

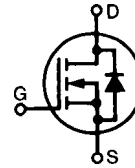
# HiPerFET™ Power MOSFETs Q-Class

**IXFH 26N60Q**  
**IXFT 26N60Q**

**V<sub>DSS</sub> = 600 V**  
**I<sub>D25</sub> = 26 A**  
**R<sub>DS(on)</sub> = 0.25 Ω**

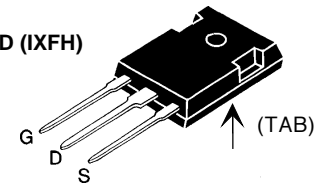
**t<sub>rr</sub> ≤ 250 ns**

N-Channel Enhancement Mode  
Avalanche Rated, High dv/dt, Low Q<sub>g</sub>

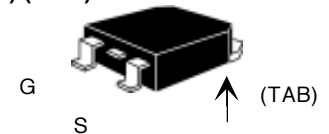


| Symbol           | Test Conditions   | Maximum Ratings |                   |
|------------------|---|-----------------|-------------------|
| V <sub>DSS</sub> | T <sub>J</sub> = 25°C to 150°C  | 600             | V                 |
| V <sub>DGR</sub> | T <sub>J</sub> = 25°C to 150°C; R <sub>GS</sub> = 1 MΩ  | 600             | V                 |
| V <sub>GS</sub>  | Continuous  | ±20             | V                 |
| V <sub>GSM</sub> | Transient   | ±30             | V                 |
| I <sub>D25</sub> | T <sub>C</sub> = 25°C   | 26              | A                 |
| I <sub>DM</sub>  | T <sub>C</sub> = 25°C, pulse width limited by T <sub>JM</sub>   | 104             | A                 |
| I <sub>AR</sub>  | T <sub>C</sub> = 25°C   | 26              | A                 |
| E <sub>AR</sub>  | T <sub>C</sub> = 25°C   | 45              | mJ                |
| E <sub>AS</sub>  | T <sub>C</sub> = 25°C   | 1.5             | J                 |
| dv/dt            | I <sub>S</sub> ≤ I <sub>DM</sub> , di/dt ≤ 100 A/μs, V <sub>DD</sub> ≤ V <sub>DSS</sub> ,<br>T <sub>J</sub> ≤ 150°C, R <sub>G</sub> = 2 Ω | 5               | V/ns              |
| P <sub>D</sub>   | T <sub>C</sub> = 25°C   | 360             | W                 |
| T <sub>J</sub>   |   | -55 ... +150    | °C                |
| T <sub>JM</sub>  |   | 150             | °C                |
| T <sub>stg</sub> |   | -55 ... +150    | °C                |
| T <sub>L</sub>   | 1.6 mm (0.063 in) from case for 10 s  | 300             | °C                |
| M <sub>d</sub>   | Mounting torque   | TO-247          | 1.13/10 Nm/lb.in. |
| Weight           |   | TO-247          | 6 g               |
|                  |   | TO-268          | 4 g               |

TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



G = Gate  
S = Source

D = Drain  
TAB = Drain

## Features

- Low gate charge
- International standard packages
- Epoxy meet UL 94 V-0, flammability classification
- Low R<sub>DS(on)</sub> HDMOS™ process
- Rugged polysilicon gate cell structure
- Avalanche energy and current rated
- Fast intrinsic Rectifier

## Advantages

- Easy to mount
- Space savings
- High power density

| Symbol              | Test Conditions   | Characteristic Values<br>(T <sub>J</sub> = 25°C, unless otherwise specified) |      |               |
|---------------------|---|--|------|---------------|
|                     |   | min.   | typ. | max.          |
| V <sub>DSS</sub>    | V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250 μA  | 600  |      | V             |
| V <sub>GS(th)</sub> | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 4 mA   | 2.5  |      | 4.5 V         |
| I <sub>GSS</sub>    | V <sub>GS</sub> = ±20 V <sub>DC</sub> , V <sub>DS</sub> = 0   |  |      | ±200 nA       |
| I <sub>DSS</sub>    | V <sub>DS</sub> = V <sub>DSS</sub> , V <sub>GS</sub> = 0 V  |  |      | 25 μA<br>1 mA |
| R <sub>DS(on)</sub> | V <sub>GS</sub> = 10 V, I <sub>D</sub> = 0.5 I <sub>D25</sub><br>Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 % |  |      | 0.25 Ω        |

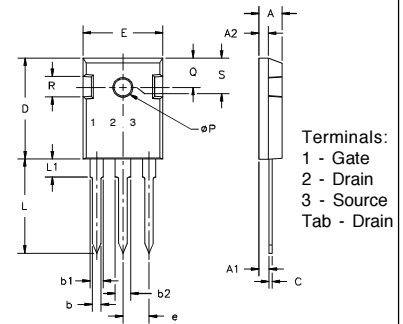
| Symbol       | Test Conditions  | Characteristic Values<br>( $T_J = 25^\circ\text{C}$ , unless otherwise specified) |      |          |
|--------------|--|---|------|----------|
|              |  | min.  | typ. | max.     |
| $g_{fs}$     | $V_{DS} = 10\text{ V}$ , $I_D = 0.5\text{ I}_{D25}$ , pulse test   | 14  | 22   | S        |
| $C_{iss}$    | $V_{GS} = 0\text{ V}$ , $V_{DS} = 25\text{ V}$ , $f = 1\text{ MHz}$  |   | 5100 | pF       |
| $C_{oss}$    |  |   | 560  | pF       |
| $C_{rss}$    |  |   | 210  | pF       |
| $t_{d(on)}$  | $V_{GS} = 10\text{ V}$ , $V_{DS} = 0.5\text{ V}_{DSS}$ , $I_D = 0.5\text{ I}_{D25}$<br>$R_G = 2.0\ \Omega$ (External), |   | 30   | ns       |
| $t_r$        |  |   | 32   | ns       |
| $t_{d(off)}$ |  |   | 80   | ns       |
| $t_f$        |  |   | 16   | ns       |
| $Q_{g(on)}$  | $V_{GS} = 10\text{ V}$ , $V_{DS} = 0.5\text{ V}_{DSS}$ , $I_D = 0.5\text{ I}_{D25}$                                    |   | 150  | nC       |
| $Q_{gs}$     |  |   | 34   | nC       |
| $Q_{gd}$     |  |   | 80   | nC       |
| $R_{thJC}$   | TO-247   |   |      | 0.35 K/W |
| $R_{thCK}$   |  |   | 0.25 | K/W      |

### Source-Drain Diode

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

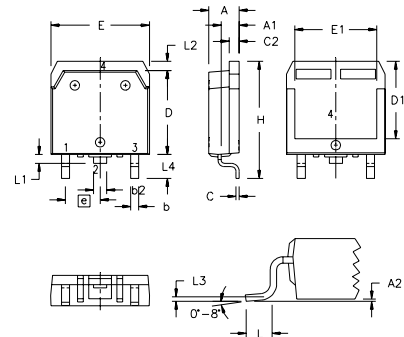
| Symbol   | Test Conditions  | min. | typ. | max.          |
|----------|--|------|------|---------------|
| $I_S$    | $V_{GS} = 0\text{ V}$  |      |      | 26 A          |
| $I_{SM}$ | Repetitive; pulse width limited by $T_{JM}$  |      |      | 104 A         |
| $V_{SD}$ | $I_F = I_S$ , $V_{GS} = 0\text{ V}$ ,<br>Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$ |      |      | 1.5 V         |
| $t_{rr}$ | $I_F = I_S$ , $-di/dt = 100\text{ A}/\mu\text{s}$ , $V_R = 100\text{ V}$                                 |      | 1    | 250 ns        |
| $Q_{RM}$ |  |      | 10   | $\mu\text{C}$ |
| $I_{RM}$ |  |      |      | A             |

### TO-247 AD (IXFH) Outline



| Dim.           | Millimeter |       | Inches |       |
|----------------|------------|-------|--------|-------|
|                | Min.       | Max.  | Min.   | Max.  |
| A              | 4.7        | 5.3   | .185   | .209  |
| A <sub>1</sub> | 2.2        | 2.54  | .087   | .102  |
| A <sub>2</sub> | 2.2        | 2.6   | .087   | .102  |
| b              | 1.0        | 1.4   | .040   | .055  |
| b <sub>1</sub> | 1.65       | 2.13  | .065   | .084  |
| b <sub>2</sub> | 2.87       | 3.12  | .113   | .123  |
| C              | 4          | 8     | .16    | .315  |
| 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 <sub>1</sub> |            | 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   |

### TO-268 Outline



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

| SYM            | INCHES |      | MILLIMETERS |       |
|----------------|--------|------|-------------|-------|
|                | MIN    | MAX  | MIN         | MAX   |
| A              | .193   | .201 | 4.90        | 5.10  |
| A <sub>1</sub> | .106   | .114 | 2.70        | 2.90  |
| A <sub>2</sub> | .001   | .010 | 0.02        | 0.25  |
| b              | .045   | .057 | 1.15        | 1.45  |
| b <sub>2</sub> | .075   | .083 | 1.90        | 2.10  |
| C              | .016   | .026 | 0.40        | 0.65  |
| C <sub>2</sub> | .057   | .063 | 1.45        | 1.60  |
| D              | .543   | .551 | 13.80       | 14.00 |
| D <sub>1</sub> | .488   | .500 | 12.40       | 12.70 |
| E              | .624   | .632 | 15.85       | 16.05 |
| E <sub>1</sub> | .524   | .535 | 13.30       | 13.60 |
| e              | .215   | BSC  | 5.45        | BSC   |
| H              | .736   | .752 | 18.70       | 19.10 |
| L              | .094   | .106 | 2.40        | 2.70  |
| L <sub>1</sub> | .047   | .055 | 1.20        | 1.40  |
| L <sub>2</sub> | .039   | .045 | 1.00        | 1.15  |
| L <sub>3</sub> | .010   | BSC  | 0.25        | BSC   |
| L <sub>4</sub> | .150   | .161 | 3.80        | 4.10  |

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



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