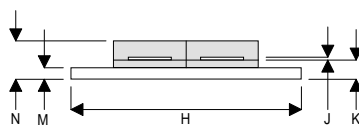
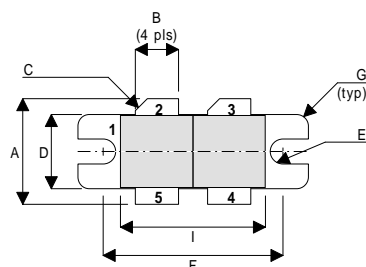


MECHANICAL DATA



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 *	±20V
$I_{D(sat)}$	Drain Current *	20A
$T_{stg}$	Storage Temperature	-65 to 150°C
$T_j$	Maximum Operating Junction Temperature	200°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> = 100mA	70	V
I <sub>D</sub> DSS	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 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	V
g <sub>fs</sub>	Forward Transconductance*	V <sub>DS</sub> = 10V	I <sub>D</sub> = 4A	3.2	S
<b>TOTAL DEVICE</b>					
G <sub>PS</sub>	Common Source Power Gain	P <sub>O</sub> = 125W		13	dB
η	Drain Efficiency	V <sub>DS</sub> = 28V	I <sub>DQ</sub> = 1.6A	50	%
VSWR	Load Mismatch Tolerance	f = 500MHz		20:1	—
<b>PER SIDE</b>					
C <sub>i</sub> SS	Input Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = -5V f = 1MHz		240 pF
C <sub>o</sub> SS	Output Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0 f = 1MHz		120 pF
C <sub>r</sub> SS	Reverse Transfer Capacitance	V <sub>DS</sub> = 28V	V <sub>GS</sub> = 0 f = 1MHz		10 pF

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

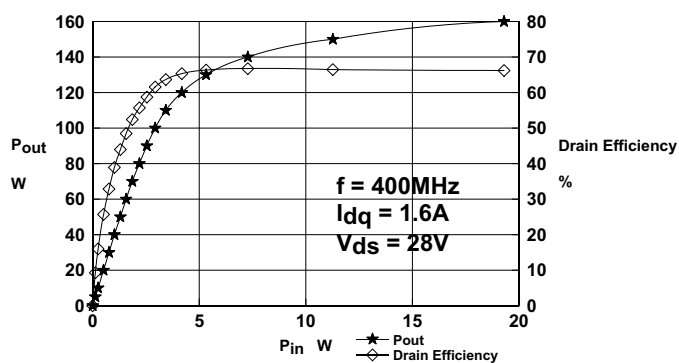
## HAZARDOUS MATERIAL WARNING

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.

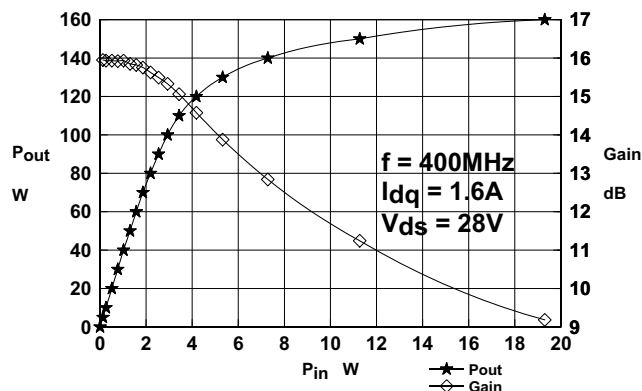
**THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.**

## THERMAL DATA

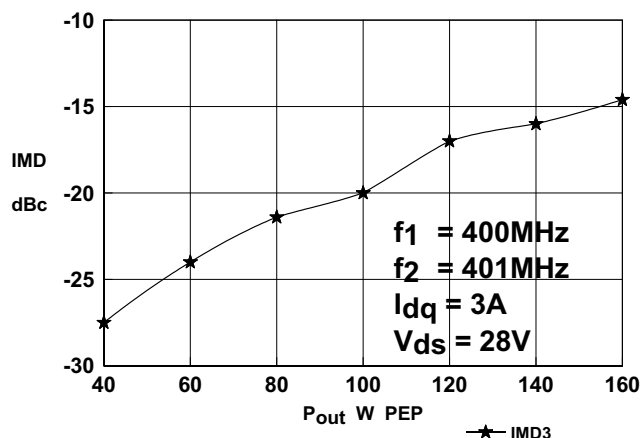
R <sub>THj-case</sub>	Thermal Resistance Junction – Case	Max. 0.5°C / W
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**Figure 1**  
Power Output and Efficiency vs. Input Power



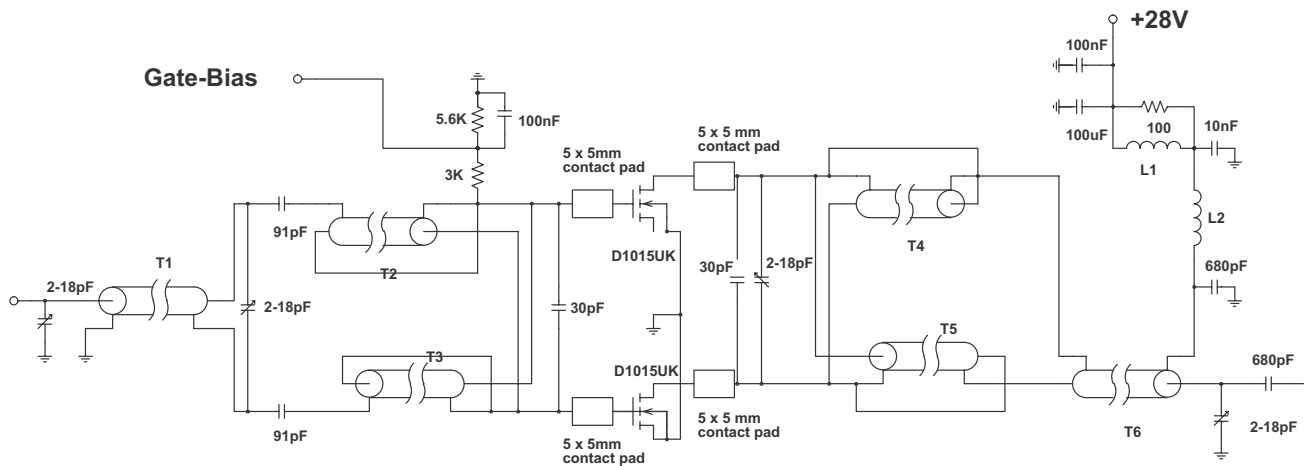
**Figure 2**  
Power Output and Gain vs. Input Power



**Figure 3**  
Power Output and Gain vs. Input Power

### D1015UK OPTIMUM SOURCE AND LOAD IMPEDANCE

Frequency	Z <sub>S</sub>	Z <sub>L</sub>
MHz	Ω	Ω
400	1.7 - j0.1	2.7 - j1



### 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