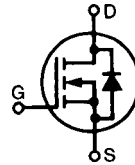


MegaMOS™ FET

IRFP 360

$V_{DSS} = 400\text{ V}$
 $I_{D25} = 23\text{ A}$
 $R_{DS(on)} = 0.20\ \Omega$

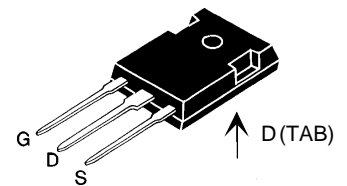
N-Channel Enhancement Mode



Preliminary data

| Symbol | Test Conditions | Maximum Ratings | |
|---|---|-----------------|------------------|
| V_{DSS} | $T_J = 25^\circ\text{C}$ to 150°C | 400 | V |
| V_{DGR} | $T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1.0\text{ M}\Omega$ | 400 | V |
| V_{GS} | Continuous | ± 20 | V |
| V_{GSM} | Transient | ± 30 | V |
| I_{D25} | $T_C = 25^\circ\text{C}$ | 23 | A |
| I_{D100} | $T_C = 100^\circ\text{C}$ | 14 | A |
| I_{DM} | $T_C = 25^\circ\text{C}$, pulse width limited by T_{JM} | 92 | A |
| I_{AR} | | 23 | A |
| E_{AR} | $T_C = 25^\circ\text{C}$ | 30 | mJ |
| dv/dt | $I_S \leq I_{DM}$, di/dt $T_J \leq 150^\circ\text{C}$, $R_G = 2\ \Omega$ | 5 | V/ns |
| P_D | $T_C = 25^\circ\text{C}$ | 300 | W |
| T_J | | -55 ... +150 | $^\circ\text{C}$ |
| T_{JM} | | 150 | $^\circ\text{C}$ |
| T_{stg} | | -55 ... +150 | $^\circ\text{C}$ |
| M_d | Mounting torque | 1.13/10 | Nm/lb.in. |
| Weight | | 6 | g |
| Max lead temperature for soldering | | 300 | $^\circ\text{C}$ |
| 1.6 mm (0.062 in.) from case for 10 s | | | |

TO-247 AD



G = Gate, D = Drain,
 S = Source, TAB = Drain

Features

- Fast switching times
- International standard packages
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- High commuting dv/dt rating

Applications

- DC choppers
- Motor Controls
- Switch-mode and resonant-mode
- Uninterruptable power supplies (UPS)

Advantages

- Space savings
- High power density
- Easy to mount with 1 screw (isolated mounting screw hole)

| Symbol | Test Conditions | Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified) | | |
|--------------|---|---|------|---------------------------------------|
| | | min. | typ. | max. |
| V_{DSS} | $V_{GS} = 0\text{ V}$, $I_D = 250\ \mu\text{A}$ | 400 | | V |
| $V_{GS(th)}$ | $V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$ | 2 | | V |
| I_{GSS} | $V_{GS} = \pm 20\text{ V}_{DC}$, $V_{DS} = 0$ | | | $\pm 100\text{ nA}$ |
| I_{DSS} | $V_{DS} = V_{DSS}$, $T_J = 25^\circ\text{C}$ $V_{GS} = 0\text{ V}$, $T_J = 125^\circ\text{C}$ | | | 25 μA 250 μA |
| $R_{DS(on)}$ | $V_{GS} = 10\text{ V}$, $I_D = 14\text{ A}$ Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$ | | | 0.20 Ω |

This data reflects the objective technical specification and characterization data from engineering lots.

IXYS reserves the right to change limits, test conditions, and dimensions.

95509A (4/95)

| Symbol | Test Conditions | Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified) | | |
|--------------|---|---|------|------|
| | | min. | typ. | max. |
| g_{fs} | $V_{DS} = 10\text{ V}; I_D = 14\text{ A}$, pulse test | 14 | | S |
| C_{iss} | $V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$ | | 4500 | pF |
| C_{oss} | | | 1100 | pF |
| C_{rss} | | | 490 | pF |
| $t_{d(on)}$ | $V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = I_{D25}$ $R_G = 4.3\ \Omega$ (External) | | 24 | ns |
| t_r | | | 33 | ns |
| $t_{d(off)}$ | | | 100 | ns |
| t_f | | | 30 | ns |
| $Q_{g(on)}$ | $V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = I_{D25}$ | | 210 | nC |
| Q_{gs} | | | 30 | nC |
| Q_{gd} | | | 110 | nC |
| R_{thJC} | | | 0.45 | K/W |
| R_{thCK} | | 0.25 | | K/W |

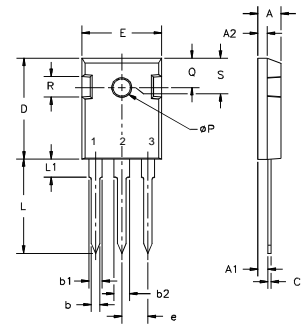
Source-Drain Diode

Ratings and Characteristics

($T_J = 25^\circ\text{C}$ unless otherwise specified)

| Symbol | Test Conditions | Min. | Typ. | Max. |
|----------|---|------|------|-------------------|
| I_S | $V_{GS} = 0$ | | | 23 A |
| I_{SM} | Repetitive; pulse width limited by T_{JM} | | | 92 A |
| V_{SD} | $I_F = I_S, V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$ | | | 1.8 V |
| t_{rr} | $I_F = I_S, -di/dt = 100\text{ A}/\mu\text{s}$ | | 420 | 630 ns |
| Q_{rr} | | | 5.6 | 8.4 μC |

TO-247 AD Outline



Terminals: 1 - Gate 2 - Drain
3 - Source Tab - Drain

| 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 |
| L ₁ | | 4.50 | | .177 |
| ∅P | 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 |

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