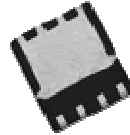


N-Channel 100-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

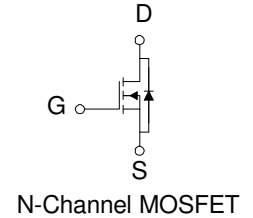
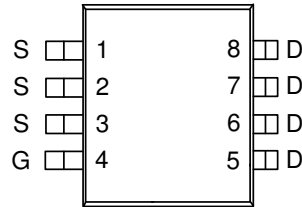
- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe DFN3x3-8PP saves board space
- Fast switching speed
- High performance trench technology

| PRODUCT SUMMARY | | |
|-----------------|----------------------------|-----------|
| V_{DS} (V) | $r_{DS(on)}$ m(Ω) | I_D (A) |
| 100 | 62 @ $V_{GS} = 10V$ | 6.2 |
| | 72 @ $V_{GS} = 4.5V$ | 5.7 |



RoHS
COMPLIANT
HALOGEN
FREE

DFN3x3-8PP
Top View



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED) | | | |
|---|--------------------|------------|------------|
| Parameter | Symbol | Limit | Units |
| Drain-Source Voltage | V_{DS} | 100 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | |
| Continuous Drain Current ^a | $T_A = 25^\circ C$ | ± 6.2 | A |
| | $T_A = 70^\circ C$ | ± 5.1 | |
| Pulsed Drain Current ^b | I_{DM} | ± 75 | |
| Continuous Source Current (Diode Conduction) ^a | I_S | 16 | A |
| Power Dissipation ^a | $T_A = 25^\circ C$ | 3.5 | W |
| | $T_A = 70^\circ C$ | 2 | |
| Operating Junction and Storage Temperature Range | T_J, T_{stg} | -55 to 150 | $^\circ C$ |

| THERMAL RESISTANCE RATINGS | | | |
|--|-----------------|---------|--------------|
| Parameter | Symbol | Maximum | Units |
| Maximum Junction-to-Case ^a | $R_{\theta JC}$ | 25 | $^\circ C/W$ |
| Maximum Junction-to-Ambient ^a | $R_{\theta JA}$ | 50 | $^\circ C/W$ |

Notes

- Surface Mounted on 1" x 1" FR4 Board.
- Pulse width limited by maximum junction temperature

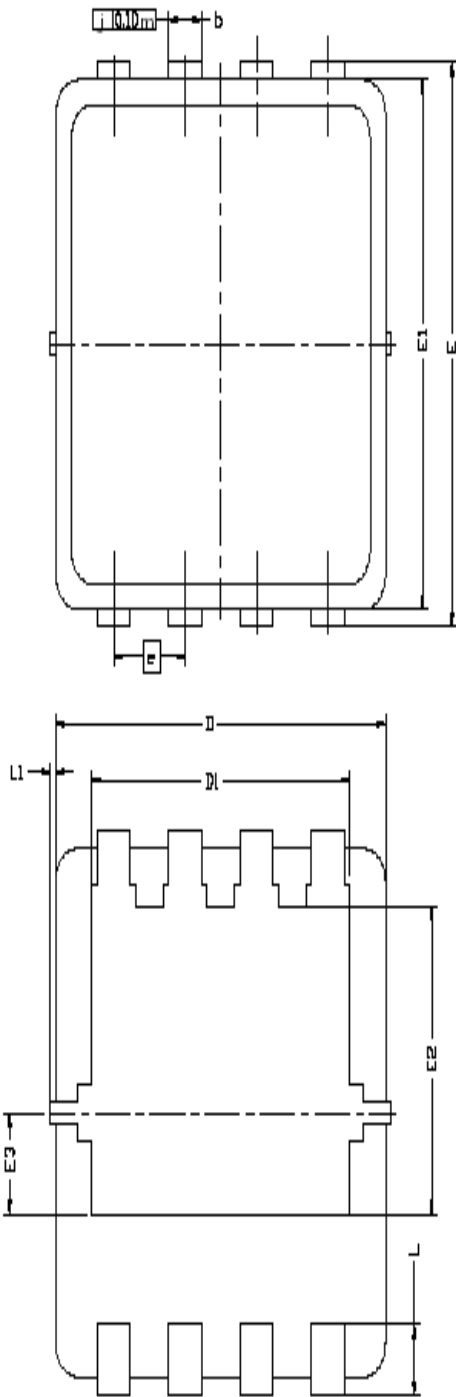
| SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED) | | | | | | |
|---|---------------------|---|--------|------|------|------|
| Parameter | Symbol | Test Conditions | Limits | | | Unit |
| | | | Min | Typ | Max | |
| Static | | | | | | |
| Gate-Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250 μA | 1 | | | V |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = 20 V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 80 V, V _{GS} = 0 V | | | 1 | μA |
| | | V _{DS} = 80 V, V _{GS} = 0 V, T _J = 55°C | | | 25 | |
| On-State Drain Current ^A | I _{D(on)} | V _{DS} = 5 V, V _{GS} = 10 V | 20 | | | A |
| Drain-Source On-Resistance ^A | r _{DS(on)} | V _{GS} = 10 V, I _D = 1 A | | | 62 | mΩ |
| | | V _{GS} = 4.5 V, I _D = 1 A | | | 72 | |
| Forward Transconductance ^A | g _f | V _{DS} = 15 V, I _D = 1 A | | 40 | | S |
| Diode Forward Voltage | V _{SD} | I _S = 1 A, V _{GS} = 0 V | | 0.7 | | V |
| Dynamic^b | | | | | | |
| Total Gate Charge | Q _g | V _{DS} = 15 V, V _{GS} = 4.5 V, I _D = 9 A | | 13 | | nC |
| Gate-Source Charge | Q _{gs} | | | 3 | | |
| Gate-Drain Charge | Q _{gd} | | | 6 | | |
| Input Capacitance | C _{iss} | V _{DS} = 15 V, V _{GS} = 0 V, f = 1MHz | | 1100 | | pF |
| Output Capacitance | C _{oss} | | | 120 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 70 | | |
| Turn-On Delay Time | t _{d(on)} | | | 11 | | |
| Rise Time | t _r | V _{DD} = 25 V, R _L = 25 Ω, I _D = 1 A, V _{GEN} = 10 V | | 12 | | nS |
| Turn-Off Delay Time | t _{d(off)} | | | 50 | | |
| Fall-Time | t _f | | | 30 | | |

Notes

- Pulse test: PW ≤ 300μs duty cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

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Package Information



| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|-------|-------|-----------|--------|--------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.700 | 0.80 | 0.900 | 0.0276 | 0.0315 | 0.0354 |
| AL | 0.00 | --- | 0.05 | 0.000 | --- | 0.002 |
| b | 0.24 | 0.30 | 0.35 | 0.009 | 0.012 | 0.014 |
| c | 0.10 | 0.152 | 0.25 | 0.004 | 0.006 | 0.010 |
| D | 3.00 BSC | | | 0.118 BSC | | |
| D1 | 2.35 BSC | | | 0.093 BSC | | |
| E | 3.20 BSC | | | 0.126 BSC | | |
| E1 | 3.00 BSC | | | 0.118 BSC | | |
| E2 | 1.75 BSC | | | 0.069 BSC | | |
| E3 | 0.575 BSC | | | 0.023 BSC | | |
| e | 0.65 BSC | | | 0.026 BSC | | |
| L | 0.30 | 0.40 | 0.50 | 0.0118 | 0.0157 | 0.0197 |
| LL | D | --- | 0.100 | D | --- | 0.004 |
| BI | 0° | 10° | 12° | 0° | 10° | 12° |