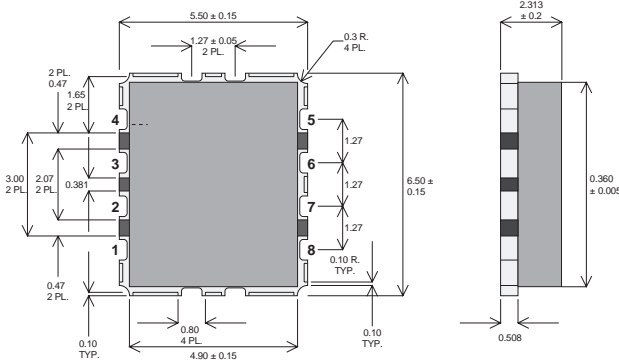


**MECHANICAL DATA**

Dimensions in mm.

**GOLD METALLISED  
MULTI-PURPOSE SILICON  
DMOS RF FET  
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	4A
$T_{stg}$	Storage Temperature	-65 to 150°C
$T_j$	Maximum Operating Junction Temperature	200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$ Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 10mA$	40			V
$I_{DSS}$ Zero Gate Voltage Drain Current	$V_{DS} = 12.5V$ $V_{GS} = 0$			2	mA
$I_{GSS}$ Gate Leakage Current	$V_{GS} = 20V$ $V_{DS} = 0$			1	$\mu A$
$V_{GS(th)}$ Gate Threshold Voltage*	$I_D = 10mA$ $V_{DS} = V_{GS}$	0.5		7	V
$g_{fs}$ Forward Transconductance*	$V_{DS} = 10V$ $I_D = 0.2A$	0.36			S
$G_{PS}$ Common Source Power Gain	$P_O = 5W$	10			dB
$\eta$ Drain Efficiency	$V_{DS} = 12.5V$ $I_{DQ} = 0.2A$	40			%
VSWR Load Mismatch Tolerance	$f = 1GHz$	20:1			—
$C_{iss}$ Input Capacitance	$V_{DS} = 0V$ $V_{GS} = -5V$ $f = 1MHz$			24	pF
$C_{oss}$ Output Capacitance	$V_{DS} = 12.5V$ $V_{GS} = 0$ $f = 1MHz$			20	pF
$C_{rss}$ Reverse Transfer Capacitance	$V_{DS} = 12.5V$ $V_{GS} = 0$ $f = 1MHz$			2	pF

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

**THERMAL DATA**

$R_{THj-case}$	Thermal Resistance Junction – Case	Max. 6°C / W
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