



**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$ Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 100mA$	70			V
$I_{DSS}$ Zero Gate Voltage Drain Current	$V_{DS} = 28V$ $V_{GS} = 0$			1	mA
$I_{GSS}$ Gate Leakage Current	$V_{GS} = 20V$ $V_{DS} = 0$			1	$\mu A$
$V_{GS(th)}$ Gate Threshold Voltage*	$I_D = 10mA$ $V_{DS} = V_{GS}$	1		7	V
$g_{fs}$ Forward Transconductance*	$V_{DS} = 10V$ $I_D = 1A$	0.8			S
$G_{PS}$ Common Source Power Gain	$P_O = 20W$	13			dB
$\eta$ Drain Efficiency	$V_{DS} = 28V$ $I_{DQ} = 0.2A$	50			%
VSWR Load Mismatch Tolerance	$f = 500MHz$	20:1			—
$C_{iss}$ Input Capacitance	$V_{DS} = 28V$ $V_{GS} = -5V$ $f = 1MHz$			60	pF
$C_{oss}$ Output Capacitance	$V_{DS} = 28V$ $V_{GS} = 0$ $f = 1MHz$			30	pF
$C_{rss}$ Reverse Transfer Capacitance	$V_{DS} = 28V$ $V_{GS} = 0$ $f = 1MHz$			2.5	pF

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

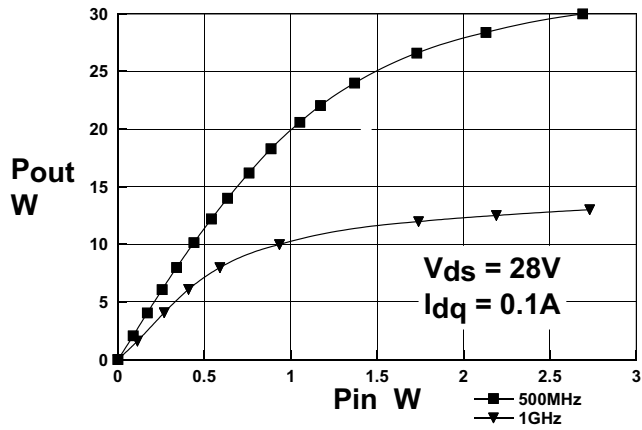
**HAZARDOUS MATERIAL WARNING**

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.

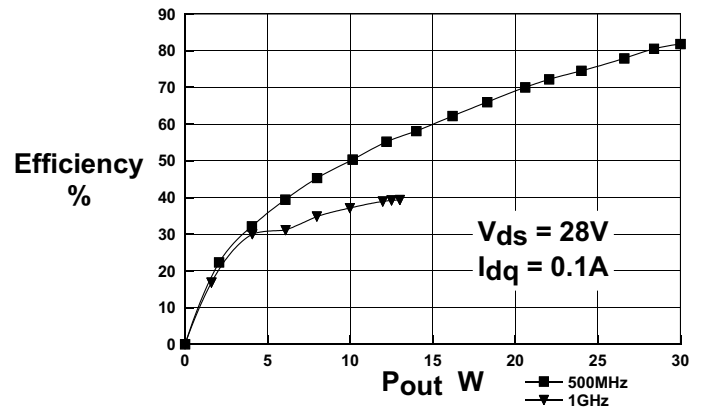
**THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.**

**THERMAL DATA**

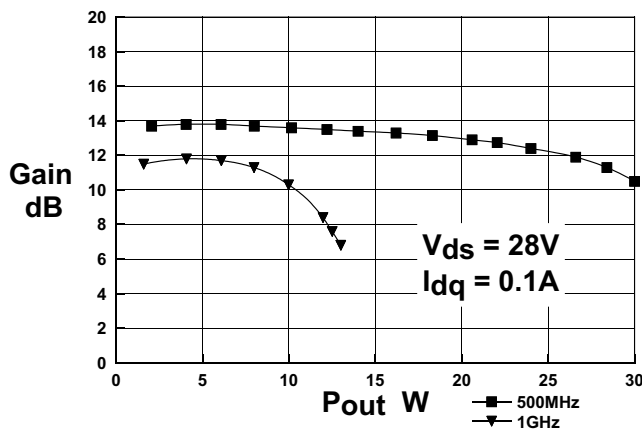
$R_{THj-case}$	Thermal Resistance Junction – Case	Max. 3.5°C / W
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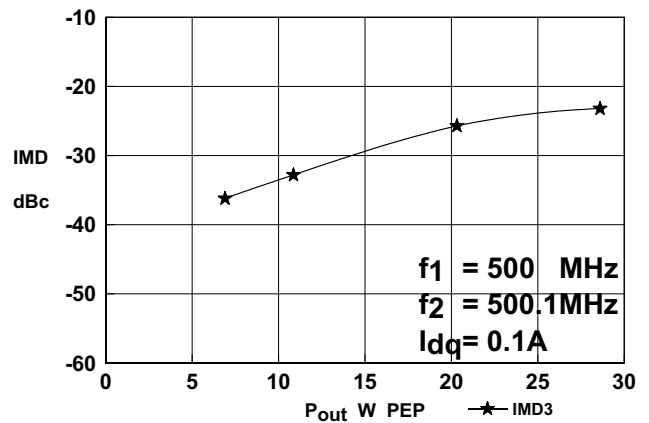
**Figure 1**  
Power Output vs. Input Power



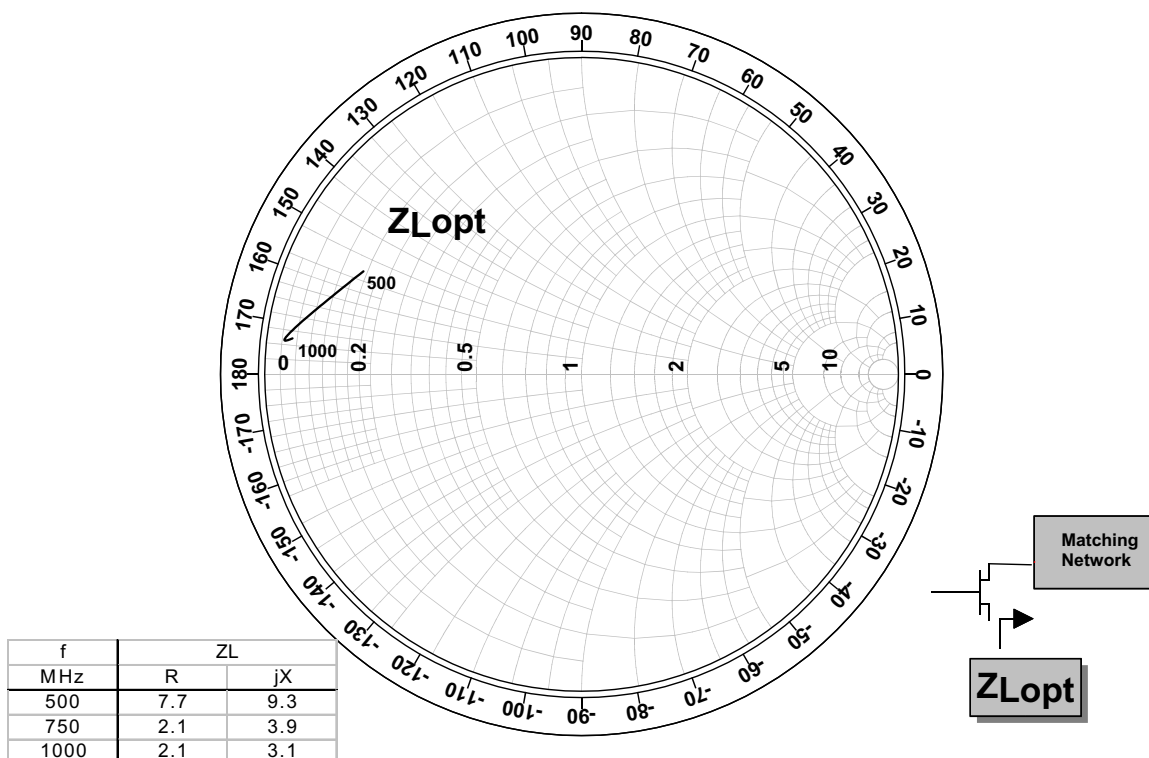
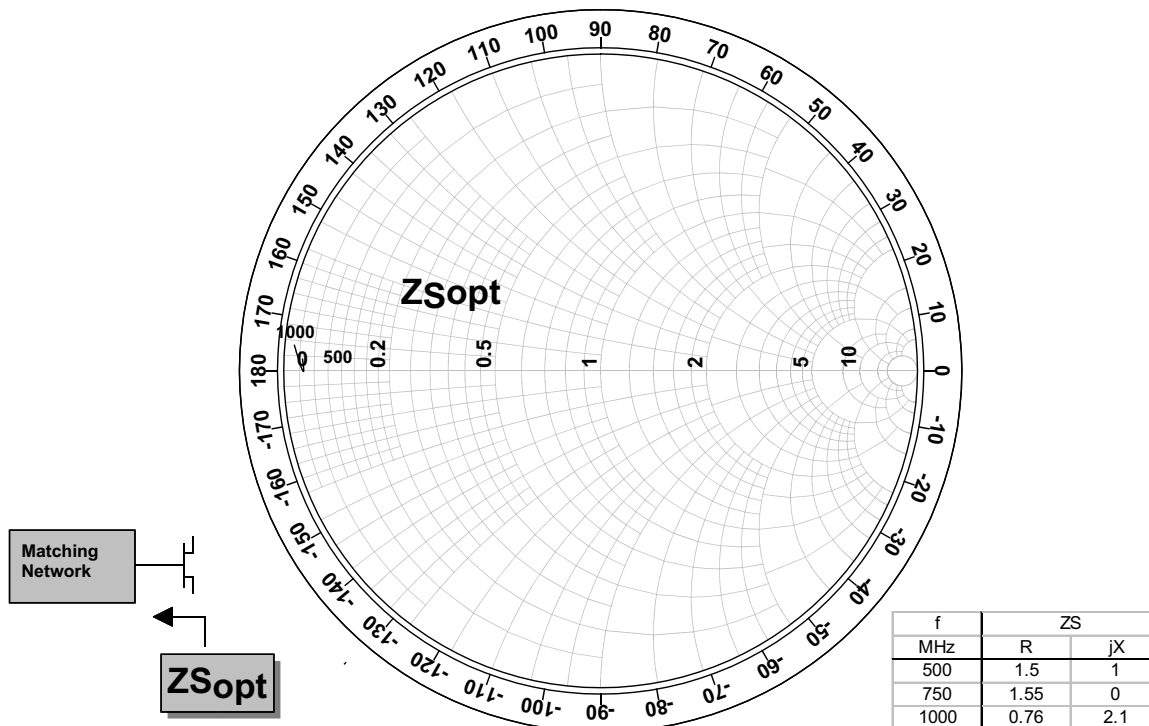
**Figure 2**  
Efficiency vs. Output Power

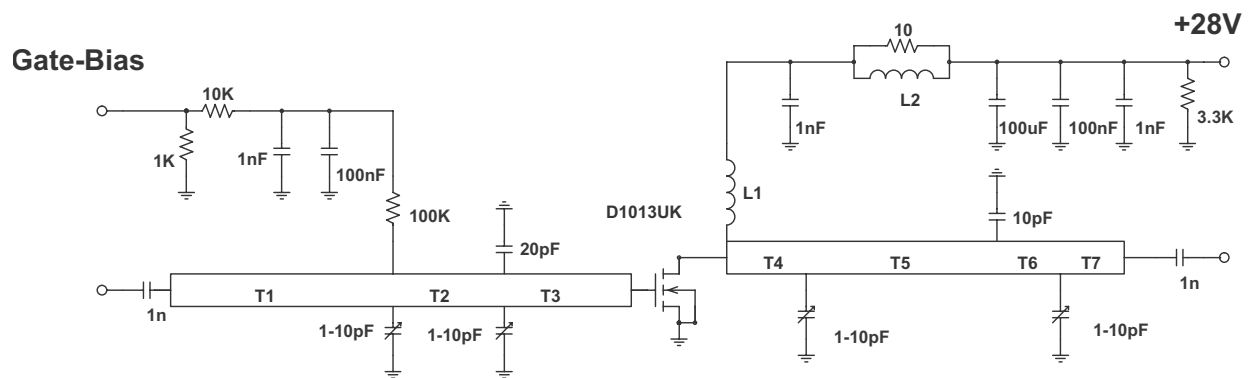


**Figure 3**  
Gain vs. Output Power



**Figure 4**  
IMD vs. Output Power



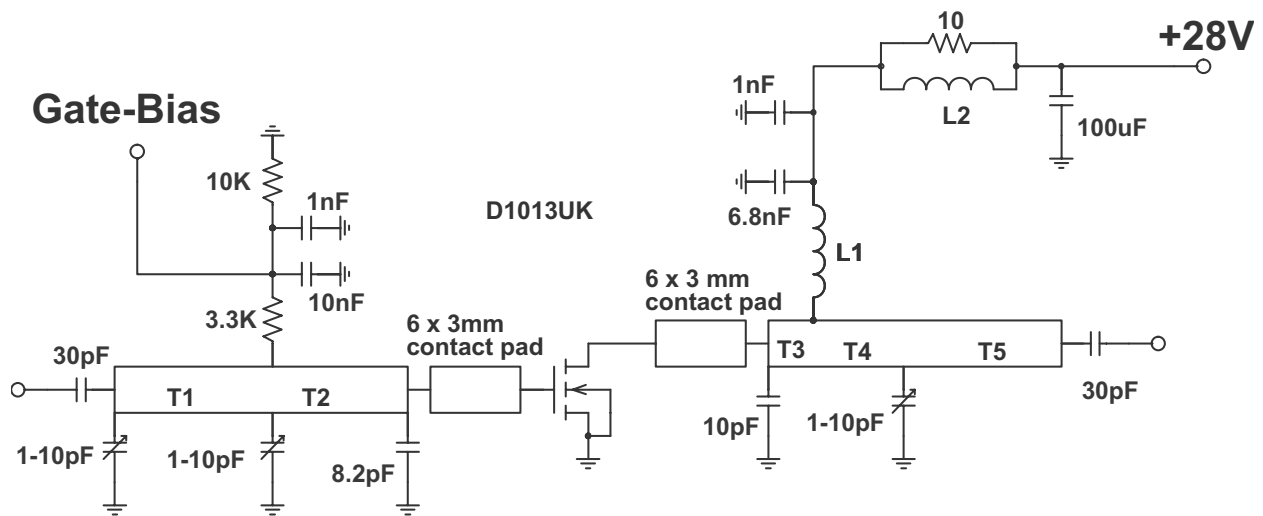


### 500MHz Test Fixture

Substrate 0.8 mm FR4, Er = 2.2  
 All microstrip lines W = 2.2mm

- T1
- T2
- T3 10mm
- T4
- T5 30mm
- T6 6mm
- T7 12.5mm

- L1 5.5 turns 20swg enamelled copper wire 7mm i.d.
- L2 1.5 turns 24swg enamelled copper wire on Siemens B62152A7X 2 hole



### 1GHz Test Fixture

Substrate 0.8mm PTFE/glass,  $\epsilon_r = 2.5$   
 All microstrip lines  $W = 2.2\text{mm}$

T1 35mm  
 T2 15mm  
 T3 4mm  
 T4 14mm  
 T5 32mm

L1 7.5 turns 24swg enamelled copper wire 3mm i.d.  
 L2 1.5 turns 24swg enamelled copper wire on ferrite core