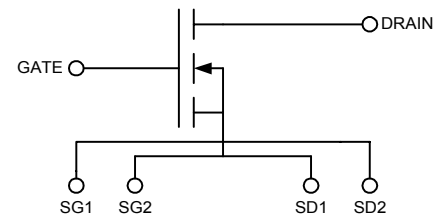
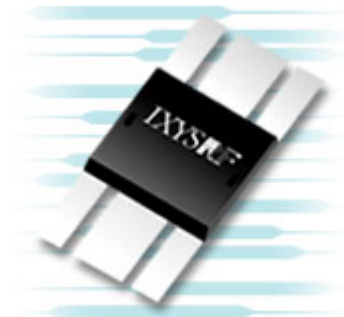


N-Channel Enhancement Mode Switch Mode RF MOSFET
 Low Capacitance Z-MOS™ MOSFET Process
 Optimized for RF Operation
 Ideal for Class C, D, & E Applications

V_{DSS} = **1200 V**
I_{D25} = **8.0 A**
R_{DS(on)} = **2.1 Ω**
P_{DC} = **880 W**

Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 150°C	1200	V
V _{DGR}	T _J = 25°C to 150°C; R _{GS} = 1 MΩ	1200	V
V _{GS}	Continuous	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _c = 25°C	8	A
I _{DM}	T _c = 25°C, pulse width limited by T _{JM}	40	A
I _{AR}	T _c = 25°C	8	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

		min.	typ.	max.	
V _{DSS}	V _{GS} = 0 V, I _D = 4 ma	1200			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%		2.1		Ω
g _{fs}	V _{DS} = 50 V, I _D = 0.5I _{D25} , pulse test		10.1		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

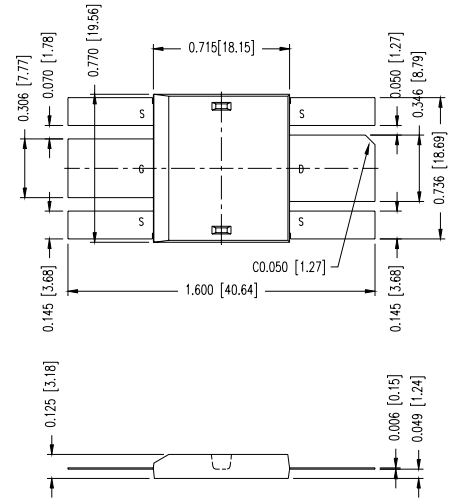
PRELIMINARY

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}	$V_{GS} = 0\text{ V}, V_{DS} = 0.8 V_{DSS(max)}, f = 1\text{ MHz}$		59	pF
C_{rss}			9.2	pF
C_{stray}	Back Metal to any Pin		33	pF
$T_{d(on)}$			4	ns
T_{on}	$V_{GS} = 15\text{ V}, V_{DS} = 0.8 V_{DSS}, I_D = 0.5 I_{DM}$		5	ns
$T_{d(off)}$	$R_G = 1\ \Omega$ (External)		4	ns
T_{off}			6	ns

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

Symbol	Test Conditions	min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$			8 A
I_{SM}	Repetitive; pulse width limited by T_{JM}			48 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



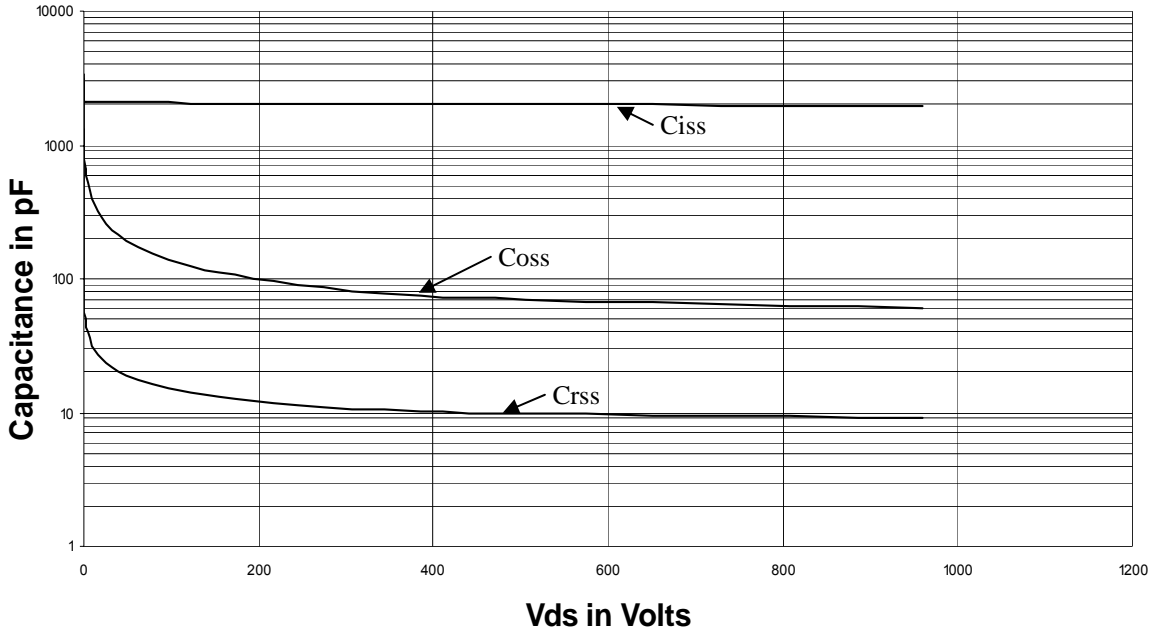
For detailed device mounting and installation instructions, see the “*DE-Series MOSFET Mounting Instructions*” technical note on IXYS RF’s web site at www.ixysrf.com/Technical_Support/App_notes.html

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



IXZ308N120 Capacitances verses Vds