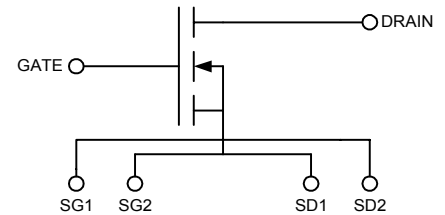
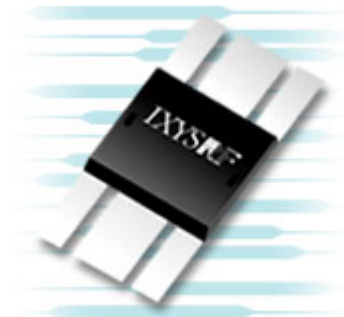


N-Channel Enhancement Mode Switch Mode RF MOSFET
 Low Capacitance Z-MOS™ MOSFET Process
 Optimized for RF Operation
 Ideal for Class C, D, & E Applications

V_{DSS} = **500 V**
I_{D25} = **19.0 A**
R_{DS(on)} = **0.325 Ω**
P_{DC} = **880 W**

Symbol	Test Conditions	Maximum Ratings
V _{DSS}	T _J = 25°C to 150°C	500 V
V _{DGR}	T _J = 25°C to 150°C; R _{GS} = 1 MΩ	500 V
V _{GS}	Continuous	±20 V
V _{GSM}	Transient	±30 V
I _{D25}	T _c = 25°C	19 A
I _{DM}	T _c = 25°C, pulse width limited by T _{JM}	95 A
I _{AR}	T _c = 25°C	19 A
E _{AR}	T _c = 25°C	TBD mJ
dv/dt	I _S ≤ I _{DM} , di/dt ≤ 100A/μs, V _{DD} ≤ V _{DSS} , T _J ≤ 150°C, R _G = 0.2Ω	5 V/ns
	I _S = 0	>200 V/ns
P _{DC}		880 W
P _{DHS}	T _c = 25°C, Derate 4.4W/°C above 25°C	440 W
P _{DAMB}	T _c = 25°C	3.0 W
R _{thJC}		0.17 C/W
R _{thJHS}		0.34 C/W



Features

- Isolated Substrate
 - high isolation voltage (>2500V)
 - excellent thermal transfer
 - Increased temperature and power cycling capability
- IXYS advanced Z-MOS process
- Low gate charge and capacitances
 - easier to drive
 - faster switching
- Low R_{DS(on)}
- Very low insertion inductance (<2nH)
- No beryllium oxide (BeO) or other hazardous materials

Advantages

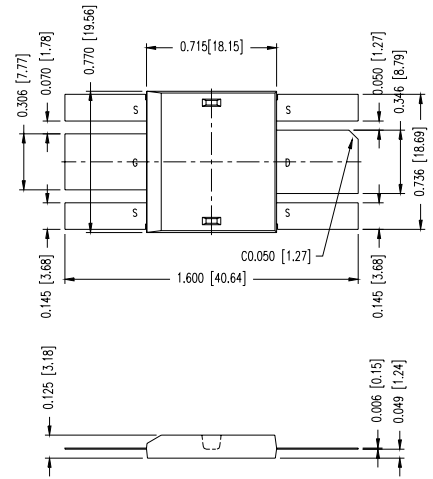
- Optimized for RF and high speed
- Easy to mount—no insulators needed
- High power density

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C unless otherwise specified)		
		min.	typ.	max.
V _{DSS}	V _{GS} = 0 V, I _D = 4 ma	500		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	3.5		6.5 V
I _{GSS}	V _{GS} = ±20 V _{DC} , V _{DS} = 0			±100 nA
I _{DSS}	V _{DS} = 0.8V _{DSS} V _{GS} =0			50 μA 1 mA
R _{DS(on)}	V _{GS} = 20 V, I _D = 0.5I _{D25} Pulse test, t ≤ 300μS, duty cycle d ≤ 2%		0.325	Ω
g _{fs}	V _{DS} = 50 V, I _D = 0.5I _{D25} , pulse test		14	S
T _J		-55		+175 °C
T _{JM}			175	°C
T _{stg}		-55		+ 175 °C
T _L	1.6mm(0.063 in) from case for 10 s		300	°C
Weight			3.5	g

PRELIMINARY

Symbol Test Conditions Characteristic Values
($T_J = 25^\circ\text{C}$ unless otherwise specified)

		min.	typ.	max.	
R_G				1	Ω
C_{iss}			1960		pF
C_{oss}	$V_{GS} = 0\text{ V}, V_{DS} = 0.8 V_{DSS(max)}, f = 1\text{ MHz}$		139		pF
C_{rss}			19		pF
C_{stray}	Back Metal to any Pin		33		pF
$T_{d(on)}$			4		ns
T_{on}	$V_{GS} = 15\text{ V}, V_{DS} = 0.8 V_{DSS}$ $I_D = 0.5 I_{DM}$		4		ns
$T_{d(off)}$	$R_G = 1\ \Omega$ (External)		4		ns
T_{off}			5		ns



Source-Drain Diode Characteristic Values
($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Conditions	min.	typ.	max.	
I_S	$V_{GS} = 0\text{ V}$			19	A
I_{SM}	Repetitive; pulse width limited by T_{JM}			114	A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$			1.5	V
T_{rr}			TBD		ns

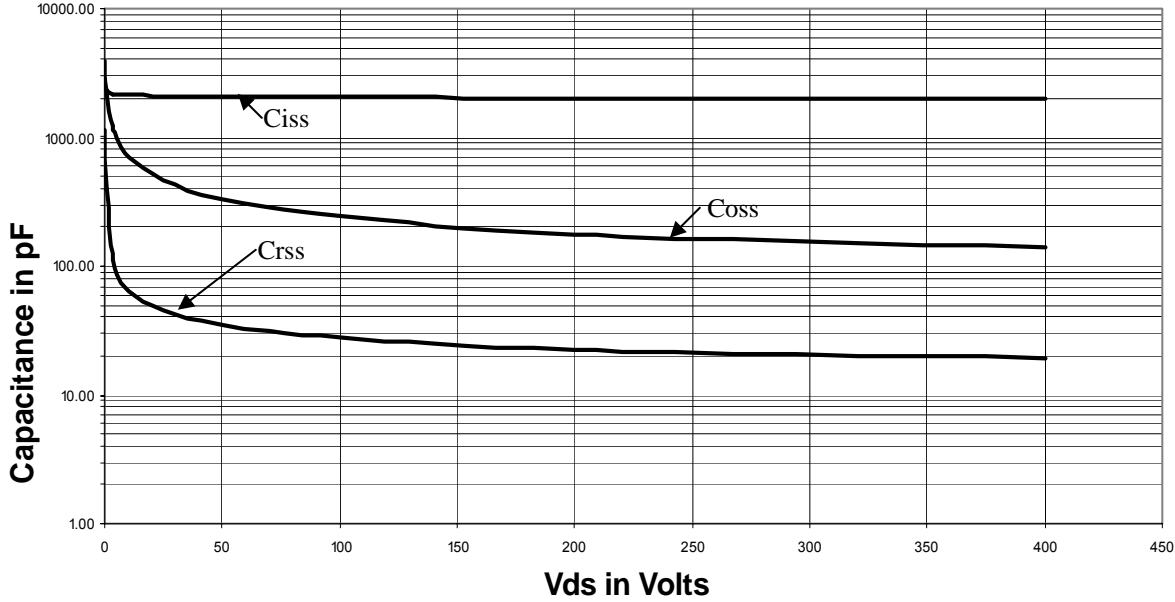
For detailed device mounting and installation instructions, see the “*DE-Series MOSFET Mounting Instructions*” technical note on IXYS RF’s web site at www.ixysrf.com/Technical_Support/App_notes.html

IXYS RF reserves the right to change limits, test conditions and dimensions.

IXYS RF MOSFETS are covered by one or more of the following U.S. patents:

4,835,592 4,860,072 4,881,106 4,891,686 4,931,844 5,017,508
 5,034,796 5,049,961 5,063,307 5,187,117 5,237,481 5,486,715
 5,381,025 5,640,045 6,404,065 6,583,505 6,710,463 6,727,585
 6,731,002

PRELIMINARY



IXZ318N50 Capacitance verses Vds