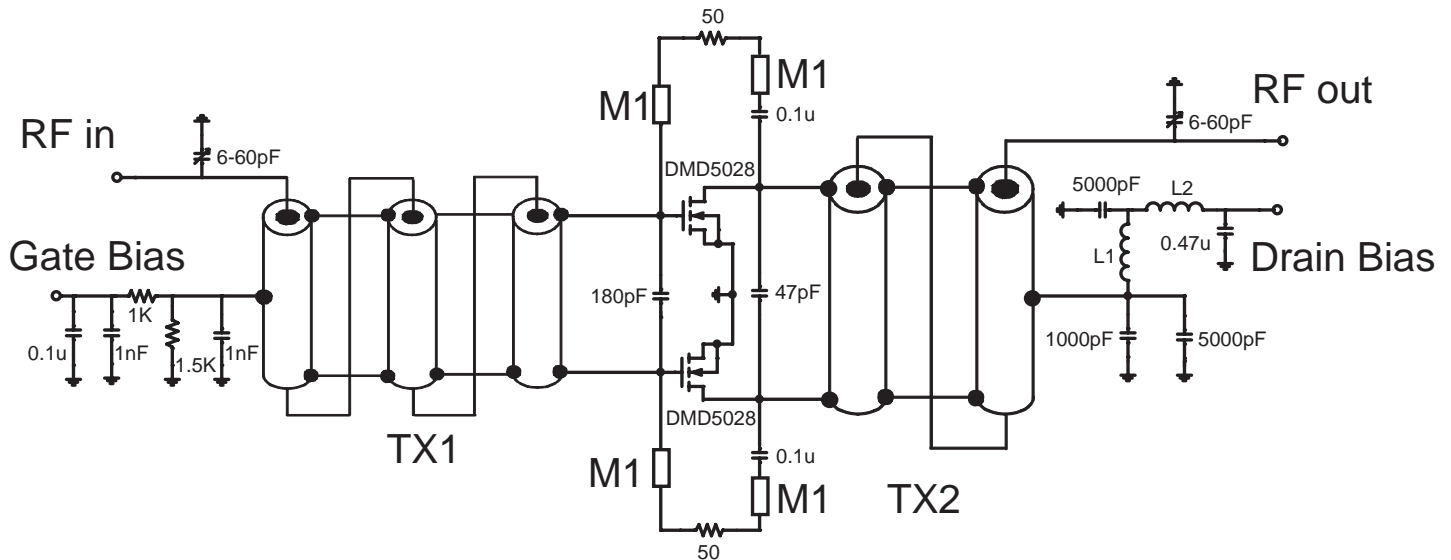


Figure 5 – Typical CV Characteristics.

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DMD5028 175MHz TEST FIXTURE

- TX1** 9:1 transformer. 3 turns of 062-25 semi-rigid coax around 75-26 powdered iron core
- TX2** 4:1 transformer. 2 turns of 090-25 semi-rigid coax around 100-8 powdered iron core
- L1** 10 turns 16awg enamelled wire, 5mm internal diameter
- L2** 0.5 turns 16 awg enamelled wire on A1 x 1 2-hole core
- M1** microstrip line, 20mm long, 1mm wide on 0.062in thick G10 substrate