

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

$$V_{DSS} = 1200 \text{ V}$$

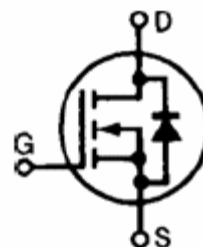
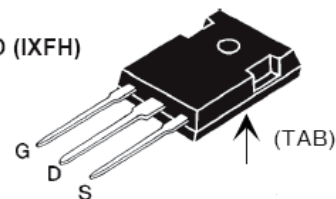
$$I_{D25} = 8.0 \text{ A}$$

$$R_{DS(on)} = 2.1 \Omega$$

$$P_{DC} = 300 \text{ W}$$

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1200	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	1200	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_c = 25^\circ\text{C}$	8	A
I_{DM}	$T_c = 25^\circ\text{C}$, pulse width limited by T_{JM}	40	A
I_{AR}	$T_c = 25^\circ\text{C}$	8	A
E_{AR}	$T_c = 25^\circ\text{C}$	TBD	mJ
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 0.2 \Omega$	5	V/ns
	$I_S = 0$	>200	V/ns
P_{DC}		300	W
P_{DAMB}	$T_c = 25^\circ\text{C}$	3.0	W
R_{thJC}		0.5	C/W

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		min.	typ.	max.
V_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 4 \text{ ma}$	1200		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250 \mu\text{A}$	3.5		6.5 V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100 \text{ nA}$
I_{DSS}	$V_{DS} = 0.8 V_{DSS}$, $T_J = 25^\circ\text{C}$ $V_{GS} = 0$, $T_J = 125^\circ\text{C}$			50 μA 1 mA
$R_{DS(on)}$	$V_{GS} = 20 \text{ V}$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2\%$		2.1	Ω
g_{fs}	$V_{DS} = 50 \text{ V}$, $I_D = 0.5 I_{D25}$, pulse test		10.1	S
T_J		-55		+175 $^\circ\text{C}$
T_{JM}			175	$^\circ\text{C}$
T_{stg}		-55		+ 175 $^\circ\text{C}$
T_L	1.6mm(0.063 in) from case for 10 s		300	$^\circ\text{C}$
Weight			3.5	g

Features

- IXYS advanced Z-MOS process
- Low gate charge and capacitances
 - easier to drive
 - faster switching
- Low $R_{DS(on)}$
- Very low insertion inductance (<2nH)

Advantages

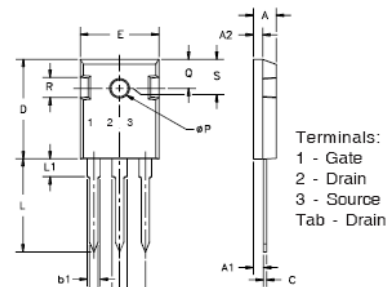
- High Performance RF Z-MOS™
- Optimized for RF and high speed

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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
$T_{d(on)}$			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

TO-247 AD (IXFH) Outline



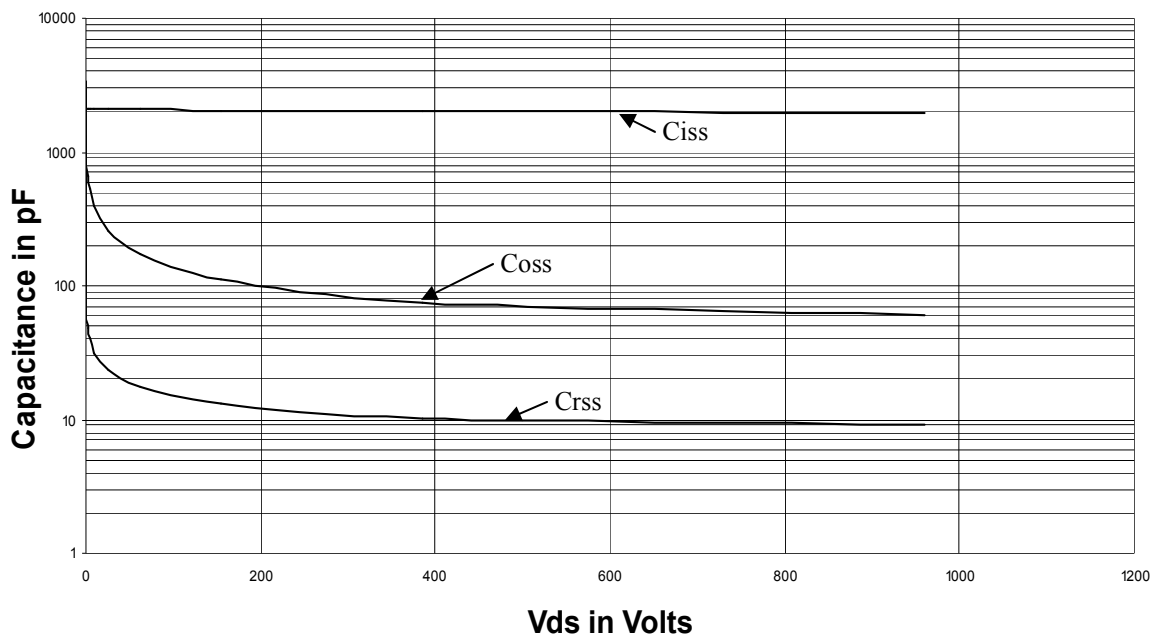
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A ₁	2.2	2.54	.087	.102
A ₂	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b ₁	1.65	2.13	.065	.084
b ₂	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
ØP	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15	BSC	.242	BSC

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

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IXZH08N120 Capacitances verses V_{ds}

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