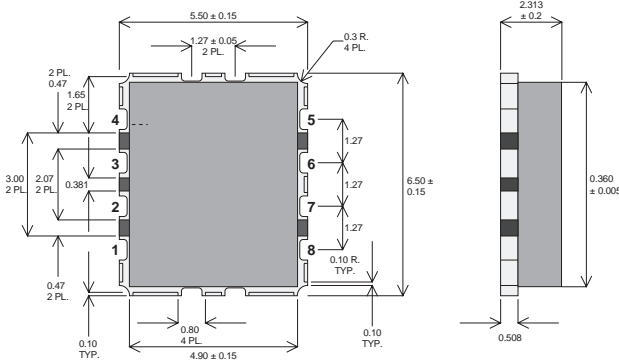


**MECHANICAL DATA**

Dimensions in mm.

**GOLD METALLISED  
MULTI-PURPOSE SILICON  
DMOS RF FET  
7.5W – 12.5V – 1GHz  
SINGLE ENDED**



**F-0127 PACKAGE**

- PIN 1 – SOURCE
- PIN 2 – DRAIN
- PIN 3 – DRAIN
- PIN 4 – SOURCE
- PIN 5 – SOURCE
- PIN 6 – GATE
- PIN 7 – GATE
- PIN 8 – SOURCE

**FEATURES**

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

**Ceramic Material: Alumina.**  
Parts can also be supplied with AlN or BeO for improved thermal resistance.  
Contact Semelab for details.

**APPLICATIONS**

- HF/VHF/UHF COMMUNICATIONS  
from 1 MHz to 2 GHz

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

$P_D$	Power Dissipation	17.5W
$BV_{DSS}$	Drain – Source Breakdown Voltage	40V
$BV_{GSS}$	Gate – Source Breakdown Voltage	±20V
$I_{D(sat)}$	Drain Current	6A
$T_{stg}$	Storage Temperature	-65 to 150°C
$T_j$	Maximum Operating Junction Temperature	200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub> Drain–Source Breakdown Voltage	V <sub>GS</sub> = 0 I <sub>D</sub> = 10mA	40			V
I <sub>DSS</sub> Zero Gate Voltage Drain Current	V <sub>DS</sub> = 12.5V V <sub>GS</sub> = 0			3	mA
I <sub>GSS</sub> 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>	0.5		7	V
g <sub>fs</sub> Forward Transconductance*	V <sub>DS</sub> = 10V I <sub>D</sub> = 0.6A	0.54			S
G <sub>PS</sub> Common Source Power Gain	P <sub>O</sub> = 7.5W	10			dB
η Drain Efficiency	V <sub>DS</sub> = 12.5V I <sub>DQ</sub> = 0.3A	40			%
VSWR Load Mismatch Tolerance	f = 1GHz	20:1			—
C <sub>iss</sub> Input Capacitance	V <sub>DS</sub> = 0V V <sub>GS</sub> = -5V f = 1MHz			36	pF
C <sub>oss</sub> Output Capacitance	V <sub>DS</sub> = 12.5V V <sub>GS</sub> = 0 f = 1MHz			30	pF
C <sub>rss</sub> Reverse Transfer Capacitance	V <sub>DS</sub> = 12.5V V <sub>GS</sub> = 0 f = 1MHz			3	pF

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

## THERMAL DATA

R <sub>THj-case</sub>	Thermal Resistance Junction – Case	Max. 6°C / W
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