IXZ12210N50L
RF Power MOSFET

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

V_{DSS} = 500 V
I_{D25} = 10 A

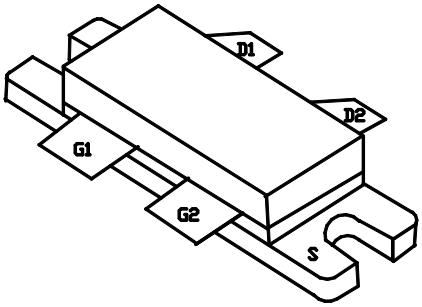
125V (operating)
175MHz

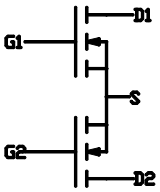
Note: All data is per the IXZ1210N50L single ended device unless otherwise

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°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	10	A
I_{DM}	T_c = 25°C, pulse width limited by T_{JM}	60	A
I_{AR}	T_c = 25°C	16	A
E_{AR}	T_c = 25°C	TBD	mJ
dv/dt	$I_S \le I_{DM}$, di/dt ≤ 100A/µs, $V_{DD} \le V_{DSS}$, $T_j \le 150°C$, R_G = 0.2Ω	5	V/ns
	I_S = 0	>200	V/ns

		Per Device	Total	
P_{DC}		180	360	W
P_{DHS}	T_c = 25°C, Derate 6.0W/°C above 25°C	150	300	W
P_{DAMB}	T_c = 25°C		10	W
R_{thJC}		0.83	0.42	C/W
R_{thJHS}		1.00	0.50	C/W

		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	4.83	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	T_J = 25C T_J =125C		50 1	µA mA
$R_{DS(on)}$	V_{GS} = 20 V, I_D = 0.5I_{D25} Pulse test, t ≤ 300µS, duty cycle d ≤ 2%		1.0		Ω
g_{fs}	V_{DS} = 50 V, I_D = 0.5I_{D25}, pulse test		3.8		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			4		g





Features

- IXYS RF Low Capacitance Z-MOS^{TM} 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

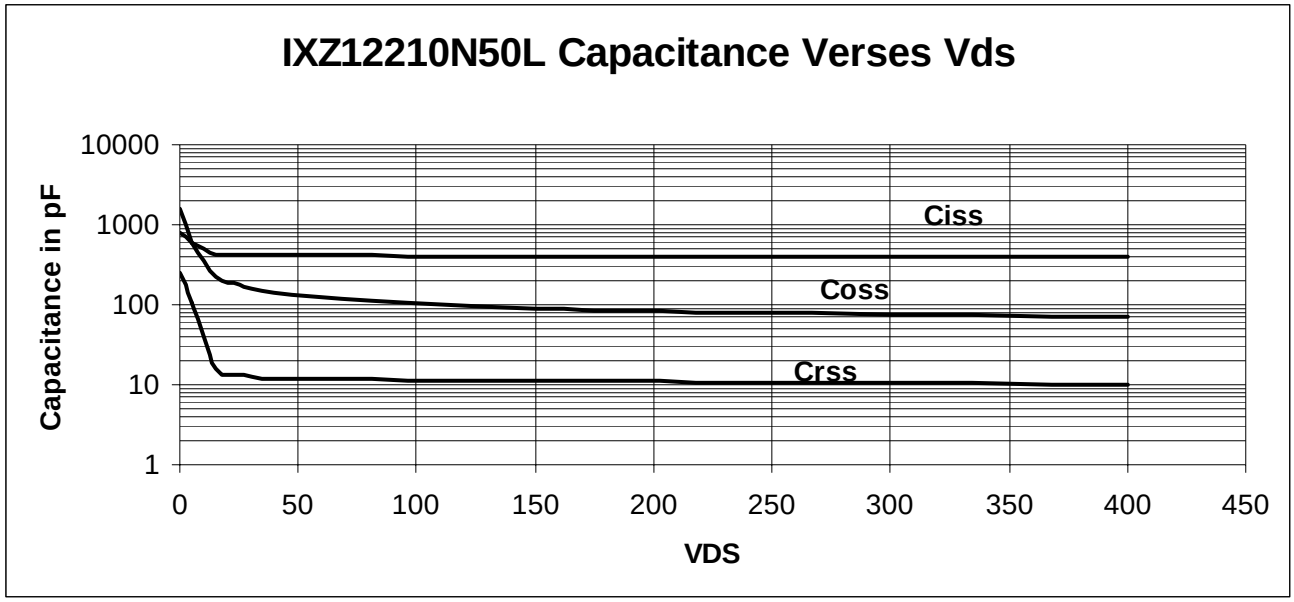
PRELIMINARY

Symbol	Test Conditions	Characteristic Values (T_J = 25°C unless otherwise specified) min.	typ.	max.	
C_{iss}		366	383	404	pF
C_{oss}	V_{GS} = 0 V, V_{DS} = 0.8 $V_{DSS(MAX)}$, f = 1 MHz	48	60	105	pF
C_{rss}		6	11	13	pF
$T_{d(on)}$			16		ns
T_{on}	V_{GS} = 15 V, V_{DS} = 0.8 V_{DSS}		4		ns
$T_{d(off)}$	I_D = 0.5 I_{DM} R_G = 1 Ω (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		%

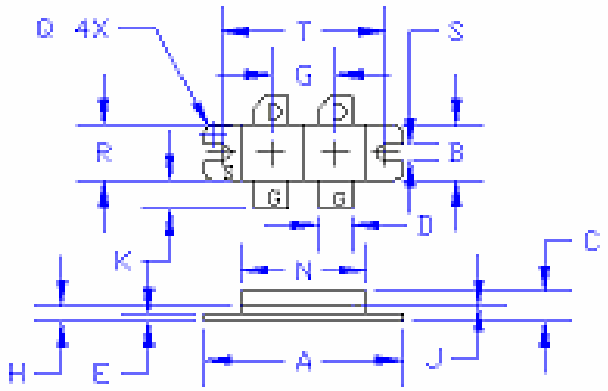
PRELIMINARY



PRELIMINARY

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

IXYS RF

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

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