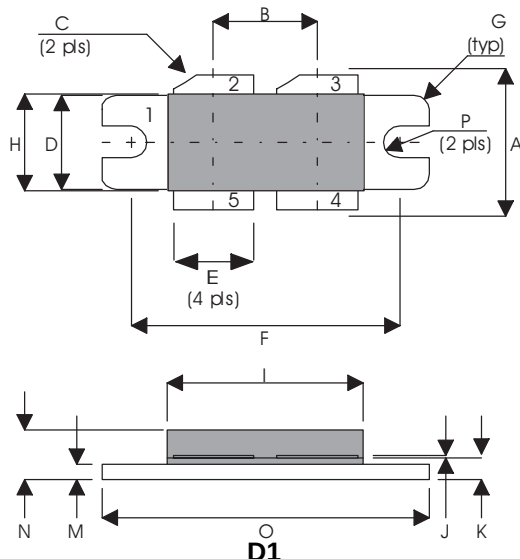


MECHANICAL DATA


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
150W – 28V – 400MHz
PUSH-PULL
FEATURES

- SUITABLE FOR BROAD BAND APPLICATIONS
- SIMPLE BIAS CIRCUITS
- ULTRA-LOW THERMAL RESISTANCE
- BeO FREE
- LOW Crss
- HIGH GAIN – 13 dB MINIMUM

APPLICATIONS

- VHF/UHF COMMUNICATIONS
from 1 MHz to 500 MHz

P_D	Power Dissipation	760W (389W -A Version)
BV_{DSS}	Drain – Source Breakdown Voltage *	70V
BV_{GSS}	Gate – Source Breakdown Voltage*	±20V
$I_{D(sat)}$	Drain Current*	25A
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	70			V
I _D DSS	Zero Gate Voltage Drain Current V _{DS} = 28V V _{GS} = 0			5	mA
I _G DSS	Gate Leakage Current V _{GS} = 20V V _{DS} = 0			1	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 = 5A	4			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 = 150W	13			dB
η	Drain Efficiency V _{DS} = 28V I _{DQ} = 2A	50			%
VSWR	Load Mismatch Tolerance f = 400MHz	20:1			—
PER SIDE					
C _{iss}	Input Capacitance V _{DS} = 28V V _{GS} = –5V f = 1MHz			300	pF
C _{oss}	Output Capacitance V _{DS} = 28V V _{GS} = 0 f = 1MHz			150	pF
C _{rss}	Reverse Transfer Capacitance V _{DS} = 28V V _{GS} = 0 f = 1MHz			10	pF

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

THERMAL DATA

R _{THj-case}	Thermal Resistance Junction – Case	Max. 0.23°C / W 0.45 °C / W -A Version
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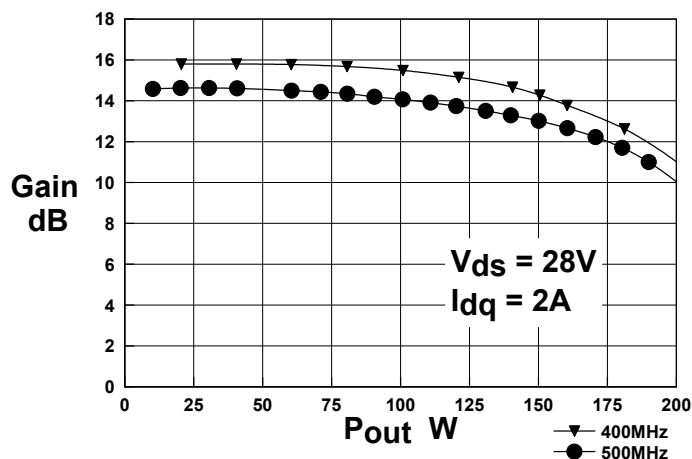


Figure 1- Gain vs. Power Output

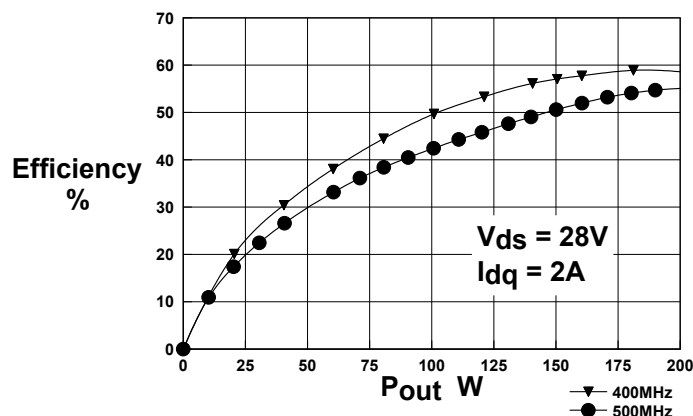


Figure 2 - Efficiency vs Power Output

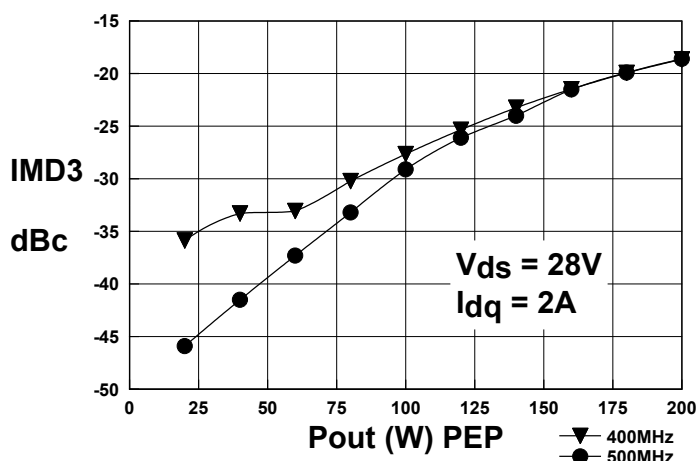


Figure 3 - IMD vs Power Output

Typical S Parameters

!DMD1020UK.s2p
!Vds=28V,Idq=2A
MHZ S MA R 50

Freq	S11		S21		S12		S22	
MHz	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
100	0.926	-167.4	3.56	26.4	0.002	81.3	0.963	-173.6
200	0.981	-176.2	0.88	11.9	0.009	91.7	0.990	-177.8
300	0.990	180.0	0.43	7.9	0.014	89.8	0.995	-179.5
400	0.995	176.7	0.24	7.0	0.020	87.6	0.997	179.0
500	0.996	174.4	0.16	8.6	0.025	86.1	0.998	178.0
600	0.997	171.9	0.11	13.1	0.031	84.3	0.998	177.0
700	0.997	169.9	0.09	18.8	0.035	83.0	0.998	176.2
800	0.998	168.0	0.08	25.7	0.040	81.6	0.998	175.4
900	0.998	165.8	0.07	34.3	0.046	80.1	0.998	174.5
1000	0.998	164.0	0.07	40.9	0.051	78.8	0.998	173.7

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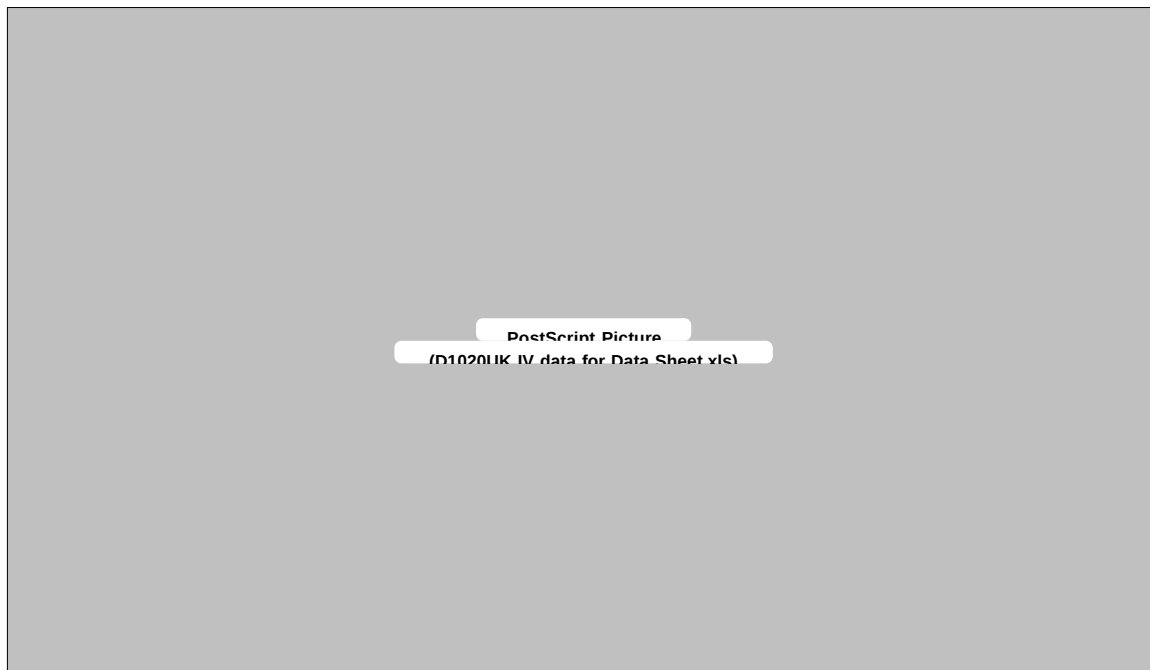


Figure 4 – Typical IV Characteristics.

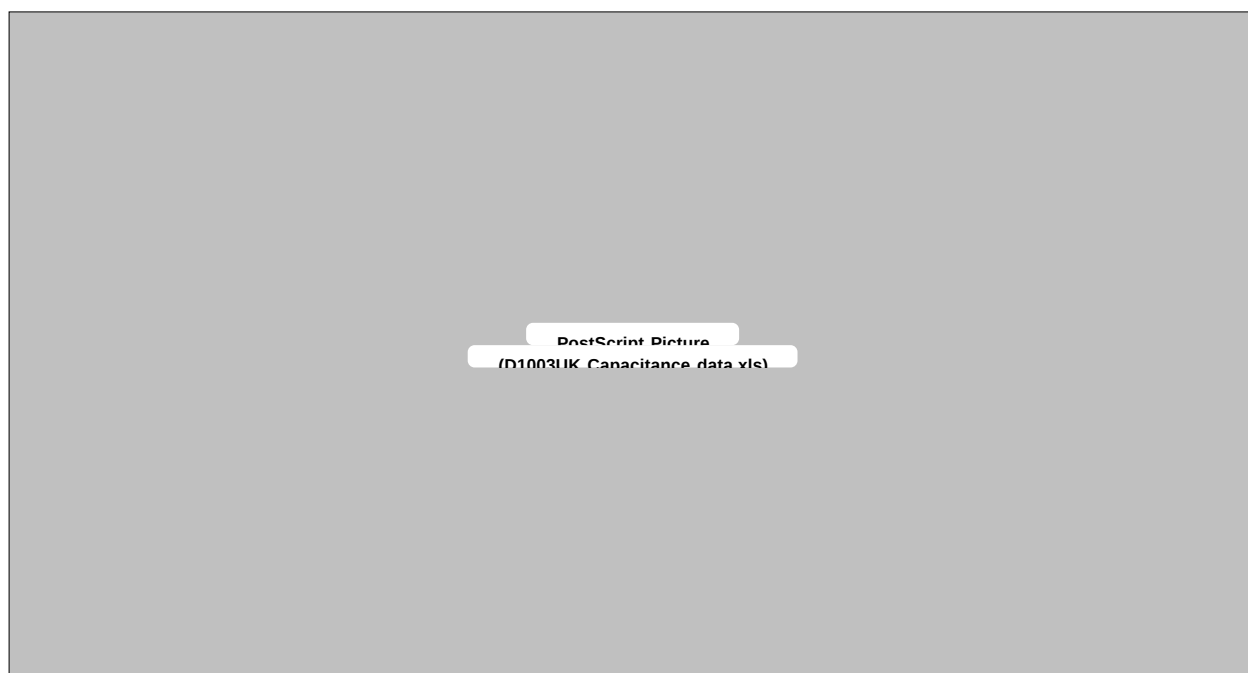
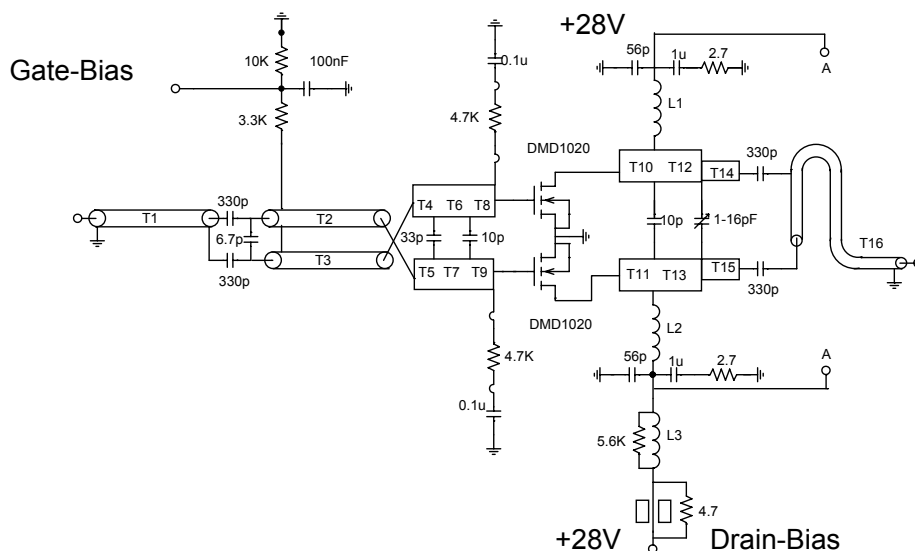


Figure 5 – Typical CV Characteristics.

PostScript Picture
(Schematics)



500MHz TEST FIXTURE

Substrate 0.78mm, Er=3.3

All microstrip lines W=10mm unless otherwise stated

T1 70mm 50 Ohm Coaxial cable

T2,T3 50mm 25 Ohm Coaxial cable

T4, T5 L=3.8mm

T6, T7 L=10.6mm

T8, T9 L=5.6mm

T10, T11, T12,13 L=14mm

L1 = L2 3 turns 1mm diameter enamelled copper wire, 5mm i.d.

T14 7mm wide 6mm long

T15 7mm wide 6mm long

T16 80mm 50 Ohm Coaxial Cable