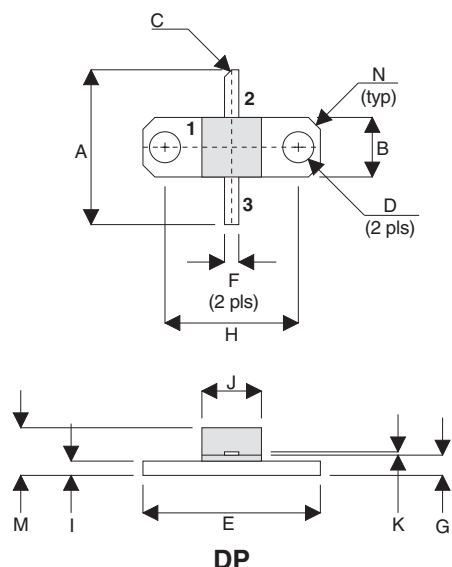


## MECHANICAL DATA



PIN 1 SOURCE PIN 2 DRAIN  
PIN 3 GATE

DIM	mm	Tol.	Inches	Tol.
A	16.51	0.25	0.650	0.010
B	6.35	0.13	0.250	0.005
C	45°	5°	45°	5°
D	3.30	0.13	0.130	0.005
E	18.92	0.08	0.745	0.003
F	1.52	0.13	0.060	0.005
G	2.16	0.13	0.085	0.005
H	14.22	0.08	0.560	0.003
I	1.52	0.13	0.060	0.005
J	6.35	0.13	0.250	0.005
K	0.13	0.03	0.005	0.001
M	5.08	0.51	0.200	0.020
N	1.27 x 45°	0.13	0.050 x 45°	0.005

# GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 20W – 12.5V – 1GHz SINGLE ENDED

## FEATURES

- SIMPLIFIED AMPLIFIER DESIGN
- SUITABLE FOR BROAD BAND APPLICATIONS
- LOW  $C_{rss}$
- SIMPLE BIAS CIRCUITS
- LOW NOISE
- HIGH GAIN – 10 dB MINIMUM

## APPLICATIONS

- VHF/UHF COMMUNICATIONS  
from DC to 1 GHz

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

$P_D$	Power Dissipation	70W
$BV_{DSS}$	Drain – Source Breakdown Voltage	40V
$BV_{GSS}$	Gate – Source Breakdown Voltage	$\pm 20V$
$I_{D(sat)}$	Drain Current	16A
$T_{stg}$	Storage Temperature	$-65$ to $150^{\circ}C$
$T_j$	Maximum Operating Junction Temperature	$200^{\circ}C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$BV_{\text{DSS}}$ Drain–Source Breakdown Voltage	$V_{\text{GS}} = 0$ $I_{\text{D}} = 10\text{mA}$	40			V
$I_{\text{DSS}}$ Zero Gate Voltage Drain Current	$V_{\text{DS}} = 12.5\text{V}$ $V_{\text{GS}} = 0$			8	mA
$I_{\text{GSS}}$ Gate Leakage Current	$V_{\text{GS}} = 20\text{V}$ $V_{\text{DS}} = 0$			8	$\mu\text{A}$
$V_{\text{GS(th)}}$ Gate Threshold Voltage*	$I_{\text{D}} = 10\text{mA}$ $V_{\text{DS}} = V_{\text{GS}}$	0.5		7	V
$g_{\text{fs}}$ Forward Transconductance*	$V_{\text{DS}} = 10\text{V}$ $I_{\text{D}} = 1.6\text{A}$	1.44			S
$G_{\text{PS}}$ Common Source Power Gain	$P_{\text{O}} = 20\text{W}$	10			dB
$\eta$ Drain Efficiency	$V_{\text{DS}} = 12.5\text{V}$ $I_{\text{DQ}} = 1.6\text{A}$	40			%
VSWR Load Mismatch Tolerance	$f = 1\text{GHz}$	20:1			—
$C_{\text{iss}}$ Input Capacitance	$V_{\text{DS}} = 0$ $V_{\text{GS}} = -5\text{V}$ $f = 1\text{MHz}$			96	pF
$C_{\text{oss}}$ Output Capacitance	$V_{\text{DS}} = 12.5\text{V}$ $V_{\text{GS}} = 0$ $f = 1\text{MHz}$			80	pF
$C_{\text{rss}}$ Reverse Transfer Capacitance	$V_{\text{DS}} = 12.5\text{V}$ $V_{\text{GS}} = 0$ $f = 1\text{MHz}$			8	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

$R_{\text{THj-case}}$	Thermal Resistance Junction – Case	Max. $2.5^{\circ}\text{C} / \text{W}$
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