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# AON7410

## N-Channel Enhancement Mode Power MOSFET

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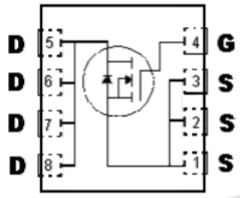
### Features

| | | |
|---|---|---|
| $BV_{DSS}$ | | 30V |
| $I_D$@$V_{GS}$=10V, $T_A$=25℃ | | 10A |
| $I_D$@$V_{GS}$=10V, $T_C$=25℃ | | 18A |
| $R_{DSON(TYP)}$ | $V_{GS}$=10V, $I_D$=10A | 14.0mΩ |
| | $V_{GS}$=4.5V, $I_D$=8A | 17.5mΩ |

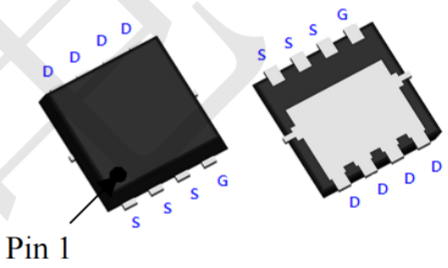
### Application

- Low Gate Charge
- Simple Drive Requirement
- Pb-free lead plating package

## Package and Pin Configuration




G：Gate D：Drain S：Source




PDFN3X3-8

### Absolute Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 30 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | |
| Continuous Drain Current @ $V_{GS}$=10V, $T_C$=25°C | $I_D$ | 18 | A |
| Continuous Drain Current @ $V_{GS}$=10V, $T_C$=100°C | | 11.4 | |
| Continuous Drain Current @ $V_{GS}$=10V, $T_A$=25°C | | 10 | |
| Continuous Drain Current @ $V_{GS}$=10V, $T_A$=70°C | | 8 | |
| Pulsed Drain Current *1 | $I_{DM}$ | 72 | |
| Single Pulse Avalanche Current | $I_{AS}$ | 18 | |
| Single Pulse Avalanche Current @ L=0.1mH, $V_{GS}$=10V, $V_{DD}$=15V *2 | $E_{AS}$ | 16.2 | mJ |
| Total Power Dissipation @$T_C$=25℃ | $P_D$ | 8 | W |
| Total Power Dissipation @$T_A$=25℃ | | 2.5 | |
| Operating Junction and Storage Temperature Range | Tj, Tstg | -55~+150 | °C |

Note : *1. Pulse width limited by maximum junction temperature
*2. 100% tested by conditions of L=0.1mH, $I_{AS}$=6A, $V_{GS}$=10V, $V_{DD}$=15V

## Thermal Resistance

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Thermal Resistance, Junction-to-case, max | $R_{\theta JC}$ | 16 | °C/W |
| Thermal Resistance, Junction-to-ambient, max | $R_{\theta JA}$ | 50 * | |

* Surface mounted on a 1 in² pad of 2oz copper.

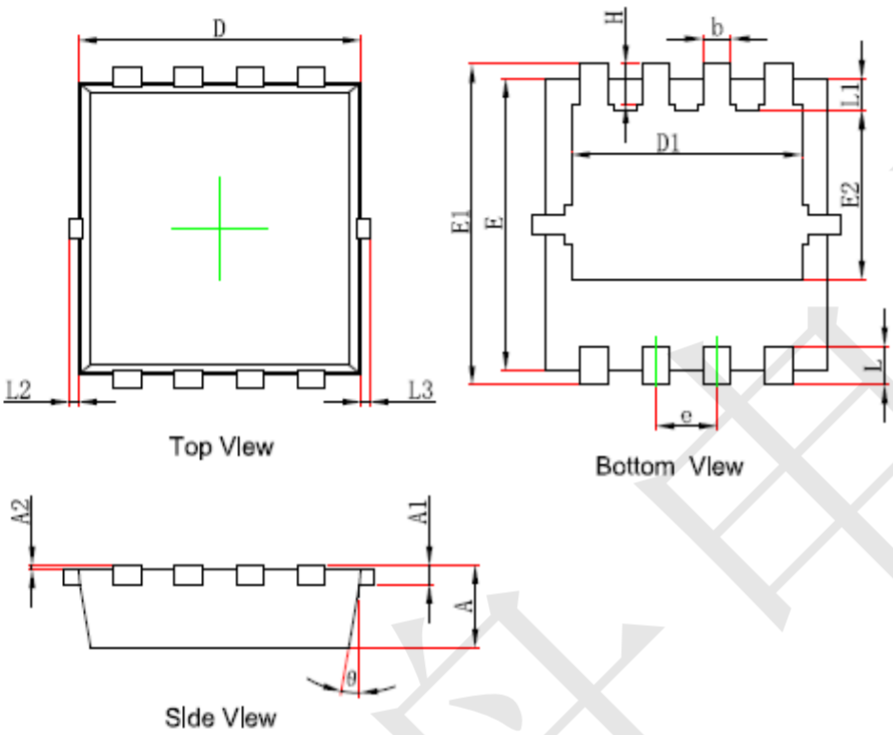
## Electrical Characteristics (Tj=25°C, unless otherwise noted)

| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|
| **Static** | | | | | |
| $BV_{DSS}$ | 30 | - | - | V | $V_{GS}$=0V, $I_D$=250μA |
| $\Delta BV_{DSS}/\Delta Tj$ | - | 0.02 | - | V/℃ | Reference to 25℃, $I_D$=1mA |
| $V_{GS(th)}$ | 1 | - | 2.5 | V | $V_{DS}$=$V_{GS}$, $I_D$=250μA |
| $I_{GSS}$ | - | - | ±100 | nA | $V_{GS}$=±20V, $V_{DS}$=0V |
| $I_{DSS}$ | - | - | 1 | μA | $V_{DS}$=24V, $V_{GS}$=0V |
| | - | - | 25 | | $V_{DS}$=24V, $V_{GS}$=0V, Tj=125℃ |
| *$R_{DS(ON)}$ | - | 14 | 20 | mΩ | $I_D$=10A, $V_{GS}$=10V |
| | - | 17.5 | 28 | | $I_D$=8A, $V_{GS}$=4.5V |
| *$G_{FS}$ | - | 3.8 | - | S | $V_{DS}$=10V, $I_D$=1A |
| **Dynamic** | | | | | |
| Ciss | - | 492 | - | pF | $V_{DS}$=25V, $V_{GS}$=0V, f=1MHz |
| Coss | - | 67 | - | | |
| Crss | - | 49 | - | | |
| $t_{d(ON)}$ | - | 5.8 | - | ns | $V_{DS}$=15V, $I_D$=1A, $V_{GS}$=10V, $R_G$=6Ω |
| $t_r$ | - | 16.6 | - | | |
| $t_{d(OFF)}$ | - | 31.2 | - | | |
| $t_f$ | - | 7.6 | - | | |

| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|
| Qg | - | 12.6 | - | nC | $V_{DS}$=15V, $I_D$=10A, $V_{GS}$=10V |
| Qgs | - | 1.8 | - | | |
| Qgd | - | 2.7 | - | | |
| **Source Drain Diode** | | | | | |
| *$I_S$ | - | - | 4 | A | |
| *$I_{SM}$ | - | - | 16 | | |
| *$V_{SD}$ | - | 0.79 | 1.2 | V | $I_S$=2.3A,$V_{GS}$=0V |
| *$T_{rr}$ | - | 7.4 | - | ns | $I_F$=4A,$V_{GS}$=0V, $dI_F/dt$=100A/μs |
| $Q_{rr}$ | - | 3 | - | nC | |

*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

**Package Information (PDFN3X3-8)**




8-Lead DFN3x3 Plastic Package
CYStek Package Code: V8

*: Typical

| DIM | Millimeters | | Inches | | DIM | Millimeters | | Inches | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.605 | 0.850 | 0.026 | 0.033 | b | 0.200 | 0.400 | 0.008 | 0.016 |
| A1 | 0.152 REF | | 0.006 REF | | e | 0.550 | 0.750 | 0.022 | 0.030 |
| A2 | 0.000 | 0.050 | 0.000 | 0.002 | L | 0.300 | 0.500 | 0.012 | 0.020 |
| D | 2.900 | 3.100 | 0.114 | 0.122 | L1 | 0.180 | 0.480 | 0.007 | 0.019 |
| D1 | 2.300 | 2.600 | 0.091 | 0.102 | L2 | 0.000 | 0.100 | 0.000 | 0.004 |
| E | 2.900 | 3.100 | 0.114 | 0.122 | L3 | 0.000 | 0.100 | 0.000 | 0.004 |
| E1 | 3.150 | 3.450 | 0.124 | 0.136 | H | 0.315 | 0.515 | 0.012 | 0.020 |
| E2 | 1.535 | 1.935 | 0.060 | 0.076 | θ | 9° | 13° | 9° | 13° |