



IXZ12210N50L RF Power MOSFET

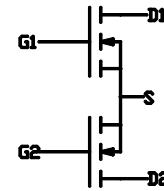
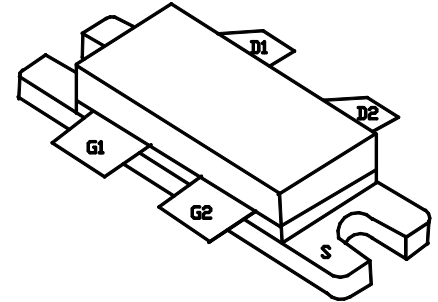
N-Channel Enhancement Mode Linear 175MHz RF MOSFET
 Low Capacitance Z-MOS™ MOSFET Process
 Optimized for Linear Operation
 Ideal for Class AB & C, Broadcast & Communications Applications

$V_{DSS} = 500\text{ V}$
 $I_{D25} = 10\text{ A}$

**125V (operating)
 175MHz**

Note: All data is per the IXZ1210N50L single ended device unless otherwise

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	500	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1\text{ M}\Omega$	500	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_c = 25^\circ\text{C}$	10	A
I_{DM}	$T_c = 25^\circ\text{C}$, pulse width limited by T_{JM}	60	A
I_{AR}	$T_c = 25^\circ\text{C}$	16	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}		Per Device	Total
		180	360
P_{DHS}	$T_c = 25^\circ\text{C}$, Derate $6.0\text{W}/^\circ\text{C}$ above 25°C	150	300
P_{DAMB}	$T_c = 25^\circ\text{C}$		10
R_{thJC}		0.83	0.42
R_{thJHS}		1.00	0.50



		min.	typ.	max.	
V_{DSS}	$V_{GS} = 0\text{ V}$, $I_D = 4\text{ ma}$	500			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$	3.5	4.83	6.5	V
I_{GSS}	$V_{GS} = \pm 20\text{ V}_{DC}$, $V_{DS} = 0$			± 100	nA
I_{DSS}	$V_{DS} = 0.8V_{DSS}$, $V_{GS} = 0$			50 1	μA mA
$R_{DS(on)}$	$V_{GS} = 20\text{ V}$, $I_D = 0.5I_{D25}$ Pulse test, $t \leq 300\mu\text{s}$, duty cycle $d \leq 2\%$		1.0		Ω
g_{fs}	$V_{DS} = 50\text{ V}$, $I_D = 0.5I_{D25}$, pulse test		3.8		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			4		g

Features

- IXYS RF Low Capacitance Z-MOS™ Process
- Very low insertion inductance (<2nH)

Advantages

- High Performance RF Package
- Easy to mount—no insulators needed
- Standard RF Package

(1) Thermal specifications are for the package, not per transistor

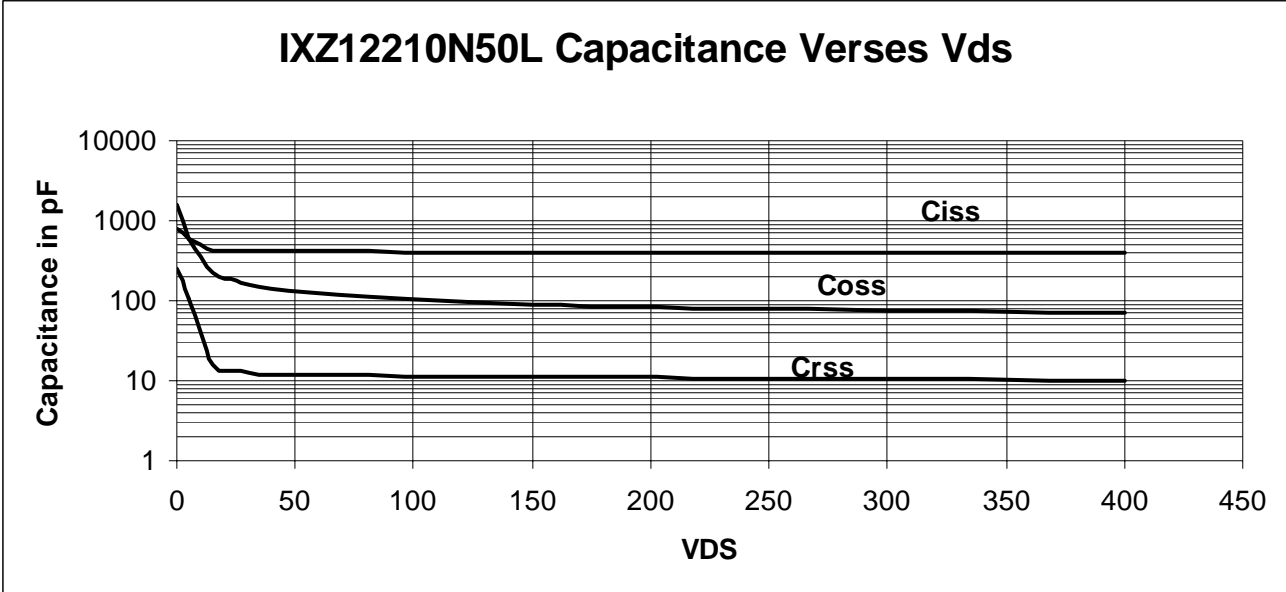
PRELIMINARY

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$ unless otherwise specified)		
		min.	typ.	max.
C_{iss}		366	383	404 pF
C_{oss}	$V_{GS} = 0\text{ V}, V_{DS} = 0.8 V_{DSS(MAX)},$ $f = 1\text{ MHz}$	48	60	105 pF
C_{rss}		6	11	13 pF
$T_{d(on)}$			16	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)		5	ns
T_{off}			6	ns

VHF COMMUNICATIONS		min.	typ.	max.
Gps	VDD= 50V, Pout=200W, f=175MHz		TBD	db
Drain Efficiency	VDD= 50V, Pout=200W, f=175MHz	TBD		60 %
Load Mismatch	VDD= 150V, Pout=300W, f=175MHz			TBD

3T MRI		min.	typ.	max.
Gps(1)	VDD=120V, P _{OUT} =475W, F=128MHz		TBD	db
Drain Efficiency	VDD= 50V, Pout=200W, f=175MHz		TBD	%

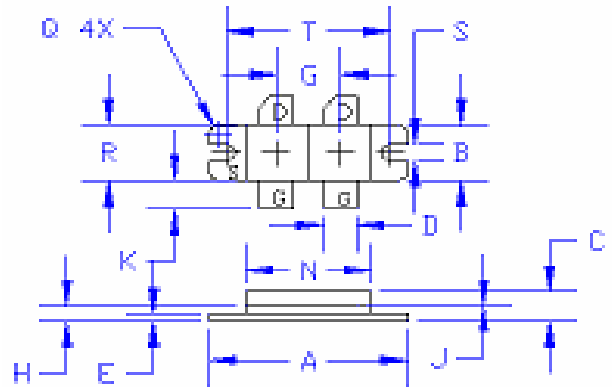
PRELIMINARY



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IXZ12210N50L

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.330	1.350	33.79	34.29
B	0.370	0.410	9.40	10.41
C	0.190	0.230	4.83	5.84
D	0.215	0.235	5.47	5.96
E	0.050	0.070	1.27	1.77
G	0.430	0.440	10.92	11.18
H	0.102	0.112	2.59	2.84
J	0.004	0.006	0.11	0.15
K	0.185	0.215	4.83	5.33
N	0.845	0.875	21.46	22.23
Q	0.060	0.070	1.52	1.78
R	0.390	0.410	9.91	10.41
S	0.120	0.130	30.48	33.02
T	1.100 BSC		27.94 BSC	



PRELIMINARY

Doc #dsIXZ12210N50L REV X1
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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:

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|-----------|-----------|-----------|-----------|-----------|-----------|
| 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 |

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