

HiPerFET™ Power MOSFET



| Type | V _{DSS} max. | R _{DS(ON)} max. | Chip type | Chip size dimensions | | Source - bond wire recommended | Equivalent device data sheet |
|----------------|--------------------------|-----------------------------|--------------|-------------------------|-----------|--------------------------------------|------------------------------------|
| | V | Ω | | mm | mils | | |
| IXFD76N07-7X | 70 | 0.015 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH76N07 |
| IXFD180N07-9X | | 0.007 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK180N07 |
| IXFD340N07-9Y | | 0.005 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN340N07 |
| IXFD180N085-9X | 85 | 0.007 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK180N085 |
| IXFD280N085-9Y | | 0.005 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN280N085 |
| IXFD75N10-7X | 100 | 0.026 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH75N10 |
| IXFD80N10Q-8X | | 0.018 | 8X | 12.2 x 7.20 | 480 x 283 | 15 mil x 4 | IXFH80N10Q |
| IXFD170N10-9X | | 0.011 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK170N10 |
| IXFD230N10-9Y | | 0.007 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN230N10 |
| IXFD70N15-7X | 150 | 0.032 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH70N15 |
| IXFD150N15-9X | | 0.013 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK150N15 |
| IXFD50N20-7X | 200 | 0.049 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH50N20 |
| IXFD60N20F-74 | | 0.042 | 74 | 9.58 x 7.13 | 377 x 281 | 15 mil x 3 | IXFH60N20F |
| IXFD66N20Q-72 | | 0.044 | 72 | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH66N20Q |
| IXFD88N20Q-82 | | 0.035 | 82 | 12.17 x 7.14 | 479 x 281 | 15 mil x 4 | IXFH88N20Q |
| IXFD120N20-9X | | 0.020 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK120N20 |
| IXFD180N20-9Y | | 0.014 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN180N20 |
| IXFD40N30Q-72 | 300 | 0.095 | 72 | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH40N30Q |
| IXFD40N30-7X | | 0.090 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH40N30 |
| IXFD52N30Q-82 | | 0.075 | 82 | 12.17 x 7.14 | 479 x 281 | 15 mil x 4 | IXFH52N30Q |
| IXFD73N30Q-8Y | | 0.050 | 8Y | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK73N30Q |
| IXFD90N30-9X | | 0.040 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK90N30 |
| IXFD130N30-9Y | | 0.028 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN130N30 |

This table reflects only new designed chips. Please contact factory for older designs.

HiPerFET™ Power MOSFETs

The High Performance MOSFET family of Power MOSFETs is designed to provide superior dv/dt performance while eliminating the need for discrete, fast recovery "free wheeling diodes" in a broad range of power switching applications.

This class of Power MOSFET uses IXYS' HDMOS process, which improves the ruggedness of the MOSFET while reducing the reverse recovery time of the fast intrinsic diode to 250 ns or less at elevated (150°C) junction temperature. The performance of the fast intrinsic diode is comparable to discrete high voltage diodes and is tailored to minimize power dissipation and stress in the MOSFET.

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| | V | Ω | | mm | mils | | |
| IXFD13N50F-5F | 500 | 0.420 | 5F | 7.35 x 5.91 | 289 x 233 | 10 mil x 4 | IXFH13N50F |
| IXFD21N50F-7F | | 0.270 | 7F | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH21N50F |
| IXFD24N50-7X | | 0.250 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH24N50 |
| IXFD26N50Q-72 | | 0.235 | 72 | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH26N50Q |
| IXFD28N50F-74 | | 0.220 | 74 | 9.58 x 7.13 | 377 x 281 | 15 mil x 3 | IXFH28N50F |
| IXFD32N50-8X | | 0.160 | 8X | 12.2 x 7.20 | 480 x 283 | 15 mil x 4 | IXFH32N50 |
| IXFD40N50Q-82 | | 0.150 | 82 | 12.17 x 7.14 | 479 x 281 | 15 mil x 4 | IXFH40N50Q |
| IXFD40N50Q2-84 | | 0.150 | 84 | 12.17 x 7.15 | 479 x 281 | 15 mil x 4 | IXFH40N50Q2 |
| IXFD44N50F-8F | | 0.130 | 8F | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK48N50Q |
| IXFD48N50Q-8Y | | 0.110 | 8Y | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK48N50Q |
| IXFD55N50-9X | | 0.100 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK55N50 |
| IXFD55N50F-9F | | 0.100 | 9F | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK55N50F |
| IXFD66N50Q2-94 | | 0.085 | 94 | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK66N50Q2 |
| IXFD80N50Q2-95 | 0.070 | 95 | 15.81 x 12.50 | 623 x 492 | 15 mil x 6 | IXFB80N50Q2 | |
| IXFD80N50-9Y | 0.060 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN80N50 | |
| IXFD36N55Q2-84 | 550 | 0.180 | 84 | 12.17 x 7.15 | 479 x 281 | 15 mil x 4 | IXFH36N55Q2 |
| IXFD72N55Q2-95 | | 0.080 | 95 | 15.81 x 12.50 | 623 x 492 | 15 mil x 6 | IXFB72N55Q2 |
| IXFD60N55Q2-94 | | 0.010 | 94 | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK60N55Q2 |
| IXFD23N60Q-72 | 600 | 0.350 | 72 | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH23N60Q |
| IXFD20N60-7X | | 0.350 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH20N60 |
| IXFD30N60Q-82 | | 0.250 | 82 | 12.17 x 7.14 | 479 x 281 | 15 mil x 4 | IXFH30N60Q |
| IXFD36N60Q-8Y | | 0.170 | 8Y | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK36N60Q |
| IXFD44N60-9X | | 0.140 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK44N60 |
| IXFD52N60Q2-94 | | 0.130 | 94 | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK52N60Q2 |
| IXFD70N60Q2-95 | | 0.090 | 95 | 15.81 x 12.50 | 623 x 492 | 15 mil x 6 | IXFB70N60Q2 |
| IXFD60N60-9Y | | 0.090 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN60N60 |

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HiPerFET™s offer extended dv/dt ruggedness

The HiPerFET™ series of Power MOSFETs have an extended stress capability in applications where the intrinsic "free-wheeling diode" is used. Both static and dynamic dv/dt withstand capability have been improved to offer a significant margin of safety in high stress conditions found in many types of inductive load switching applications.

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|-----------------|--------------------------|-----------------------------|---------------|-------------------------|-------------|--------------------------------------|------------------------------------|
| | V | Ω | | mm | mils | | |
| IXFD15N80-7X | 800 | 0.700 | 7X | 8.84 x 7.18 | 348 x 283 | 15 mil x 3 | IXFH15N80 |
| IXFD15N80Q-7Y | | 0.700 | 7Y | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH15N80Q |
| IXFD17N80Q-72 | | 0.670 | 72 | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH17N80Q |
| IXFD20N80Q-8X | | 0.450 | 8X | 12.2 x 7.20 | 480 x 283 | 15 mil x 4 | IXFH20N80Q |
| IXFD23N80Q-82 | | 0.440 | 82 | 12.17 x 7.14 | 479 x 281 | 15 mil x 4 | IXFH23N80Q |
| IXFD27N80Q-8Y | | 0.350 | 8Y | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK27N80Q |
| IXFD34N80-9X | | 0.250 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK34N80 |
| IXFD38N80Q2-94 | | 0.250 | 94 | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK38N80Q2 |
| IXFD50N80Q2-95 | | 0.170 | 95 | 15.81 x 12.50 | 623 x 492 | 15 mil x 6 | IXFB50N80Q2 |
| IXFD44N80-9Y | 0.160 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN44N80 | |
| IXFD12N90-7L | 900 | 0.900 | 7L | 8.91 x 7.22 | 351 x 284 | 12 mil x 4 | IXFH12N90 |
| IXFD16N90Q-8X | | 0.650 | 8X | 12.2 x 7.20 | 480 x 283 | 15 mil x 4 | IXFH16N90Q |
| IXFD24N90Q-8Y | | 0.500 | 8Y | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK24N90Q |
| IXFD26N90-9X | | 0.330 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK26N90 |
| IXFD39N90-9Y | | 0.220 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN39N90 |
| IXFD6N100F-5F | 1000 | 2.000 | 5F | 7.35 x 5.91 | 289 x 233 | 10 mil x 2 | IXFH6N100F |
| IXFD6N100Q-5U | | 2.000 | 5U | 6.81 x 6.74 | 268 x 265 | 10 mil x 2 | IXFH6N100Q |
| IXFD10N100-7Y | | 1.200 | 7Y | 8.89 x 7.16 | 350 x 282 | 15 mil x 3 | IXFH10N100 |
| IXFD14N100Q2-7F | | 1.000 | 7F | 8.89 x 7.16 | 350 x 282 | 12 mil x 4 | IXFH14N100Q2 |
| IXFD14N100-8X | | 0.750 | 8X | 12.2 x 7.20 | 480 x 283 | 15 mil x 4 | IXFH14N100 |
| IXFD21N100Q-8Y | | 0.520 | 8Y | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK21N100Q |
| IXFD21N100F-8F | | 0.520 | 8F | 13.98 x 9.02 | 550 x 355 | 12 mil x 6 | IXFK21N100F |
| IXFD24N100-9X | | 0.420 | 9X | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK24N100 |
| IXFD24N100F-9F | | 0.420 | 9F | 14.20 x 10.60 | 559 x 417 | 15 mil x 6 | IXFK24N100F |
| IXFD38N100Q2-95 | | 0.280 | 95 | 15.81 x 12.50 | 623 x 492 | 15 mil x 6 | IXFB38N100Q2 |
| IXFD36N100-9Y | | 0.270 | 9Y | 15.81 x 14.31 | 623 x 563 | 12 mil x 12 | IXFN36N100 |
| IXFD3N120-4U | 1200 | 4.500 | 4U | 5.77 x 4.96 | 227 x 195 | 12 mil x 1 | IXFP3N120 |

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'Q - Class' and 'Q2 - Class' HiPerFET™ MOSFETs for Lower Gate Charge and Faster Switching

New 'Q - class' HiPerFET MOSFETs (identified by the suffix letter Q) are the result of a revolutionary new chip design, which decreases the MOSFET's total gate charge Q_g and the Miller capacitance C_{rss}, while maintaining the ruggedness and fast switching intrinsic diode of the company's current HiPerFET product line. The result is a MOSFET with dramatically improved switching efficiencies and thus enabling higher frequency operation and smaller power supplies.

The newer 'Q2-Class' line combines the low gate charge advantages of Q-Class with a double-metal construction resulting in a new generation of MOSFETs with an intrinsic gate resistance an order of magnitude lower than conventional MOSFETs. The resulting reduction in switching losses allows large MOSFETs to operate up satisfactorily up to the multi-megahertz region.