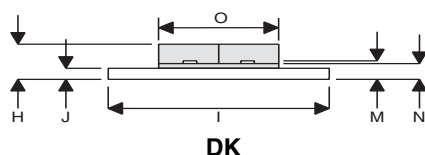
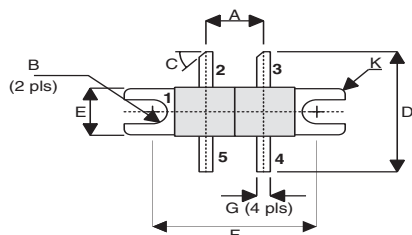


## MECHANICAL DATA



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	6.45	0.13	0.254	0.005
B	1.65R	0.13	0.065R	0.005
C	45°	5°	45°	5°
D	16.51	0.76	0.650	0.03
E	6.47	0.13	0.255	0.005
F	18.41	0.13	0.725	0.005
G	1.52	0.13	0.060	0.005
H	4.82	0.25	0.190	0.010
I	24.76	0.13	0.975	0.005
J	1.52	0.13	0.060	0.005
K	0.81R	0.13	0.032R	0.005
M	0.13	0.02	0.005	0.001
N	2.16	0.13	0.085	0.005

# GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 15W – 28V – 1GHz PUSH-PULL

## FEATURES

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

## APPLICATIONS

- HF/VHF/UHF COMMUNICATIONS  
from DC to 2 GHz

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

$P_D$	Power Dissipation	70W
$BV_{DSS}$	Drain – Source Breakdown Voltage *	65V
$BV_{GSS}$	Gate – Source Breakdown Voltage *	$\pm 20V$
$I_{D(sat)}$	Drain Current *	3A
$T_{stg}$	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** ( $T_{case} = 25^{\circ}\text{C}$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>PER SIDE</b>					
$BV_{DSS}$ Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 10\text{mA}$	65			V
$I_{DSS}$ Zero Gate Voltage Drain Current	$V_{DS} = 28\text{V}$ $V_{GS} = 0$			3	mA
$I_{GSS}$ Gate Leakage Current	$V_{GS} = 20\text{V}$ $V_{DS} = 0$			1	$\mu\text{A}$
$V_{GS(th)}$ Gate Threshold Voltage *	$I_D = 10\text{mA}$ $V_{DS} = V_{GS}$	1		7	V
$g_{fs}$ Forward Transconductance *	$V_{DS} = 10\text{V}$ $I_D = 0.6\text{A}$	0.54			S
<b>TOTAL DEVICE</b>					
$G_{PS}$ Common Source Power Gain	$P_O = 15\text{W}$	13			dB
$\eta$ Drain Efficiency	$V_{DS} = 28\text{V}$ $I_{DQ} = 0.6\text{A}$	40			%
VSWR Load Mismatch Tolerance	$f = 1\text{GHz}$	20:1			—
<b>PER SIDE</b>					
$C_{iss}$ Input Capacitance	$V_{DS} = 0$ $V_{GS} = -5\text{V}$ $f = 1\text{MHz}$			36	pF
$C_{oss}$ Output Capacitance	$V_{DS} = 28\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$			18	pF
$C_{rss}$ Reverse Transfer Capacitance	$V_{DS} = 28\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$			1.5	pF

\* Pulse Test: Pulse Duration = 300  $\mu\text{s}$  , Duty Cycle  $\leq 2\%$

**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. $2.5^{\circ}\text{C} / \text{W}$
----------------	------------------------------------	---------------------------------------

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.

**Semelab plc.** Telephone +44(0)1455 556565. Fax +44(0)1455 552612.  
E-mail: [sales@semelab.co.uk](mailto:sales@semelab.co.uk) Website: <http://www.semelab.co.uk>

Document 9358  
Issue 01

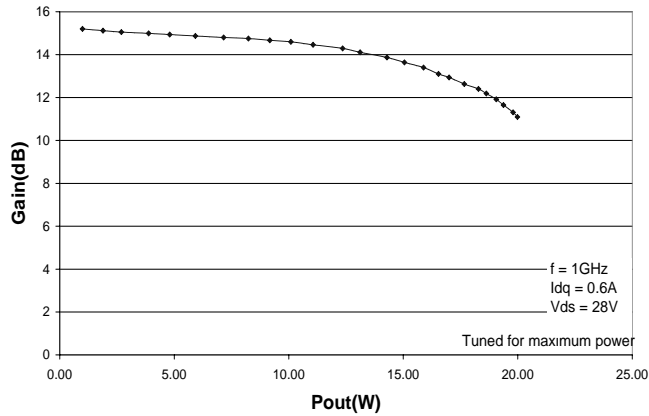


Figure 1  
Gain vs. Output Power

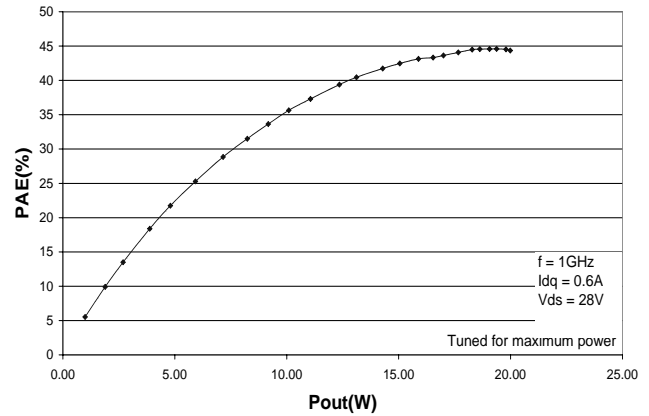


Figure 2  
Power Added Efficiency vs. Output Power

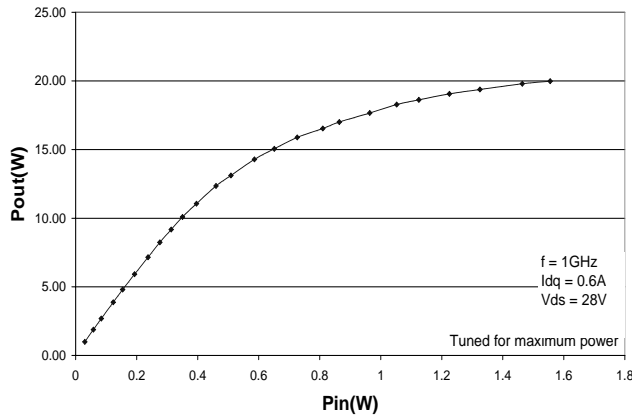


Figure 3  
Output Power vs. Input Power

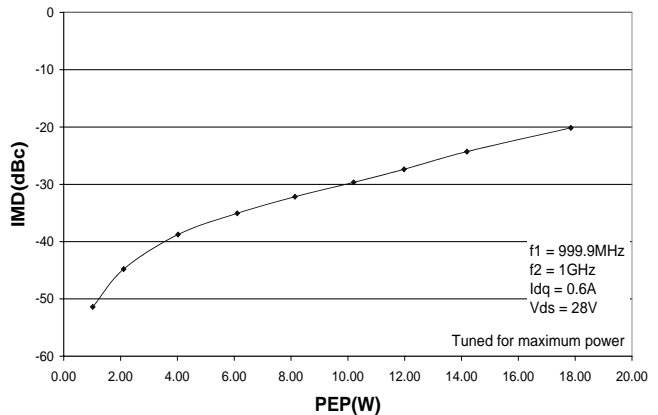
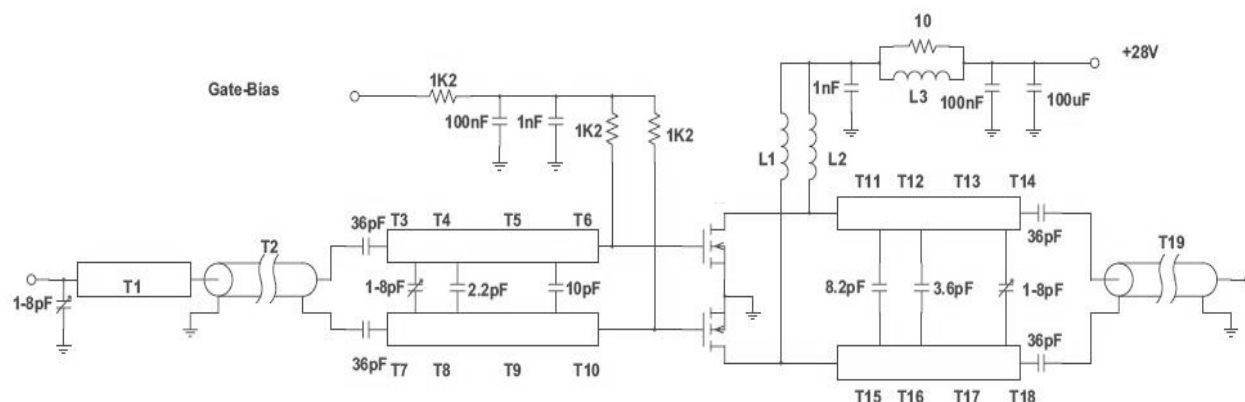


Figure 4  
IMD3 vs. PEP



## 1000MHz TEST FIXTURE

Substrate 0.8mm thick PTFE/glass

All microstrip lines  $W = 2.7\text{mm}$

T1	23 mm
T2, T19	50mm 50 OHM UT 34 semi-rigid coax
T3, T7	6mm
T4, T8	8mm
T5, T9	15mm
T6, T10	9mm
T11, T15	8mm
T12, T16	7mm
T13, T17	11mm
T14, T18	5mm

L1, L2 6 turns of 24swg enamelled copper wire, 3mm i.d.

L3 1.5 turns of 24swg enamelled copper wire on Siemens B62152-a7x 2 hole core

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TT Electronics:](#)

[D2006UK](#)