

Product Summary

| BV _{DSS} | R _{DS(ON)} max | I _D max T _A = +25°C |
|-------------------|-------------------------------|--|
| 20V | 9mΩ @ V _{GS} = 4.5V | 15.2A |
| | 15mΩ @ V _{GS} = 2.5V | 13.8A |

Application

- General Purpose Interfacing Switch
- Power Management Functions

Ordering Information

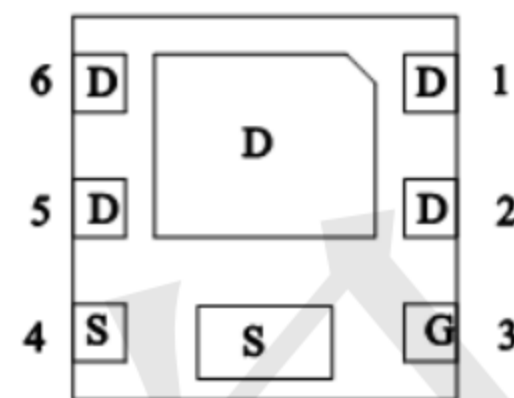
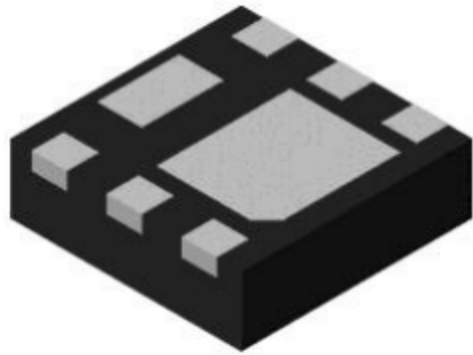
- Shipping Qty:3000 /7inch Tape& Reel

Features

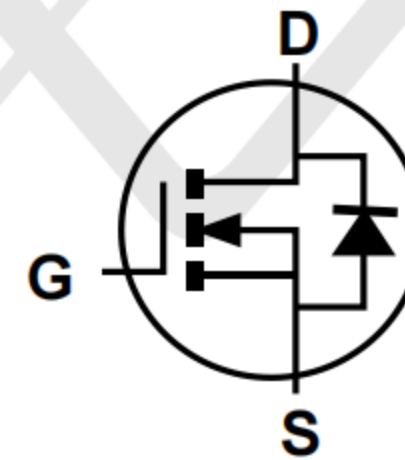
- 0.6mm Profile – Ideal for Low Profile Applications
- PCB Footprint of 4mm²
- Low Gate Threshold Voltage
- Low On-Resistance

Package and Pin Configuration

DFN2X2



Circuit diagram



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

| Characteristic | | Symbol | Value | Unit |
|--|--------------|------------------|--------------|------|
| Drain-Source Voltage | | V _{DSS} | 20 | V |
| Gate-Source Voltage | | V _{GSS} | ±8 | V |
| Continuous Drain Current (Note 6) V _{GS} = 4.5V | Steady State | I _D | 11.6 9.3 | A |
| | t < 10s | I _D | 15.2 12.2 | A |
| Pulsed Drain Current (380μs Pulse, Duty Cycle = 1%) | | I _{DM} | 70 | A |
| Maximum Body Diode Continuous Current (Note 6) | | I _S | 2.1 | A |
| Avalanche Current (Note 7) L = 0.1mH | | I _{AS} | 23 | A |
| Avalanche Energy (Note 7) L = 0.1mH | | E _{AS} | 28 | mJ |

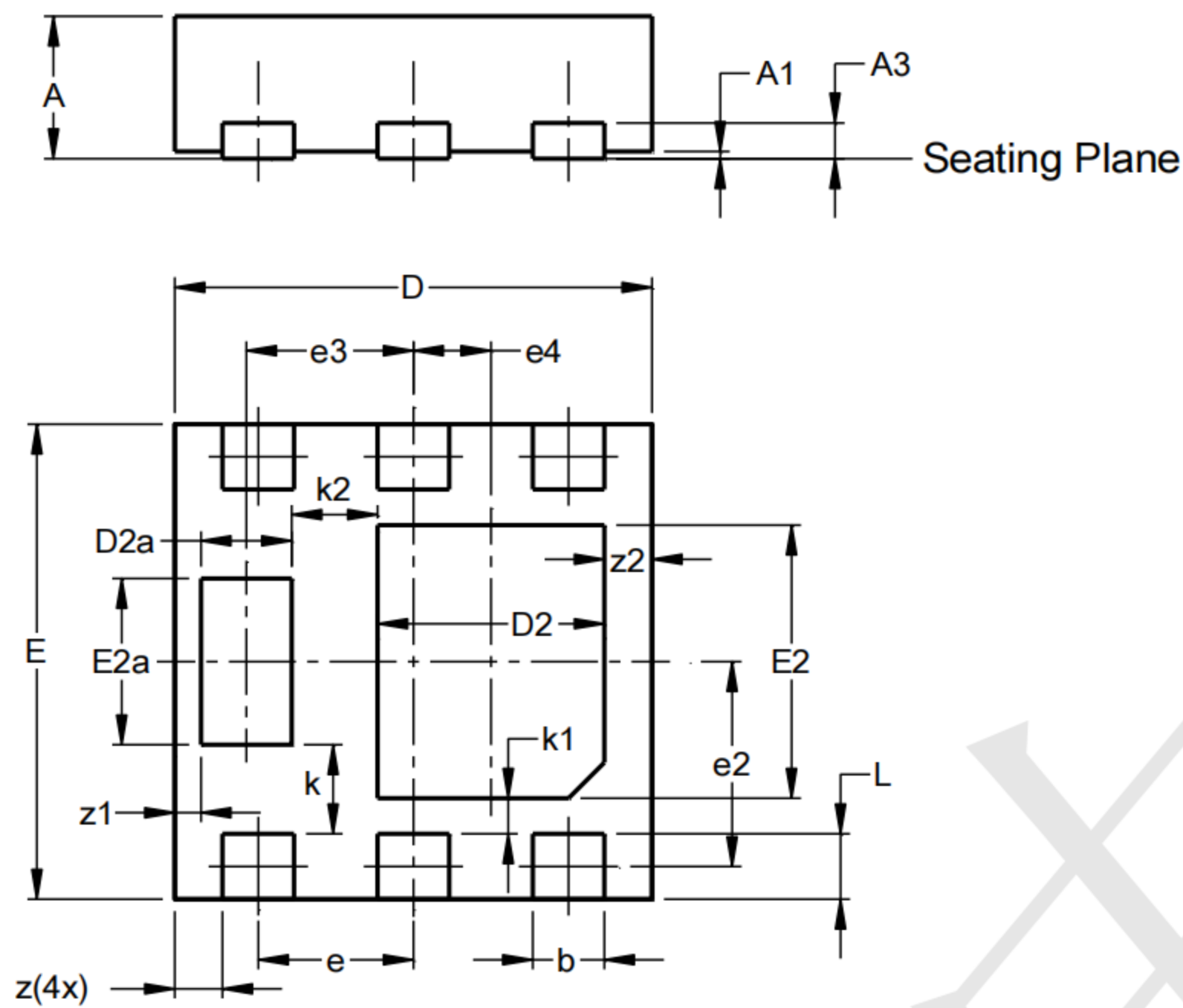
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|------------------------|------|
| Total Power Dissipation (Note 5) | P _D | T _A = +25°C | 0.8 |
| | | T _A = +70°C | 0.5 |
| Thermal Resistance, Junction to Ambient (Note 5) | R _{θJA} | Steady state | 159 |
| | | t < 10s | 110 |
| Total Power Dissipation (Note 6) | P _D | T _A = +25°C | 1.8 |
| | | T _A = +70°C | 1.2 |
| Thermal Resistance, Junction to Ambient (Note 6) | R _{θJA} | Steady state | 70 |
| | | t < 10s | 40 |
| Thermal Resistance, Junction to Case (Note 6) | R _{θJC} | 14 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (T_A=25°C unless otherwise noted)

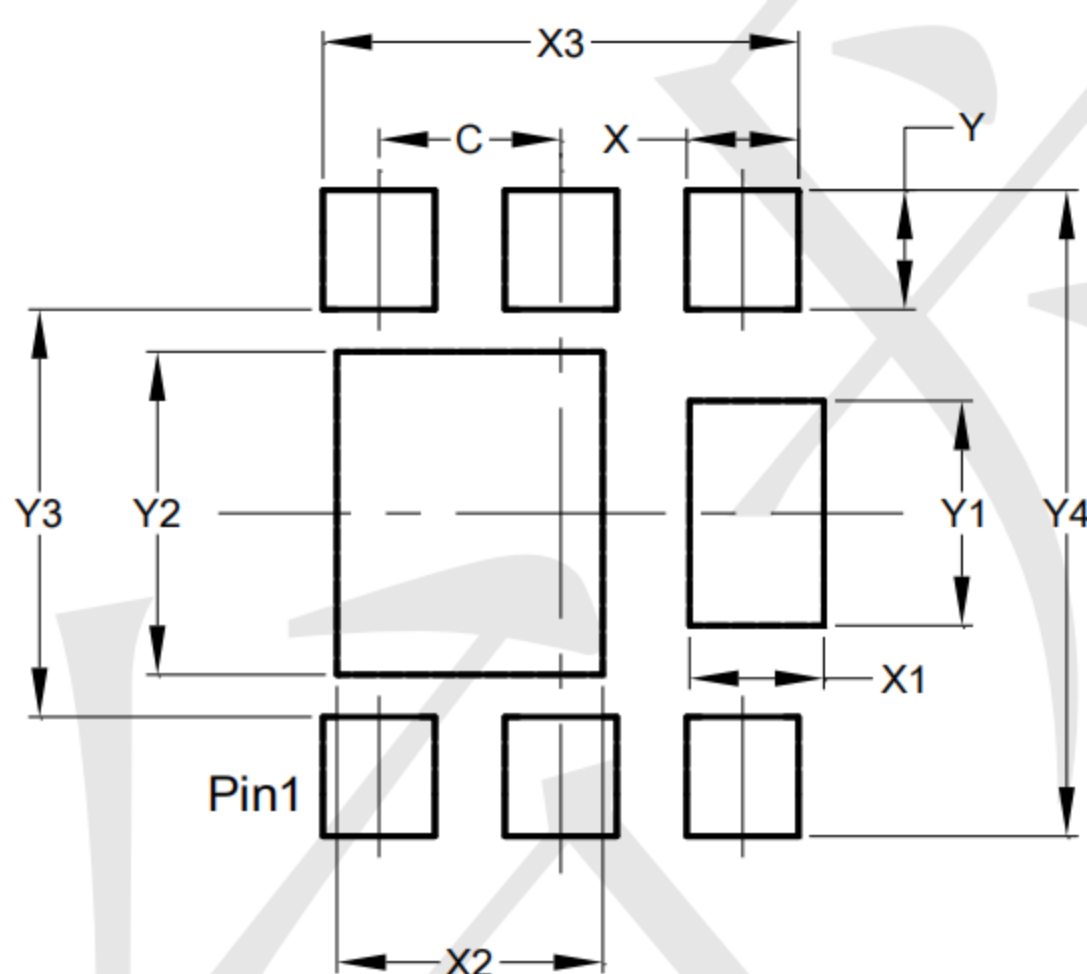
| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|---------------------|-----|------|------|------|---|
| OFF CHARACTERISTICS (Note 8) | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | 20 | — | — | V | V _{GS} = 0V, I _D = 250μA |
| Zero Gate Voltage Drain Current T _J = +25°C | I _{DSS} | — | — | 1 | μA | V _{DS} = 16V, V _{GS} = 0V |
| Gate-Source Leakage | I _{GSS} | — | — | ±100 | nA | V _{GS} = ±8 V, V _{DS} = 0V |
| ON CHARACTERISTICS (Note 8) | | | | | | |
| Gate Threshold Voltage | V _{GS(TH)} | 0.4 | — | 1.2 | V | V _{DS} = V _{GS} , I _D = 250μA |
| Static Drain-Source On-Resistance | R _{DS(ON)} | — | 6.8 | 9 | mΩ | V _{GS} = 4.5V, I _D = 8.5A |
| | | | 7.6 | 15 | | |
| | | | 11 | 30 | | |
| | | | 18 | 50 | | |
| Diode Forward Voltage | V _{SD} | — | 0.75 | 1.2 | V | V _{GS} = 0V, I _S = 8.5A |
| DYNAMIC CHARACTERISTICS (Note 9) | | | | | | |
| Input Capacitance | C _{iss} | — | 1439 | — | pF | V _{DS} = 10V, V _{GS} = 0V, f = 1.0MHz |
| Output Capacitance | C _{oss} | — | 224 | — | pF | |
| Reverse Transfer Capacitance | C _{rss} | — | 202 | — | pF | |
| Gate Resistance | R _g | — | 1.3 | — | Ω | V _{DS} = 0V, V _{GS} = 0V, f = 1MHz |
| Total Gate Charge (V _{GS} = 4.5V) | Q _g | — | 19.3 | — | nC | V _{DS} = 10V, I _D = 8.5A |
| Total Gate Charge (V _{GS} = 10V) | Q _g | — | 42.3 | — | nC | |
| Gate-Source Charge | Q _{gs} | — | 2.5 | — | nC | |
| Gate-Drain Charge | Q _{gd} | — | 4.5 | — | nC | |
| Turn-On Delay Time | t _{D(ON)} | — | 4.7 | — | ns | V _{DS} = 10V, I _D = 8.5A V _{GS} = 4.5V, R _G = 1.8Ω |
| Turn-On Rise Time | t _r | — | 6.9 | — | ns | |
| Turn-Off Delay Time | t _{D(OFF)} | — | 23 | — | ns | |
| Turn-Off Fall Time | t _f | — | 7.4 | — | ns | I _F = 8.5A, di/dt = 210A/μs |
| Reverse Recovery Time | t _{RR} | — | 11.6 | — | ns | |
| Reverse Recovery Charge | Q _{RR} | — | 4.6 | — | nC | |

DFN2X2 Package Outline Dimensions



| (Type F) | | | |
|----------------------|-----------|-------|-------|
| Dim | Min | Max | Typ |
| A | 0.57 | 0.63 | 0.60 |
| A1 | 0.00 | 0.05 | 0.03 |
| A3 | - | - | 0.15 |
| b | 0.25 | 0.35 | 0.30 |
| D | 1.95 | 2.05 | 2.00 |
| D2 | 0.85 | 1.05 | 0.95 |
| D2a | 0.33 | 0.43 | 0.38 |
| E | 1.95 | 2.05 | 2.00 |
| E2 | 1.05 | 1.25 | 1.15 |
| E2a | 0.65 | 0.75 | 0.70 |
| e | 0.65 BSC | | |
| e2 | 0.863 BSC | | |
| e3 | 0.70 BSC | | |
| e4 | 0.325 BSC | | |
| k | 0.37 BSC | | |
| k1 | 0.15 BSC | | |
| k2 | 0.36 BSC | | |
| L | 0.225 | 0.325 | 0.275 |
| z | 0.20 BSC | | |
| z1 | 0.110 BSC | | |
| z2 | 0.20 BSC | | |
| All Dimensions in mm | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 0.650 |
| X | 0.400 |
| X1 | 0.480 |
| X2 | 0.950 |
| X3 | 1.700 |
| Y | 0.425 |
| Y1 | 0.800 |
| Y2 | 1.150 |
| Y3 | 1.450 |
| Y4 | 2.300 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [TECH PUBLIC](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1_T0_00201](#) [PJMF380N65E1_T0_00201](#)
[PJMF280N60E1_T0_00201](#) [PJMF600N65E1_T0_00201](#) [PJMF900N65E1_T0_00201](#)