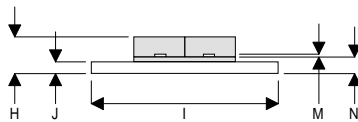
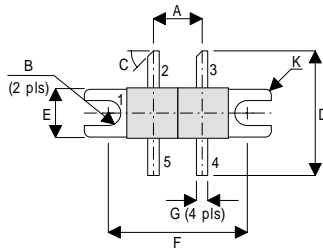


MECHANICAL DATA

**GOLD METALLISED  
MULTI-PURPOSE SILICON  
DMOS RF FET  
10W – 28V – 1GHz  
PUSH-PULL**



DK

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

FEATURES

- SIMPLIFIED AMPLIFIER DESIGN
- SUITABLE FOR BROAD BAND APPLICATIONS
- VERY LOW  $C_{rss}$
- SIMPLE BIAS CIRCUITS
- LOW NOISE
- HIGH GAIN – 10 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	58W
$BV_{DSS}$	Drain – Source Breakdown Voltage *	65V
$BV_{GSS}$	Gate – Source Breakdown Voltage *	$\pm 20V$
$I_{D(sat)}$	Drain Current *	2A
$T_{stg}$	Storage Temperature	$-65$ to $150^{\circ}C$
$T_j$	Maximum Operating Junction Temperature	$200^{\circ}C$

\* Per Side

## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
<b>PER SIDE</b>						
B <sub>V</sub> DSS	Drain–Source Breakdown Voltage	V <sub>GS</sub> = 0	I <sub>D</sub> = 10mA	65	V	
I <sub>D</sub> DSS	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0	0.4	mA	
I <sub>G</sub> DSS	Gate Leakage Current	V <sub>GS</sub> = 20V	V <sub>DS</sub> = 0	1	μA	
V <sub>GS(th)</sub>	Gate Threshold Voltage *	I <sub>D</sub> = 10mA	V <sub>DS</sub> = V <sub>GS</sub>	1	7	V
g <sub>fs</sub>	Forward Transconductance *	V <sub>DS</sub> = 10V	I <sub>D</sub> = 0.4A	0.36	S	
<b>TOTAL DEVICE</b>						
G <sub>PS</sub>	Common Source Power Gain	P <sub>O</sub> = 10W		10	dB	
η	Drain Efficiency	V <sub>DS</sub> = 28V	I <sub>DQ</sub> = 0.4A	40	%	
V <sub>SWR</sub>	Load Mismatch Tolerance	f = 1GHz		20:1	—	
<b>PER SIDE</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = 0V	V <sub>GS</sub> = -5V f = 1MHz		24	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0 f = 1MHz		12	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0 f = 1MHz		1	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 <sub>THj-case</sub>	Thermal Resistance Junction – Case	Max. 3.0°C / W
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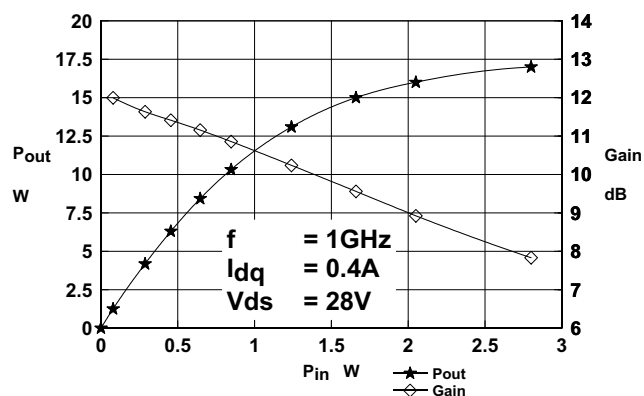


Figure 1

Output Power and Gain vs. Input Power

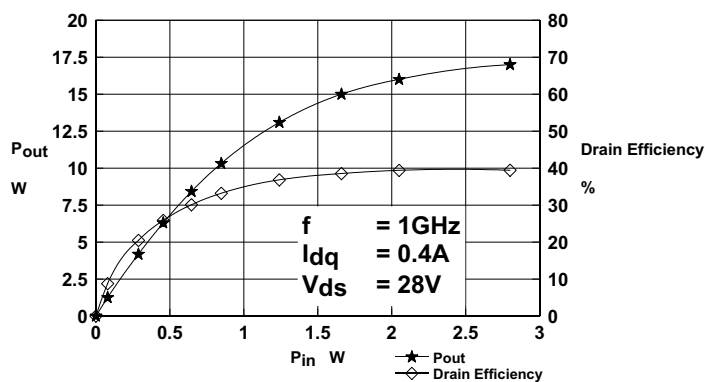


Figure 2

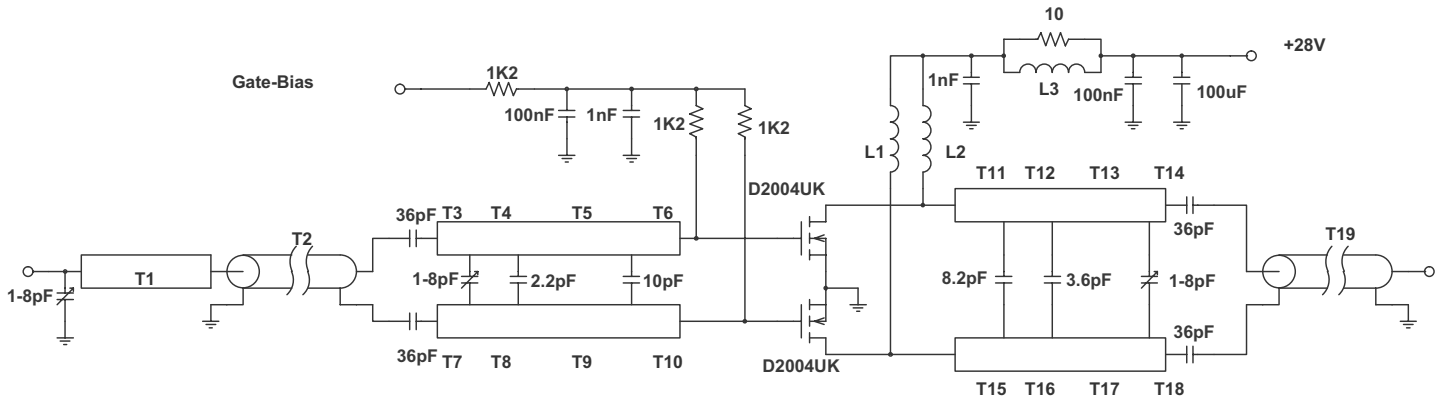
Output Power and Efficiency vs. Input Power.

OPTIMUM SOURCE AND LOAD IMPEDANCE

Frequency MHz	Z <sub>S</sub> Ω	Z <sub>L</sub> Ω
1000MHZ	2.4 - j2.5	5 + j1

N.B.

Impedances measured terminal to terminal.



## 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