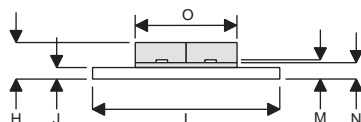
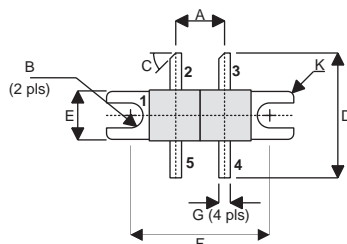


MECHANICAL DATA



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

**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<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> SS	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 = 400MHz		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

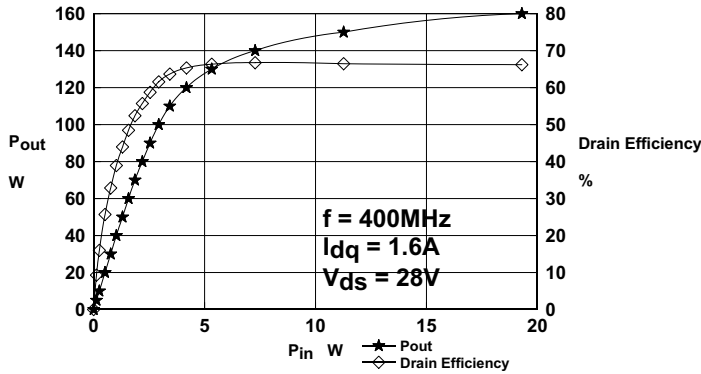
The ceramic portion of the device between leads and metal flange is beryllium oxide. Beryllium oxide dust is highly toxic and care must be taken during handling and mounting to avoid damage to this area.

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

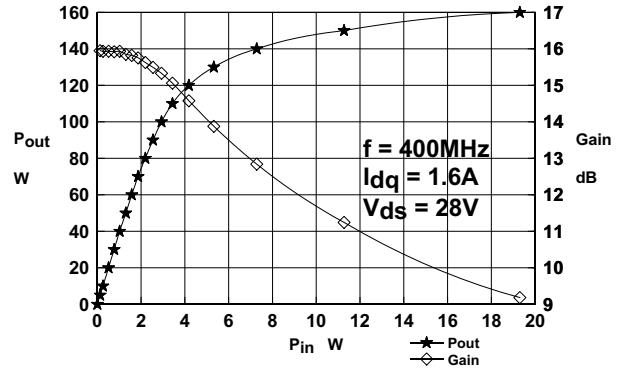
## THERMAL DATA

R <sub>THj-case</sub>	Thermal Resistance Junction – Case	Max. 0.5°C / W
-----------------------	------------------------------------	----------------

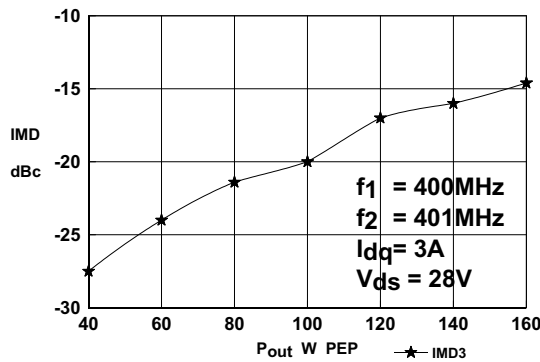
Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered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



**Figure 1.**  
Power Output and Efficiency vs. Input Power



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



**Figure 3**  
IMD vs. Power Output

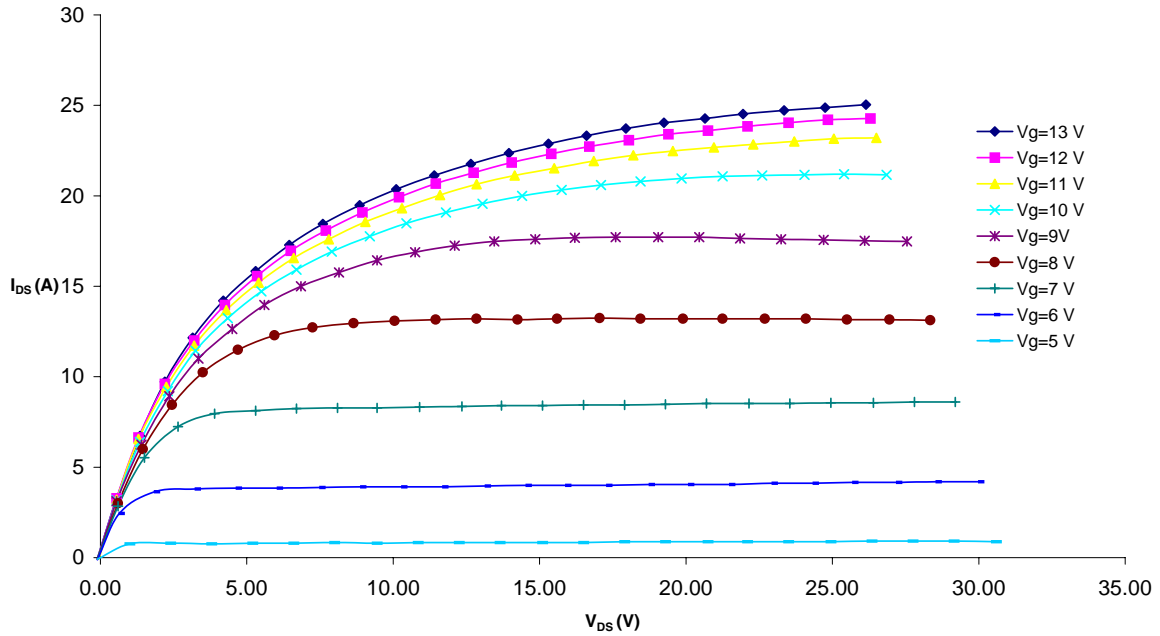


Figure 4 – Typical IV Characteristics.

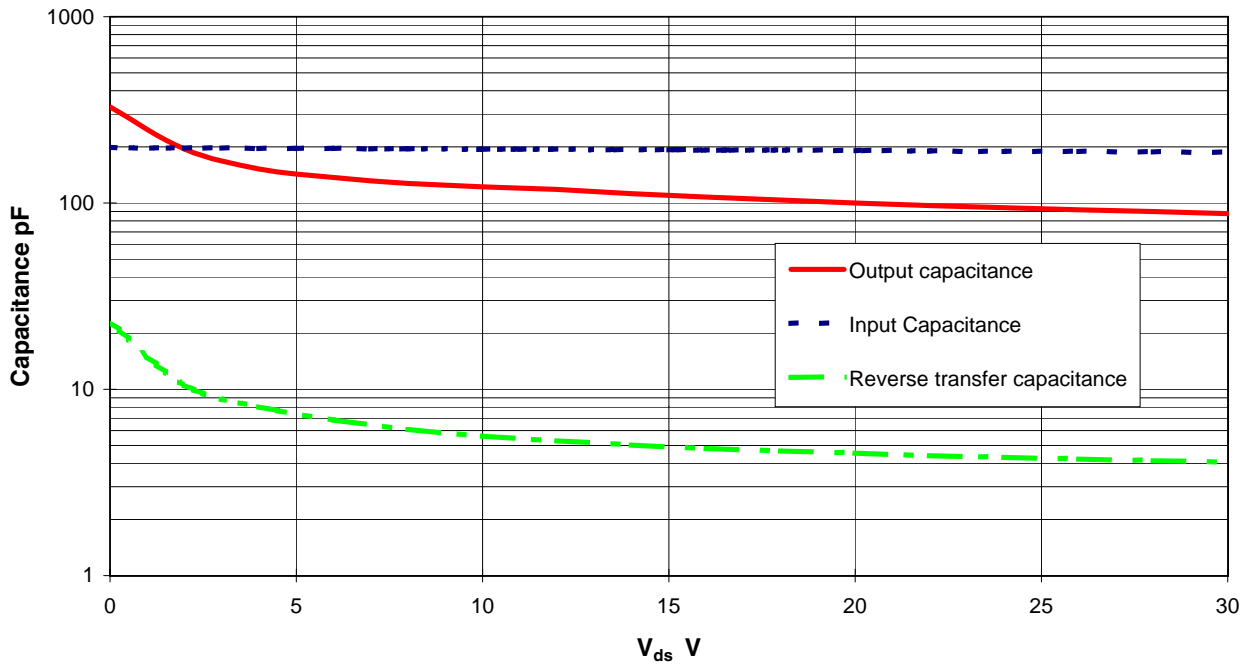
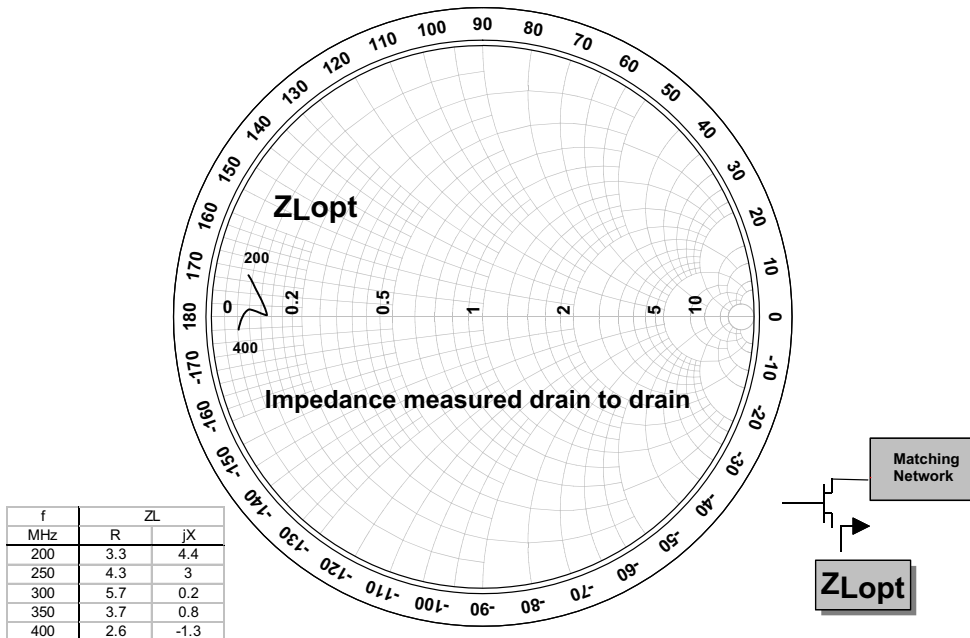
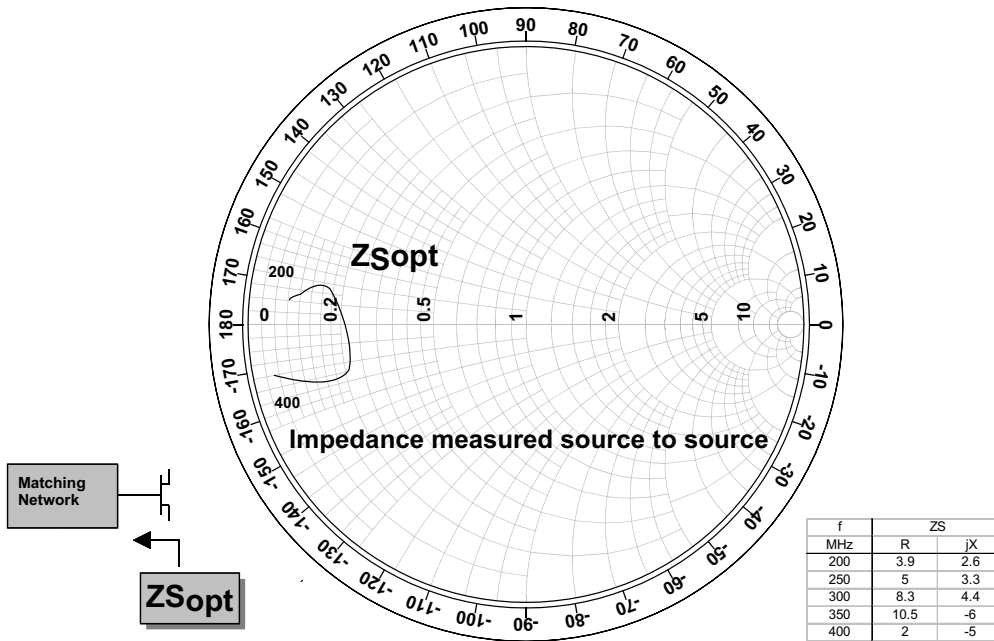
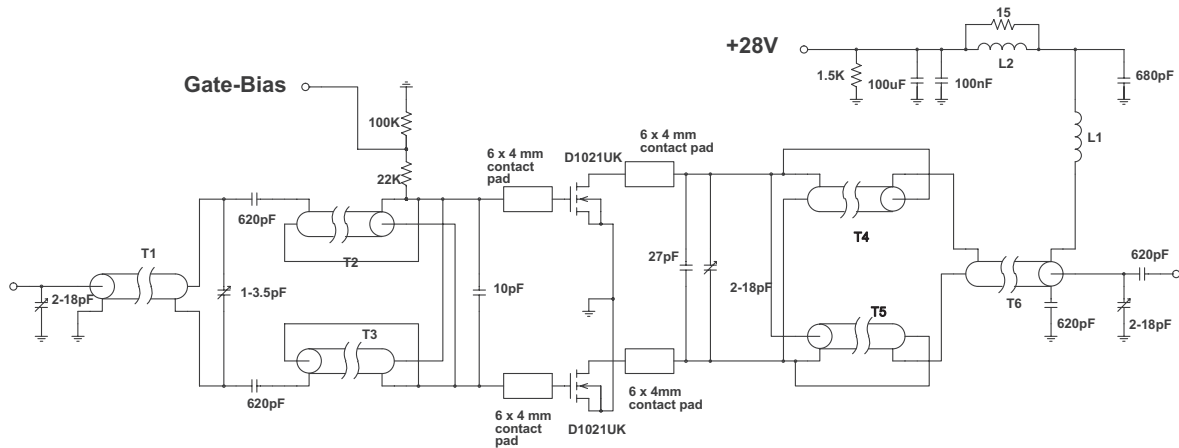


Figure 5 – Typical CV Characteristics.

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 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.



### 400MHz Test Fixture

- T1            11cm 50 Ohm UT47 semi-rigid coax on Siemens B62152A1X1 2 hole ferrite core
- T2,3,4,5    9cm 15 Ohm UT85-15 semi-rigid coax
- T6            9.7cm 50 Ohm UT85 semi-rigid coax
  
- L1            7 Turns 19swg enamelled copper wire 3.5mm internal diameter
- L2            5.5 Turns 19swg enamelled copper wire on Fair-rite FT50 ferrite core

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.