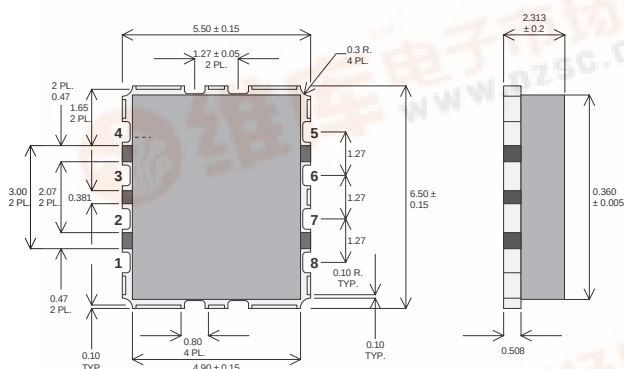


D2031UK

METAL GATE RF SILICON FET

MECHANICAL DATA

Dimensions in mm.



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

Ceramic Material: Alumina.

Parts can also be supplied with AlN or BeO for improved thermal resistance.

Contact Semelab for details.

**GOLD METALLISED
MULTI-PURPOSE SILICON
DMOS RF FET
7.5W – 28V – 1GHz
SINGLE ENDED**

FEATURES

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

APPLICATIONS

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

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

P_D	Power Dissipation	17.5W
BV_{DSS}	Drain – Source Breakdown Voltage	65V
BV_{GSS}	Gate – Source Breakdown Voltage	$\pm 20V$
$I_{D(sat)}$	Drain Current	3A
	Storage Temperature	-65 to $150^{\circ}C$
	Maximum Operating Junction Temperature	$200^{\circ}C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
BV_{DSS} Drain–Source Breakdown Voltage	$V_{\text{GS}} = 0$ $I_{\text{D}} = 10\text{mA}$	65			V
I_{DSS} Zero Gate Voltage Drain Current	$V_{\text{DS}} = 28\text{V}$ $V_{\text{GS}} = 0$			3	mA
I_{GSS} Gate Leakage Current	$V_{\text{GS}} = 20\text{V}$ $V_{\text{DS}} = 0$			1	μA
$V_{\text{GS(th)}}$ Gate Threshold Voltage*	$I_{\text{D}} = 10\text{mA}$ $V_{\text{DS}} = V_{\text{GS}}$	0.5		7	V
g_{fs} Forward Transconductance*	$V_{\text{DS}} = 10\text{V}$ $I_{\text{D}} = 0.6\text{A}$	0.54			S
G_{PS} Common Source Power Gain	$P_{\text{O}} = 7.5\text{W}$ $V_{\text{DS}} = 28\text{V}$ $I_{\text{DQ}} = 0.3\text{A}$ $f = 1\text{GHz}$	13			dB
η Drain Efficiency		40			%
VSWR Load Mismatch Tolerance		20:1			—
C_{iss} Input Capacitance	$V_{\text{DS}} = 0\text{V}$ $V_{\text{GS}} = -5\text{V}$ $f = 1\text{MHz}$			36	pF
C_{oss} Output Capacitance	$V_{\text{DS}} = 28\text{V}$ $V_{\text{GS}} = 0$ $f = 1\text{MHz}$			18	pF
C_{rss} Reverse Transfer Capacitance	$V_{\text{DS}} = 28\text{V}$ $V_{\text{GS}} = 0$ $f = 1\text{MHz}$			1.5	pF

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

THERMAL DATA

$R_{\text{THj-case}}$	Thermal Resistance Junction – Case	Max. 5°C / W
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