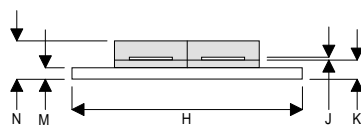
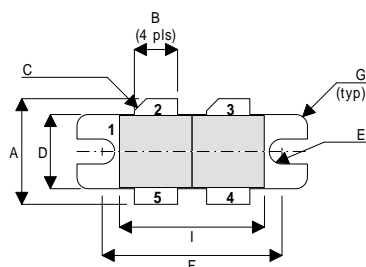


MECHANICAL DATA



DH

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

DIM	mm	Tol.	Inches	Tol.
A	13.97	0.26	0.550	0.010
B	5.72	0.13	0.225	0.005
C	45°	5°	45°	5°
D	9.78	0.13	0.385	0.005
E	1.65R	0.13	0.065R	0.005
F	23.75	0.13	0.935	0.005
G	1.52R	0.13	0.060R	0.005
H	30.48	0.13	1.200	0.005
I	19.17	0.26	0.755	0.010
J	0.13	0.02	0.005	0.001
K	2.54	0.13	0.100	0.005
M	1.52	0.13	0.060	0.005
N	5.08	0.50	0.200	0.020

**GOLD METALLISED
 MULTI-PURPOSE SILICON
 DMOS RF FET
 125W – 28V – 400MHz
 PUSH-PULL**

FEATURES

- SIMPLIFIED AMPLIFIER DESIGN
- SUITABLE FOR BROAD BAND APPLICATIONS
- LOW C_{rss}
- SIMPLE BIAS CIRCUITS
- LOW NOISE
- HIGH GAIN – 13 dB MINIMUM

APPLICATIONS

- HF/VHF/UHF COMMUNICATIONS
 from 1 MHz to 400 MHz

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

P_D	Power Dissipation	350W
BV_{DSS}	Drain – Source Breakdown Voltage *	70V
BV_{GSS}	Gate – Source Breakdown Voltage *	$\pm 20V$
$I_{D(sat)}$	Drain Current *	20A
T_{stg}	Storage Temperature	-65 to $150^{\circ}C$
T_j	Maximum Operating Junction Temperature	$200^{\circ}C$

* 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		4 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 = 4A	3.2	S
TOTAL DEVICE					
G _{PS}	Common Source Power Gain	P _O = 125W		13	dB
η	Drain Efficiency	V _{DS} = 28V	I _{DQ} = 1.6A	50	%
VSWR	Load Mismatch Tolerance	f = 400MHz		20:1	—
PER SIDE					
C _i SS	Input Capacitance	V _{DS} = 28V	V _{GS} = -5V f = 1MHz		240 pF
C _o SS	Output Capacitance	V _{DS} = 28V	V _{GS} = 0 f = 1MHz		120 pF
C _r SS	Reverse Transfer Capacitance	V _{DS} = 28V	V _{GS} = 0 f = 1MHz		10 pF

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

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.

THERMAL DATA

R _{THj-case}	Thermal Resistance Junction – Case	Max. 0.5° C / W
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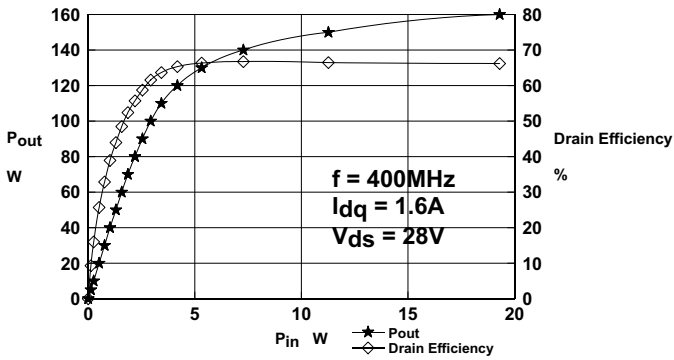


Figure 1

Power Output and Efficiency vs. Input Power

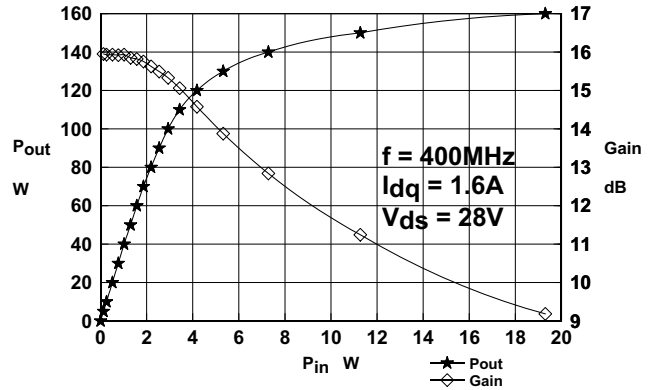


Figure 2

Power Output and Gain vs. Input Power

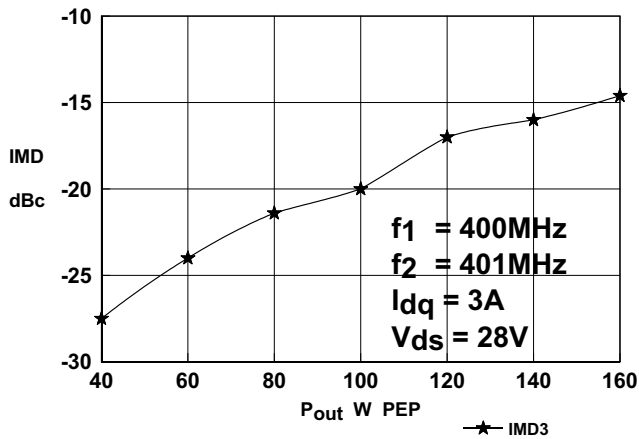


Figure 3

IMD vs. Output Power

D1015UK
OPTIMUM SOURCE AND LOAD IMPEDANCE

Frequency	Z _S	Z _L
MHz	Ω	Ω
400	1.7 - j0.1	2.7 - j1

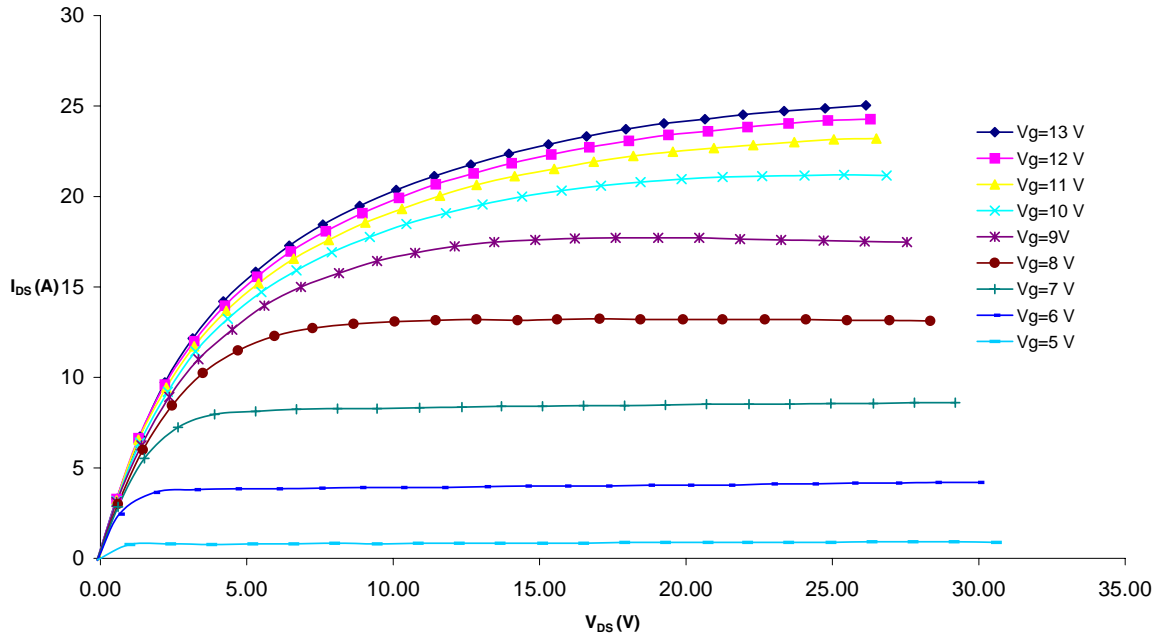


Figure 4 – Typical IV Characteristics.

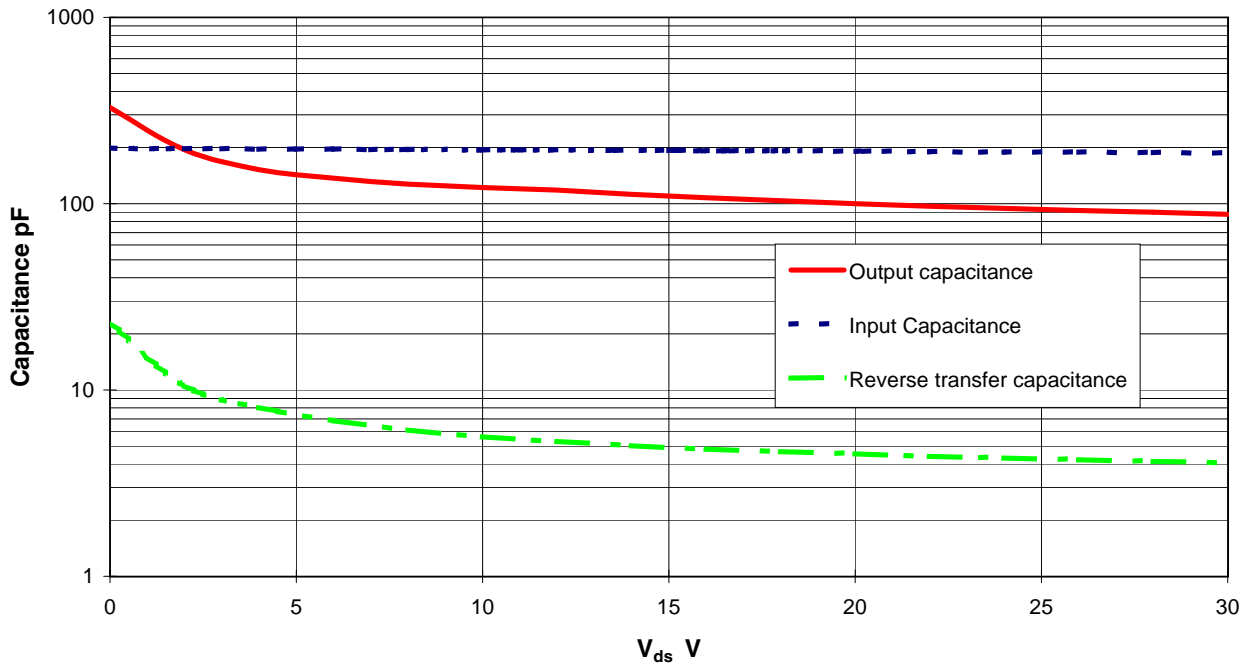
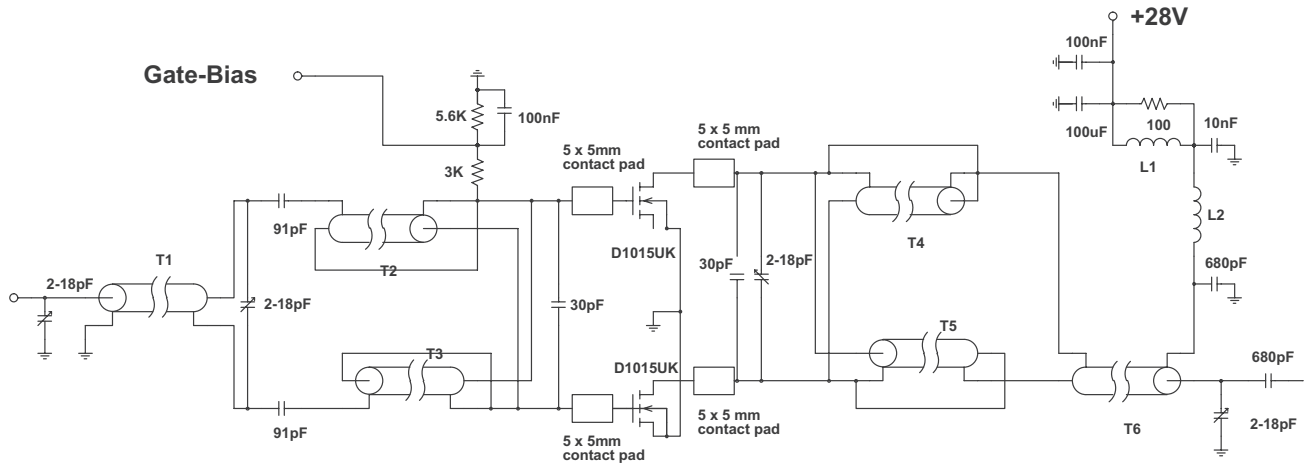


Figure 5 – Typical CV Characteristics.

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D1015UK Test Fixture

- T1 12cm 50 ohm UT85 semi-rigid coax on ferrite core
- T2, 3 7.5cm 15 ohm UT85-15 semi-rigid coax
- T4,5 7cm 15 ohm UT85-15 semi-rigid coax
- T6 11cm 50 ohm UT85 semi-rigid coax on ferrite core

- L1 6.5 turns 25swg enamelled copper wire on Fair-Rite FT50B-43 core
- L2 6.5 turns 25swg enamelled copper wire, internal diameter

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