



IXZ210N50L & IXZ2210N50L RF Power MOSFET

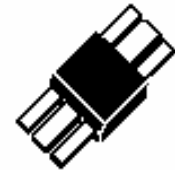
N-Channel Enhancement Mode Linear 175MHz RF MOSFET
 Low Capacitance Z-MOS™ MOSFET Process
 Optimized for Linear Operation
 Ideal for Class AB & C, Broadcast & Communications Applications

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

**150V (operating)
 300 & 550 Watts
 175MHz**

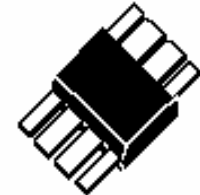
Note: All data is per the IXZ210N50L single ended device unless otherwise noted.

| 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 |



IXZ210N50L

Pout - 300 Watts CW
 Gain - 14dB @ 175MHz



IXZ2210N50L

Pout - 550 Watts CW
 Gain - 14dB @ 175MHz

| | IXZ210N50L | IXZ2210N50L | |
|-------------|--|-------------|-------|
| P_{DC} | 470 | 940 | W |
| P_{DHS} | $T_c = 25^\circ\text{C}$, Derate 6.0W/°C above 25°C | 235 | 470 W |
| P_{DAMB} | $T_c = 25^\circ\text{C}$ | 10 | 10 W |
| R_{thJC} | 0.32 | 0.16 | C/W |
| R_{thJHS} | 0.57 | 0.29 | C/W |

| | | 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 | 4.95 | 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 | °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

- Isolated Substrate
 - high isolation voltage (>2500V)
 - excellent thermal transfer
 - Increased temperature and power cycling capability
- IXYS RF Low Capacitance Z-MOS™ Process
- Very low insertion inductance (<2nH)
- No beryllium oxide (BeO) or other hazardous materials

Advantages

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

(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} | | 560 | 622 | 690 pF |
| C_{oss} | $V_{GS} = 0\text{ V}, V_{DS} = 0.8 V_{DSS(MAX)},$ $f = 1\text{ MHz}$ | 50 | 77 | 150 pF |
| C_{rss} | | 10 | 12 | 13 pF |
| C_{stray} | Back Metal to any Pin | | 21 | pF |
| $T_{d(on)}$ | | | 4 | ns |
| T_{on} | $V_{GS} = 15\text{ V}, V_{DS} = 0.8 V_{DSS}$ $I_D = 0.5 I_{DM}$ | | 3 | ns |
| $T_{d(off)}$ | $R_G = 1\ \Omega$ (External) | | 4 | ns |
| T_{off} | | | 5 | ns |

| VHF COMMUNICATIONS | | min. | typ. | max. |
|--------------------|---|------|------|-------|
| Gps | $V_{DD} = 50\text{ V}, P_{out} = 200\text{ W}, f = 175\text{ MHz}$ | 13 | | 16 db |
| Drain Efficiency | $V_{DD} = 50\text{ V}, P_{out} = 200\text{ W}, f = 175\text{ MHz}$ | 50 | | 60 % |
| Load Mismatch | $V_{DD} = 150\text{ V}, P_{out} = 300\text{ W}, f = 175\text{ MHz}$ | | | TBD |

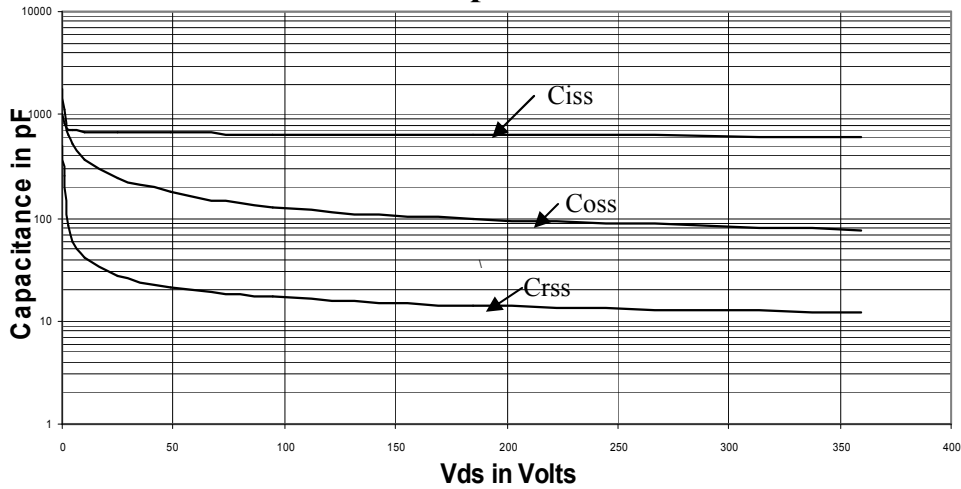
| 3T MRI | | min. | typ. | max. |
|------------------|---|------|------|------|
| Gps(1) | $V_{DD} = 150\text{ V}, P_{out} = 475\text{ W}, F = 128\text{ MHz}$ | 12 | 13 | db |
| Drain Efficiency | $V_{DD} = 50\text{ V}, P_{out} = 200\text{ W}, f = 175\text{ MHz}$ | 60 | 65 | % |

$Z_{in} = 0.59 - j0.90$
 $Z_{out} = 5.86 + j9.34$

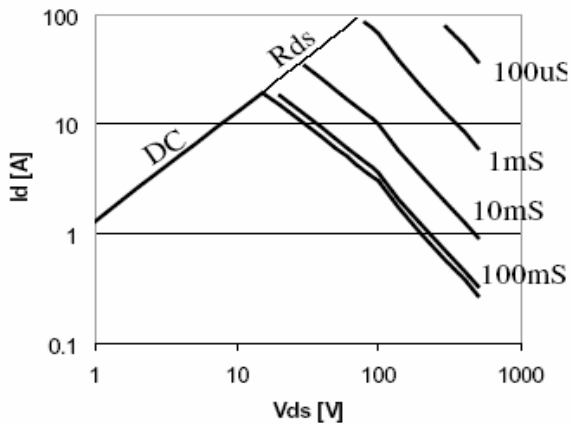
(1) - As measured under pulsed conditions (5 ms, 5%) with a gated Bias in Class AB, at P1dB.

PRELIMINARY

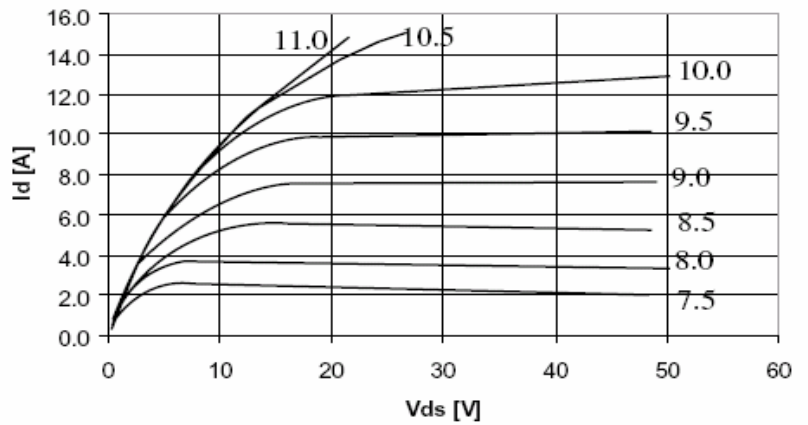
IXZ210N50L Capacitance verses Vds



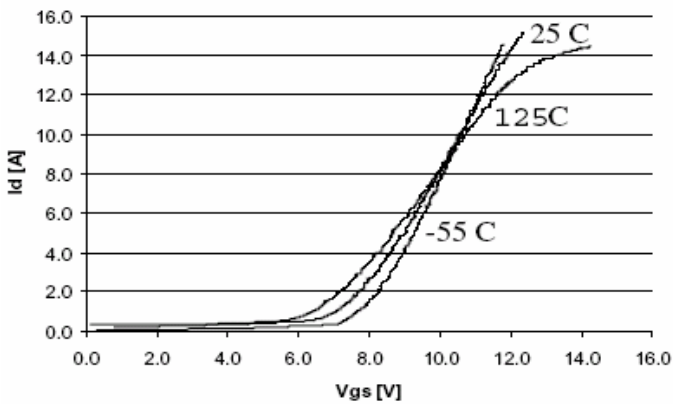
IXZ210N50L
Safe Operating Area



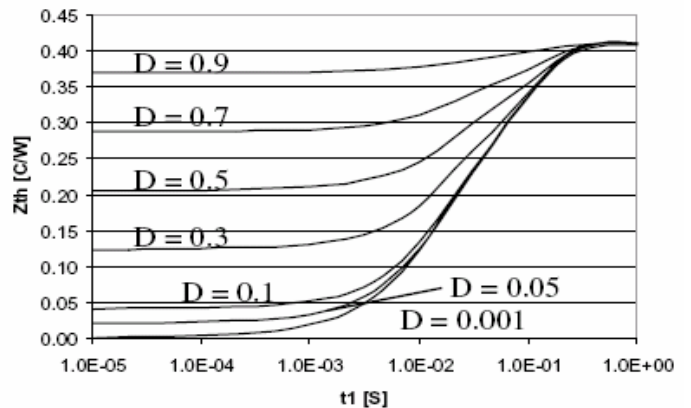
IXZ210N50L
Id vs Vds Curves



IXZ210N50L
Id vs Temp



IXZ210N50L
Thermal Response



PRELIMINARY



S-PARAMETERS for Ids = 200mA and Vds = 100V

| F MHz | mag S11 ang S11 | | mag S12 ang S12 | | mag S21 ang S21 | | mag S22 ang S22 | |
|-------|-----------------|---------|-----------------|-------|-----------------|--------|-----------------|---------|
| 2.00 | 1.00 | -61.49 | 0.01 | 72.80 | 64.02 | 152.19 | 0.88 | -51.42 |
| 2.56 | 0.95 | -74.73 | 0.01 | 50.41 | 54.88 | 136.18 | 0.78 | -61.85 |
| 3.12 | 0.92 | -85.18 | 0.01 | 36.03 | 46.48 | 125.23 | 0.70 | -69.85 |
| 3.68 | 0.90 | -94.18 | 0.02 | 33.42 | 39.80 | 117.56 | 0.64 | -76.52 |
| 4.24 | 0.89 | -101.51 | 0.01 | 24.74 | 34.43 | 111.83 | 0.59 | -81.83 |
| 4.80 | 0.88 | -107.76 | 0.02 | 23.38 | 30.24 | 107.62 | 0.56 | -86.25 |
| 5.36 | 0.88 | -113.39 | 0.01 | 18.24 | 26.95 | 104.21 | 0.53 | -90.12 |
| 5.92 | 0.87 | -118.05 | 0.02 | 21.02 | 24.14 | 101.58 | 0.50 | -93.86 |
| 6.48 | 0.87 | -122.38 | 0.02 | 20.15 | 21.89 | 99.12 | 0.48 | -96.91 |
| 7.04 | 0.87 | -125.89 | 0.01 | 8.21 | 20.03 | 97.24 | 0.47 | -99.89 |
| 7.60 | 0.87 | -129.15 | 0.02 | 11.90 | 18.44 | 95.40 | 0.46 | -102.23 |
| 8.16 | 0.87 | -132.06 | 0.02 | 5.83 | 17.06 | 93.95 | 0.45 | -104.53 |
| 8.72 | 0.88 | -134.68 | 0.02 | 9.67 | 15.88 | 92.60 | 0.45 | -106.30 |
| 9.28 | 0.88 | -136.96 | 0.02 | 3.87 | 14.88 | 91.37 | 0.44 | -107.93 |
| 9.84 | 0.88 | -139.10 | 0.01 | 11.87 | 13.96 | 90.58 | 0.43 | -109.34 |
| 10.40 | 0.88 | -141.24 | 0.01 | 2.91 | 13.13 | 89.43 | 0.43 | -110.69 |
| 10.96 | 0.88 | -142.85 | 0.01 | 5.48 | 12.44 | 88.35 | 0.43 | -112.27 |
| 11.52 | 0.88 | -144.45 | 0.01 | 3.66 | 11.77 | 87.69 | 0.43 | -113.80 |
| 12.08 | 0.88 | -145.98 | 0.01 | -0.44 | 11.15 | 86.75 | 0.43 | -114.55 |
| 12.64 | 0.88 | -147.31 | 0.01 | -1.43 | 10.63 | 85.86 | 0.43 | -115.60 |
| 13.20 | 0.89 | -148.50 | 0.01 | 4.33 | 10.16 | 85.17 | 0.43 | -116.56 |
| 13.76 | 0.89 | -149.72 | 0.02 | 7.20 | 9.71 | 84.54 | 0.43 | -117.37 |
| 14.32 | 0.89 | -150.84 | 0.01 | 3.37 | 9.29 | 83.87 | 0.43 | -118.56 |
| 14.88 | 0.89 | -151.71 | 0.01 | 6.52 | 8.94 | 83.32 | 0.44 | -118.83 |
| 15.44 | 0.89 | -152.76 | 0.01 | 6.34 | 8.58 | 82.74 | 0.44 | -119.56 |
| 16.00 | 0.89 | -152.79 | 0.01 | 4.79 | 8.57 | 82.70 | 0.44 | -119.64 |
| 16.56 | 0.89 | -153.60 | 0.01 | -2.91 | 8.26 | 82.15 | 0.44 | -120.22 |
| 17.12 | 0.89 | -154.31 | 0.01 | 4.60 | 7.96 | 81.57 | 0.44 | -120.79 |
| 17.68 | 0.89 | -155.09 | 0.01 | 3.83 | 7.68 | 81.02 | 0.45 | -121.37 |
| 18.24 | 0.89 | -155.97 | 0.01 | -3.23 | 7.43 | 80.50 | 0.45 | -121.90 |
| 18.80 | 0.89 | -156.64 | 0.01 | 2.53 | 7.19 | 79.91 | 0.46 | -122.45 |
| 19.36 | 0.90 | -157.26 | 0.01 | -7.10 | 6.95 | 79.33 | 0.46 | -123.00 |
| 19.92 | 0.90 | -157.88 | 0.02 | 2.86 | 6.74 | 78.75 | 0.46 | -123.39 |
| 20.48 | 0.90 | -158.51 | 0.01 | -2.49 | 6.55 | 78.27 | 0.47 | -123.87 |
| 21.04 | 0.90 | -159.06 | 0.01 | 0.66 | 6.36 | 77.80 | 0.47 | -124.24 |
| 21.60 | 0.90 | -159.38 | 0.01 | 1.39 | 6.17 | 77.35 | 0.48 | -124.84 |
| 22.16 | 0.90 | -160.04 | 0.01 | -0.33 | 6.01 | 76.69 | 0.48 | -125.20 |
| 22.72 | 0.90 | -160.47 | 0.01 | 0.37 | 5.85 | 76.38 | 0.48 | -125.64 |
| 23.28 | 0.90 | -160.97 | 0.01 | -1.11 | 5.70 | 75.91 | 0.49 | -126.10 |
| 23.84 | 0.90 | -161.44 | 0.01 | -4.88 | 5.55 | 75.27 | 0.49 | -126.27 |
| 24.40 | 0.90 | -161.68 | 0.01 | -1.29 | 5.41 | 74.80 | 0.50 | -126.56 |
| 24.96 | 0.90 | -162.29 | 0.01 | -0.45 | 5.28 | 74.39 | 0.50 | -126.29 |
| 25.52 | 0.90 | -162.56 | 0.02 | -2.68 | 5.16 | 73.82 | 0.51 | -127.36 |
| 26.08 | 0.90 | -162.98 | 0.01 | -5.35 | 5.04 | 73.46 | 0.51 | -127.78 |
| 26.64 | 0.90 | -163.29 | 0.01 | -4.70 | 4.92 | 72.84 | 0.52 | -128.36 |
| 27.20 | 0.90 | -163.81 | 0.01 | -3.38 | 4.82 | 72.28 | 0.52 | -128.52 |
| 27.76 | 0.91 | -164.05 | 0.01 | -7.12 | 4.71 | 71.75 | 0.52 | -128.88 |
| 28.32 | 0.90 | -164.26 | 0.01 | -1.90 | 4.59 | 71.36 | 0.53 | -129.17 |
| 28.88 | 0.91 | -164.63 | 0.01 | -1.98 | 4.51 | 70.81 | 0.53 | -129.54 |
| 29.44 | 0.91 | -164.83 | 0.01 | -2.49 | 4.42 | 70.42 | 0.54 | -129.83 |
| 30.00 | 0.91 | -165.24 | 0.01 | -3.00 | 4.31 | 69.85 | 0.54 | -130.17 |

PRELIMINARY

S-PARAMETERS for Ids = 500mA and Vds = 85V

| F MHz | mag S11 ang S11 | | mag S12 ang S12 | | mag S21 ang S21 | | mag S22 ang S22 | |
|-------|-----------------|---------|-----------------|-------|-----------------|--------|-----------------|---------|
| 2.00 | 1.00 | -75.60 | 0.01 | 51.67 | 98.32 | 135.58 | 0.83 | -77.19 |
| 2.56 | 0.92 | -88.14 | 0.01 | 41.71 | 76.78 | 120.80 | 0.73 | -90.21 |
| 3.12 | 0.89 | -97.38 | 0.01 | 26.40 | 61.88 | 111.89 | 0.65 | -99.74 |
| 3.68 | 0.87 | -105.23 | 0.01 | 20.78 | 51.39 | 105.98 | 0.61 | -107.26 |
| 4.24 | 0.87 | -111.43 | 0.01 | 17.69 | 43.57 | 101.80 | 0.57 | -113.20 |
| 4.80 | 0.87 | -116.93 | 0.01 | 13.57 | 37.75 | 98.72 | 0.55 | -118.05 |
| 5.36 | 0.87 | -121.73 | 0.01 | 11.35 | 33.33 | 96.32 | 0.53 | -121.94 |
| 5.92 | 0.87 | -125.77 | 0.01 | 14.74 | 29.65 | 94.63 | 0.52 | -125.82 |
| 6.48 | 0.88 | -129.43 | 0.01 | 18.53 | 26.68 | 92.99 | 0.51 | -128.85 |
| 7.04 | 0.88 | -132.51 | 0.01 | 5.00 | 24.33 | 91.67 | 0.51 | -131.50 |
| 7.60 | 0.89 | -135.38 | 0.01 | 11.59 | 22.32 | 90.53 | 0.50 | -133.72 |
| 8.16 | 0.89 | -137.91 | 0.01 | 4.28 | 20.59 | 89.62 | 0.50 | -135.79 |
| 8.72 | 0.90 | -140.21 | 0.01 | 2.67 | 19.14 | 88.81 | 0.50 | -137.30 |
| 9.28 | 0.90 | -142.15 | 0.01 | -0.50 | 17.89 | 87.97 | 0.49 | -138.59 |
| 9.84 | 0.91 | -144.08 | 0.01 | 7.28 | 16.77 | 87.74 | 0.49 | -139.86 |
| 10.40 | 0.91 | -145.79 | 0.01 | 3.08 | 15.74 | 86.98 | 0.49 | -140.96 |
| 10.96 | 0.91 | -147.24 | 0.01 | 4.92 | 14.91 | 86.27 | 0.49 | -142.13 |
| 11.52 | 0.91 | -148.71 | 0.01 | 4.59 | 14.13 | 85.96 | 0.49 | -143.40 |
| 12.08 | 0.92 | -150.00 | 0.01 | 0.05 | 13.37 | 85.37 | 0.49 | -143.90 |
| 12.64 | 0.92 | -151.28 | 0.01 | -3.47 | 12.74 | 84.86 | 0.49 | -144.57 |
| 13.20 | 0.92 | -152.29 | 0.01 | 3.75 | 12.20 | 84.42 | 0.49 | -145.23 |
| 13.76 | 0.93 | -153.33 | 0.01 | 6.98 | 11.65 | 84.06 | 0.49 | -145.74 |
| 14.32 | 0.93 | -154.29 | 0.01 | -1.36 | 11.15 | 83.58 | 0.49 | -146.57 |
| 14.88 | 0.93 | -155.22 | 0.01 | 7.91 | 10.75 | 83.43 | 0.49 | -146.58 |
| 15.44 | 0.93 | -156.05 | 0.01 | 6.46 | 10.32 | 83.03 | 0.50 | -147.08 |
| 16.00 | 0.93 | -156.02 | 0.01 | 4.31 | 10.32 | 83.01 | 0.50 | -147.08 |
| 16.56 | 0.93 | -156.80 | 0.01 | 3.45 | 9.95 | 82.75 | 0.50 | -147.29 |
| 17.12 | 0.93 | -157.45 | 0.01 | 3.31 | 9.60 | 82.30 | 0.50 | -147.77 |
| 17.68 | 0.93 | -158.24 | 0.01 | 7.43 | 9.26 | 81.97 | 0.50 | -148.05 |
| 18.24 | 0.93 | -159.00 | 0.01 | -0.33 | 8.98 | 81.69 | 0.50 | -148.23 |
| 18.80 | 0.93 | -159.52 | 0.01 | 8.91 | 8.71 | 81.27 | 0.51 | -148.60 |
| 19.36 | 0.94 | -160.13 | 0.01 | -5.90 | 8.41 | 80.91 | 0.51 | -148.70 |
| 19.92 | 0.94 | -160.64 | 0.01 | 6.68 | 8.18 | 80.48 | 0.51 | -148.83 |
| 20.48 | 0.94 | -161.22 | 0.01 | 6.33 | 7.96 | 80.17 | 0.51 | -149.05 |
| 21.04 | 0.94 | -161.70 | 0.01 | 13.23 | 7.74 | 79.82 | 0.51 | -149.25 |
| 21.60 | 0.94 | -162.01 | 0.01 | 10.44 | 7.51 | 79.49 | 0.52 | -149.55 |
| 22.16 | 0.94 | -162.64 | 0.01 | 4.32 | 7.33 | 79.06 | 0.52 | -149.56 |
| 22.72 | 0.94 | -163.02 | 0.01 | 6.04 | 7.14 | 78.83 | 0.52 | -149.69 |
| 23.28 | 0.94 | -163.36 | 0.01 | 8.23 | 6.97 | 78.51 | 0.52 | -149.75 |
| 23.84 | 0.94 | -163.92 | 0.01 | 4.67 | 6.80 | 77.96 | 0.53 | -149.91 |
| 24.40 | 0.94 | -164.13 | 0.01 | 3.79 | 6.62 | 77.61 | 0.53 | -149.91 |
| 24.96 | 0.94 | -164.61 | 0.01 | 7.04 | 6.48 | 77.41 | 0.53 | -150.19 |
| 25.52 | 0.95 | -164.83 | 0.01 | 4.29 | 6.34 | 76.89 | 0.53 | -150.00 |
| 26.08 | 0.94 | -165.25 | 0.01 | 1.02 | 6.20 | 76.63 | 0.53 | -150.21 |
| 26.64 | 0.95 | -165.49 | 0.01 | 1.65 | 6.06 | 76.12 | 0.54 | -150.41 |
| 27.20 | 0.95 | -165.87 | 0.01 | 4.26 | 5.95 | 75.63 | 0.54 | -150.40 |
| 27.76 | 0.95 | -166.18 | 0.01 | 4.00 | 5.82 | 75.23 | 0.54 | -150.46 |
| 28.32 | 0.95 | -166.42 | 0.01 | 11.55 | 5.68 | 74.90 | 0.55 | -150.43 |
| 28.88 | 0.95 | -166.71 | 0.01 | 9.83 | 5.58 | 74.44 | 0.55 | -150.48 |
| 29.44 | 0.95 | -166.89 | 0.01 | 5.47 | 5.47 | 74.11 | 0.55 | -150.57 |
| 30.00 | 0.95 | -167.21 | 0.01 | 2.61 | 5.35 | 73.63 | 0.55 | -150.69 |

PRELIMINARY



S-PARAMETERS for Ids = 200mA and Vds = 150V

| FREQ | mag S11 ang S11 | mag S12 ang S12 | mag S21 ang S21 | mag S22 ang S22 |
|--------|-----------------|-----------------|-----------------|------------------|
| 30.00 | 0.985 / -164 | 0.027 / -0.428 | 2.988 / 87.481 | 0.469 / -104.432 |
| 40.00 | 0.972 / -169.4 | 0.028 / -12.122 | 2.418 / 75.537 | 0.627 / -110.792 |
| 50.00 | 0.963 / -172.1 | 0.023 / -24.503 | 1.824 / 62.952 | 0.756 / -124.821 |
| 60.00 | 0.963 / -174.1 | 0.020 / -30.560 | 1.406 / 55.303 | 0.806 / -134.397 |
| 70.00 | 0.963 / -175.8 | 0.016 / -31.162 | 1.129 / 49.494 | 0.835 / -141.129 |
| 80.00 | 0.965 / -177.1 | 0.013 / -30.040 | 0.929 / 44.780 | 0.857 / -146.214 |
| 90.00 | 0.967 / -178.3 | 0.010 / -27.418 | 0.781 / 40.232 | 0.872 / -150.048 |
| 100.00 | 0.968 / -179.3 | 0.008 / -19.867 | 0.667 / 36.246 | 0.886 / -153.386 |
| 110.00 | 0.969 / 179.75 | 0.006 / -2.754 | 0.574 / 32.733 | 0.898 / -155.949 |
| 120.00 | 0.970 / 178.99 | 0.006 / 8.322 | 0.502 / 29.717 | 0.906 / -157.947 |
| 130.00 | 0.972 / 178.23 | 0.006 / 27.617 | 0.441 / 26.947 | 0.912 / -160.096 |
| 140.00 | 0.971 / 177.29 | 0.006 / 44.780 | 0.393 / 24.016 | 0.921 / -162.016 |
| 150.00 | 0.972 / 176.6 | 0.008 / 59.471 | 0.350 / 21.579 | 0.924 / -163.648 |
| 160.00 | 0.972 / 175.9 | 0.009 / 63.960 | 0.316 / 19.409 | 0.929 / -165.262 |
| 170.00 | 0.973 / 175.24 | 0.010 / 70.370 | 0.285 / 17.254 | 0.936 / -166.491 |
| 180.00 | 0.974 / 174.48 | 0.012 / 69.920 | 0.258 / 15.438 | 0.940 / -167.653 |
| 190.00 | 0.975 / 173.97 | 0.013 / 72.865 | 0.237 / 14.006 | 0.943 / -168.645 |
| 200.00 | 0.975 / 173.41 | 0.015 / 75.453 | 0.216 / 12.167 | 0.949 / -169.803 |
| 210.00 | 0.975 / 172.77 | 0.017 / 76.271 | 0.198 / 10.962 | 0.952 / -170.829 |
| 220.00 | 0.975 / 172.25 | 0.018 / 77.550 | 0.183 / 10.057 | 0.952 / -171.632 |
| 230.00 | 0.975 / 171.67 | 0.020 / 77.798 | 0.170 / 8.978 | 0.956 / -172.337 |
| 240.00 | 0.973 / 171.1 | 0.021 / 79.336 | 0.157 / 8.367 | 0.958 / -172.989 |
| 250.00 | 0.976 / 170.67 | 0.022 / 78.614 | 0.147 / 7.595 | 0.960 / -173.679 |
| 260.00 | 0.976 / 170.24 | 0.023 / 79.747 | 0.138 / 6.905 | 0.960 / -174.288 |
| 270.00 | 0.975 / 169.51 | 0.025 / 78.724 | 0.129 / 6.519 | 0.964 / -174.901 |
| 280.00 | 0.976 / 169.12 | 0.027 / 78.855 | 0.120 / 6.542 | 0.961 / -175.772 |
| 290.00 | 0.974 / 168.54 | 0.028 / 79.646 | 0.114 / 6.613 | 0.962 / -176.021 |
| 300.00 | 0.974 / 168.04 | 0.030 / 79.190 | 0.106 / 6.674 | 0.964 / -176.781 |
| 310.00 | 0.976 / 167.42 | 0.031 / 79.014 | 0.100 / 6.851 | 0.963 / -177.411 |
| 320.00 | 0.976 / 166.98 | 0.033 / 78.105 | 0.095 / 7.030 | 0.964 / -178.015 |
| 330.00 | 0.976 / 166.5 | 0.034 / 78.442 | 0.090 / 7.987 | 0.967 / -178.532 |
| 340.00 | 0.976 / 165.94 | 0.035 / 77.971 | 0.085 / 8.645 | 0.968 / -179.04 |
| 350.00 | 0.976 / 165.52 | 0.037 / 77.664 | 0.081 / 9.272 | 0.970 / -179.518 |
| 360.00 | 0.976 / 165.04 | 0.038 / 77.268 | 0.078 / 10.502 | 0.972 / -179.938 |
| 370.00 | 0.976 / 164.52 | 0.040 / 76.920 | 0.075 / 11.048 | 0.973 / 179.613 |
| 380.00 | 0.975 / 164 | 0.041 / 76.879 | 0.072 / 12.402 | 0.974 / 179.206 |
| 390.00 | 0.975 / 163.53 | 0.043 / 76.965 | 0.070 / 14.281 | 0.974 / 178.814 |
| 400.00 | 0.974 / 163.07 | 0.045 / 75.997 | 0.068 / 15.804 | 0.975 / 178.486 |
| 410.00 | 0.974 / 162.55 | 0.046 / 75.803 | 0.064 / 16.417 | 0.976 / 178.031 |
| 420.00 | 0.974 / 162.01 | 0.048 / 75.481 | 0.064 / 19.270 | 0.976 / 177.687 |
| 430.00 | 0.974 / 161.52 | 0.050 / 75.195 | 0.063 / 20.871 | 0.977 / 177.312 |
| 440.00 | 0.974 / 161.01 | 0.052 / 74.760 | 0.063 / 22.992 | 0.978 / 177.021 |
| 450.00 | 0.974 / 160.48 | 0.053 / 74.080 | 0.061 / 24.363 | 0.978 / 176.675 |
| 460.00 | 0.973 / 159.97 | 0.055 / 74.002 | 0.061 / 26.305 | 0.978 / 176.295 |
| 470.00 | 0.973 / 159.44 | 0.057 / 73.527 | 0.061 / 28.226 | 0.979 / 175.969 |
| 480.00 | 0.973 / 158.91 | 0.059 / 73.280 | 0.061 / 30.056 | 0.980 / 175.612 |
| 490.00 | 0.972 / 158.36 | 0.061 / 72.979 | 0.061 / 32.020 | 0.979 / 175.328 |
| 500.00 | 0.972 / 157.82 | 0.063 / 72.422 | 0.061 / 33.671 | 0.979 / 175.012 |

PRELIMINARY



S-PARAMETERS for $I_{ds} = 500\text{mA}$ and $V_{ds} = 150\text{V}$

| F MHz | mag S11 ang S11 | mag S12 ang S12 | mag S21 ang S21 | mag S22 ang S22 |
|--------|-----------------|-----------------|-----------------|-----------------|
| 30.00 | 0.972 / -166.83 | 0.024 / 1.31 | 4.123 / 80.919 | 0.437 / -122.05 |
| 40.00 | 0.961 / -171.25 | 0.024 / -9.42 | 3.213 / 71.151 | 0.550 / -122.51 |
| 50.00 | 0.953 / -173.48 | 0.021 / -20.57 | 2.409 / 60.370 | 0.679 / -131.24 |
| 60.00 | 0.954 / -175.24 | 0.018 / -25.77 | 1.852 / 53.746 | 0.745 / -138.67 |
| 70.00 | 0.956 / -176.58 | 0.014 / -25.66 | 1.479 / 48.975 | 0.784 / -144.34 |
| 80.00 | 0.959 / -177.85 | 0.012 / -24.77 | 1.214 / 44.916 | 0.815 / -148.72 |
| 90.00 | 0.962 / -178.91 | 0.009 / -16.63 | 1.021 / 41.457 | 0.837 / -152.18 |
| 100.00 | 0.963 / -179.92 | 0.008 / -10.71 | 0.876 / 38.215 | 0.855 / -155.14 |
| 110.00 | 0.965 / 179.28 | 0.007 / 3.84 | 0.760 / 35.387 | 0.871 / -157.52 |
| 120.00 | 0.966 / 178.51 | 0.006 / 21.43 | 0.669 / 32.840 | 0.881 / -159.44 |
| 130.00 | 0.968 / 177.76 | 0.007 / 33.62 | 0.590 / 30.369 | 0.890 / -161.35 |
| 140.00 | 0.968 / 176.94 | 0.007 / 50.63 | 0.530 / 27.881 | 0.899 / -163.19 |
| 150.00 | 0.969 / 176.26 | 0.009 / 57.23 | 0.476 / 25.671 | 0.902 / -164.66 |
| 160.00 | 0.970 / 175.50 | 0.011 / 67.29 | 0.431 / 23.797 | 0.910 / -166.27 |
| 170.00 | 0.969 / 174.91 | 0.011 / 68.91 | 0.392 / 21.572 | 0.918 / -167.38 |
| 180.00 | 0.970 / 174.21 | 0.013 / 70.26 | 0.359 / 19.869 | 0.922 / -168.47 |
| 190.00 | 0.971 / 173.68 | 0.014 / 73.60 | 0.330 / 18.274 | 0.926 / -169.38 |
| 200.00 | 0.971 / 173.07 | 0.015 / 74.18 | 0.299 / 17.196 | 0.932 / -170.41 |
| 210.00 | 0.971 / 172.50 | 0.017 / 74.24 | 0.280 / 14.998 | 0.937 / -171.32 |
| 220.00 | 0.972 / 171.86 | 0.019 / 75.56 | 0.260 / 13.641 | 0.938 / -172.13 |
| 230.00 | 0.972 / 171.45 | 0.019 / 77.06 | 0.242 / 12.329 | 0.942 / -172.75 |
| 240.00 | 0.972 / 170.91 | 0.021 / 76.73 | 0.225 / 11.133 | 0.945 / -173.40 |
| 250.00 | 0.976 / 170.36 | 0.023 / 77.85 | 0.212 / 9.768 | 0.947 / -174.06 |
| 260.00 | 0.974 / 170.07 | 0.024 / 78.35 | 0.199 / 9.038 | 0.948 / -174.64 |
| 270.00 | 0.971 / 169.36 | 0.025 / 78.20 | 0.187 / 8.074 | 0.953 / -175.13 |
| 280.00 | 0.972 / 168.83 | 0.027 / 77.62 | 0.176 / 7.216 | 0.952 / -175.79 |
| 290.00 | 0.971 / 168.31 | 0.029 / 78.26 | 0.165 / 6.391 | 0.952 / -176.24 |
| 300.00 | 0.972 / 167.79 | 0.030 / 78.12 | 0.156 / 6.231 | 0.953 / -176.96 |
| 310.00 | 0.973 / 167.33 | 0.031 / 78.03 | 0.149 / 5.587 | 0.952 / -177.58 |
| 320.00 | 0.973 / 166.83 | 0.033 / 77.49 | 0.140 / 5.009 | 0.954 / -178.17 |
| 330.00 | 0.972 / 166.36 | 0.034 / 77.15 | 0.133 / 5.291 | 0.957 / -178.68 |
| 340.00 | 0.972 / 165.83 | 0.036 / 76.97 | 0.126 / 4.941 | 0.959 / -179.18 |
| 350.00 | 0.974 / 165.40 | 0.037 / 77.21 | 0.120 / 4.956 | 0.960 / -179.63 |
| 360.00 | 0.973 / 164.91 | 0.039 / 76.74 | 0.115 / 4.758 | 0.963 / 179.99 |
| 370.00 | 0.974 / 164.44 | 0.040 / 76.57 | 0.110 / 4.702 | 0.964 / 179.59 |
| 380.00 | 0.972 / 163.91 | 0.042 / 76.23 | 0.105 / 5.234 | 0.966 / 179.22 |
| 390.00 | 0.972 / 163.46 | 0.043 / 75.70 | 0.101 / 6.041 | 0.966 / 178.82 |
| 400.00 | 0.971 / 162.98 | 0.045 / 75.39 | 0.097 / 6.513 | 0.968 / 178.45 |
| 410.00 | 0.971 / 162.47 | 0.046 / 75.27 | 0.094 / 5.051 | 0.968 / 178.05 |
| 420.00 | 0.971 / 161.95 | 0.048 / 74.85 | 0.090 / 7.829 | 0.969 / 177.73 |
| 430.00 | 0.971 / 161.46 | 0.050 / 74.48 | 0.087 / 8.676 | 0.971 / 177.35 |
| 440.00 | 0.971 / 160.95 | 0.051 / 74.33 | 0.084 / 9.387 | 0.973 / 177.04 |
| 450.00 | 0.970 / 160.44 | 0.053 / 73.64 | 0.082 / 11.009 | 0.972 / 176.73 |
| 460.00 | 0.970 / 159.94 | 0.055 / 73.50 | 0.080 / 11.543 | 0.972 / 176.37 |
| 470.00 | 0.970 / 159.42 | 0.057 / 73.10 | 0.078 / 13.145 | 0.973 / 176.05 |
| 480.00 | 0.970 / 158.90 | 0.059 / 72.90 | 0.077 / 14.432 | 0.974 / 175.71 |
| 490.00 | 0.969 / 158.36 | 0.061 / 72.67 | 0.075 / 16.109 | 0.973 / 175.41 |
| 500.00 | 0.969 / 157.83 | 0.063 / 71.99 | 0.074 / 17.437 | 0.974 / 175.12 |

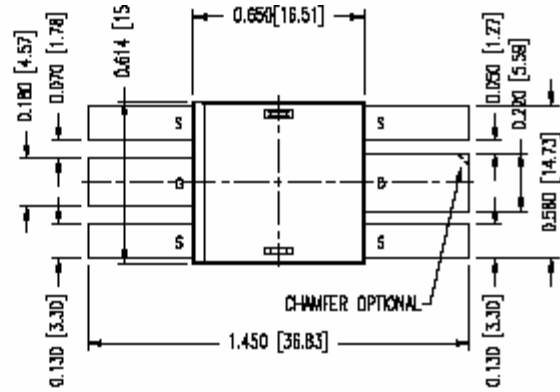
PRELIMINARY

S-PARAMETERS for $I_{ds} = 1A$ and $V_{ds} = 150V$

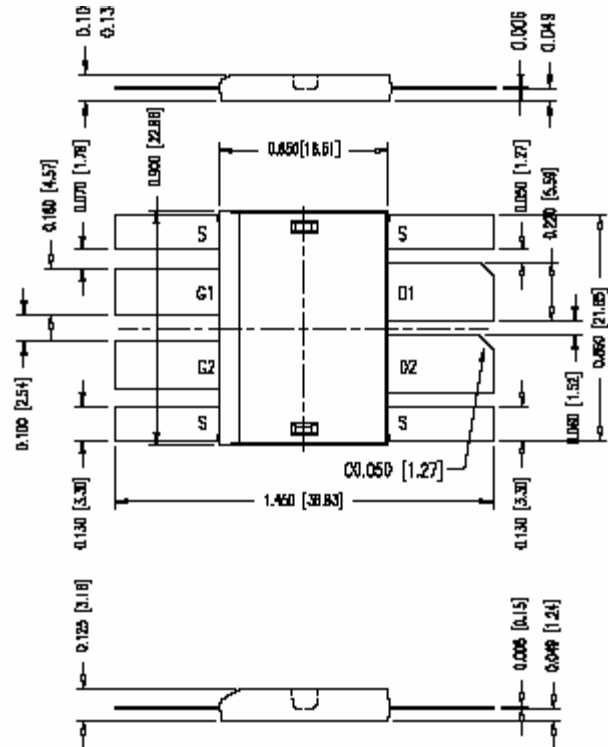
| F MHz | mag S11 ang S11 | mag S12 ang S12 | mag S21 ang S21 | mag S22 ang S22 |
|-------|------------------|-----------------|-----------------|------------------|
| 30 | 0.963 / -169.123 | 0.020 / 3.477 | 4.942 / 77.820 | 0.435 / -137.513 |
| 40 | 0.951 / -172.917 | 0.021 / -4.926 | 3.815 / 69.106 | 0.505 / -134.339 |
| 50 | 0.943 / -174.788 | 0.018 / -12.764 | 2.890 / 58.963 | 0.618 / -137.849 |
| 60 | 0.946 / -176.203 | 0.016 / -18.683 | 2.230 / 52.200 | 0.687 / -142.755 |
| 70 | 0.948 / -177.357 | 0.014 / -16.858 | 1.779 / 47.123 | 0.733 / -147.101 |
| 80 | 0.952 / -178.457 | 0.012 / -16.420 | 1.458 / 43.025 | 0.772 / -150.627 |
| 90 | 0.955 / -179.449 | 0.009 / -10.102 | 1.220 / 39.458 | 0.802 / -153.615 |
| 100 | 0.957 / 179.705 | 0.008 / -1.389 | 1.038 / 36.186 | 0.824 / -156.184 |
| 110 | 0.960 / 178.936 | 0.007 / 9.658 | 0.894 / 33.271 | 0.843 / -158.326 |
| 120 | 0.962 / 178.170 | 0.007 / 24.560 | 0.783 / 30.862 | 0.858 / -160.076 |
| 130 | 0.963 / 177.479 | 0.007 / 36.896 | 0.688 / 28.701 | 0.870 / -161.908 |
| 140 | 0.964 / 176.627 | 0.008 / 51.624 | 0.615 / 26.345 | 0.880 / -163.607 |
| 150 | 0.965 / 175.974 | 0.009 / 60.710 | 0.551 / 24.277 | 0.886 / -165.069 |
| 160 | 0.966 / 175.320 | 0.011 / 64.471 | 0.498 / 22.370 | 0.895 / -166.662 |
| 170 | 0.966 / 174.688 | 0.012 / 68.556 | 0.451 / 20.406 | 0.904 / -167.7 |
| 180 | 0.968 / 174.005 | 0.013 / 70.179 | 0.415 / 18.797 | 0.909 / -168.732 |
| 190 | 0.969 / 173.455 | 0.014 / 72.336 | 0.383 / 17.392 | 0.915 / -169.635 |
| 200 | 0.969 / 172.895 | 0.016 / 75.100 | 0.350 / 15.646 | 0.921 / -170.668 |

PRELIMINARY

IXZ210N50L



IXZ2210N50L



PRELIMINARY

Doc #dsIXZ210N50L REV 04/07
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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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