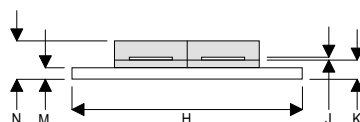
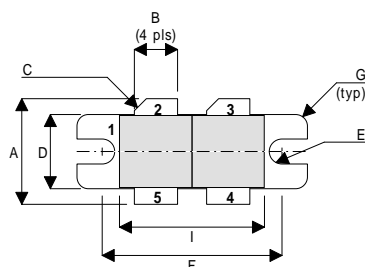


MECHANICAL DATA



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

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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 SS Zero Gate Voltage Drain Current	V _{DS} = 28V V _{GS} = 0			4	mA
I _G SS 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 _{iss} Input Capacitance	V _{DS} = 28V V _{GS} = –5V f = 1MHz			240	pF
C _{oss} Output Capacitance	V _{DS} = 28V V _{GS} = 0 f = 1MHz			120	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%

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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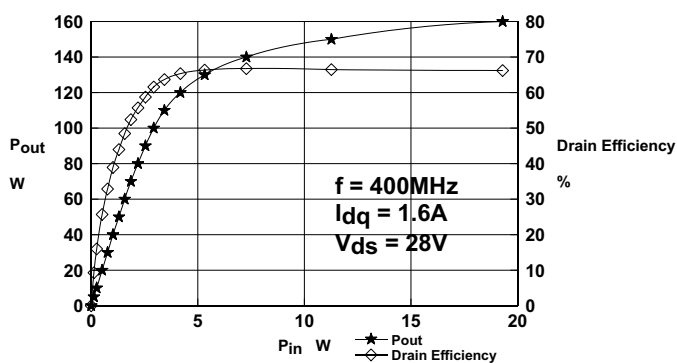


Figure 1

Power Output and Efficiency vs. Input Power

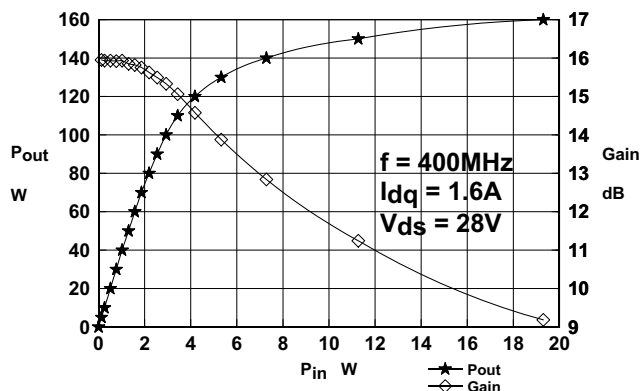


Figure 2

Power Output and Gain vs. Input Power

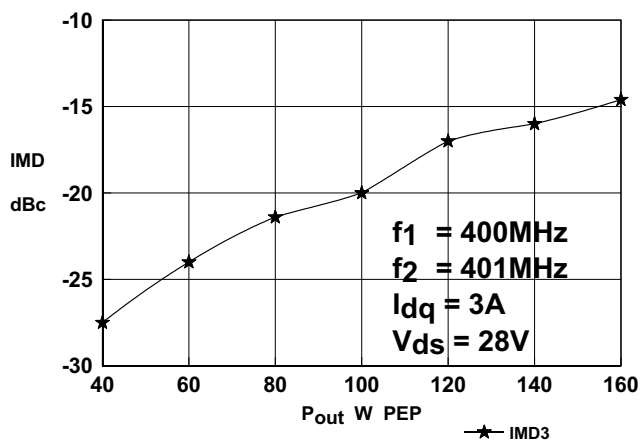


Figure 3

IMD vs. Output Power

D1015UK OPTIMUM SOURCE AND LOAD IMPEDANCE

Frequency	Z_S	Z_L
MHz	Ω	Ω
400	$1.7 - j0.1$	$2.7 - j1$

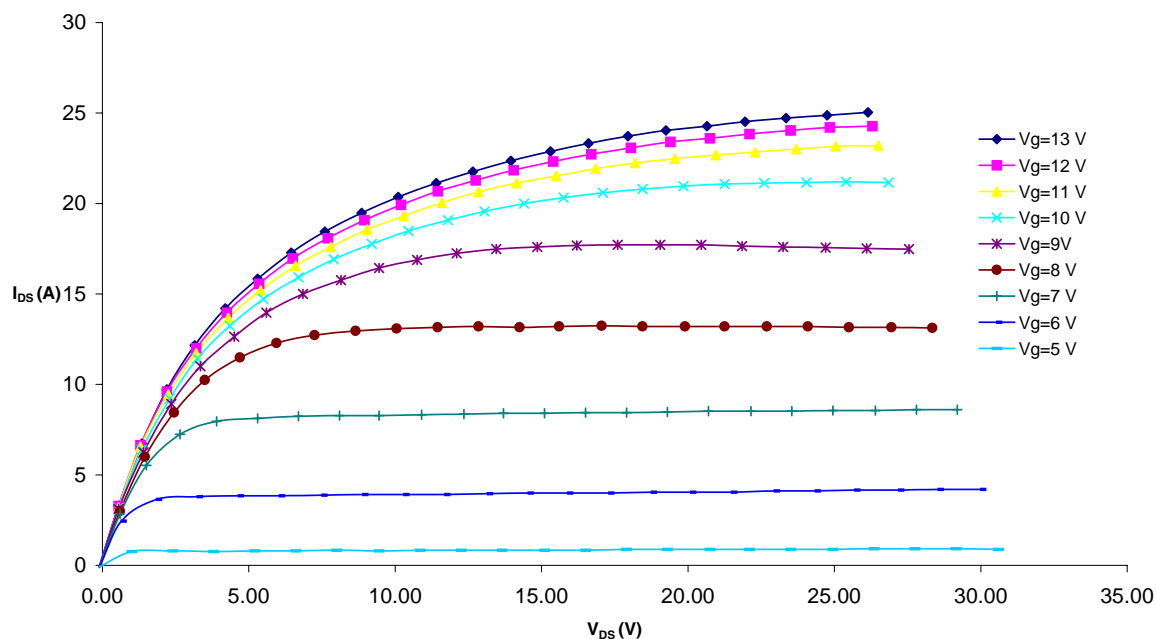


Figure 4 – Typical IV Characteristics.

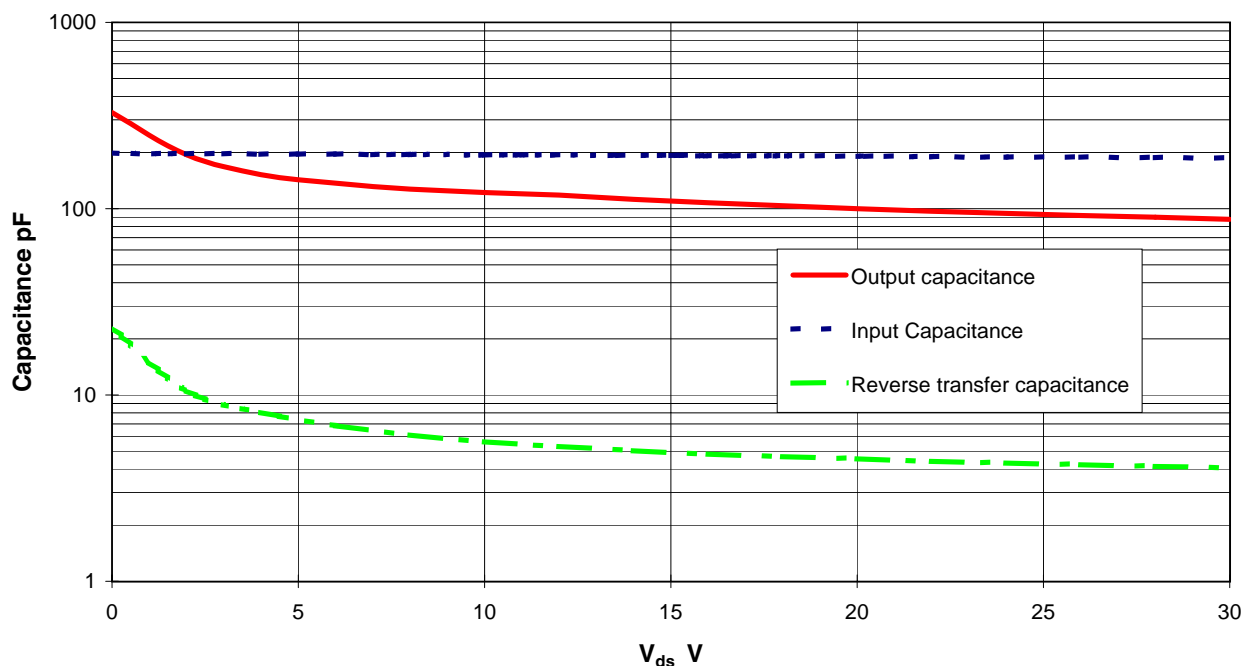
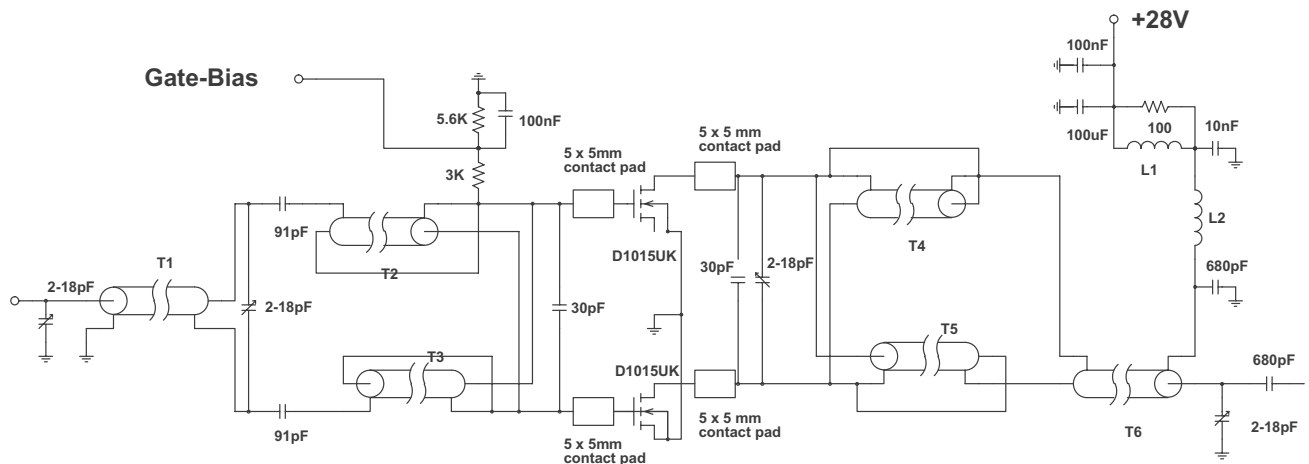


Figure 5 – Typical CV Characteristics.



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