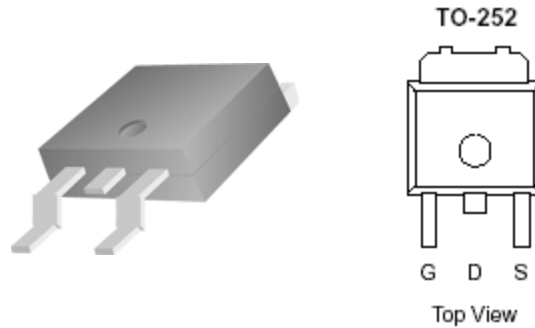


P-Channel 32-V (D-S) MOSFET

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 DPAK saves board space
- Fast switching speed
- High performance trench technology



| PRODUCT SUMMARY | | |
|-----------------|----------------------------|-----------|
| V_{DS} (V) | $r_{DS(on)}$ m(Ω) | I_D (A) |
| -32 | 59 @ $V_{GS} = -10V$ | 24 |
| | 95 @ $V_{GS} = -4.5V$ | 19 |

| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED) | | | |
|---|------------------------|------------|------------|
| Parameter | Symbol | Maximum | Units |
| Drain-Source Voltage | V_{DS} | -32 | V |
| Gate-Source Voltage | V_{GS} | ± 25 | |
| Continuous Drain Current ^a | $T_A=25^\circ C$ I_D | 24 | A |
| Pulsed Drain Current ^b | I_{DM} | ± 40 | |
| Continuous Source Current (Diode Conduction) ^a | I_S | -30 | A |
| Power Dissipation ^a | $T_A=25^\circ C$ P_D | 50 | W |
| Operating Junction and Storage Temperature Range | T_J, T_{stg} | -55 to 175 | $^\circ C$ |

| THERMAL RESISTANCE RATINGS | | | |
|--|-----------------|---------|--------------|
| Parameter | Symbol | Maximum | Units |
| Maximum Junction-to-Ambient ^a | $R_{\theta JA}$ | 50 | $^\circ C/W$ |
| Maximum Junction-to-Case | $R_{\theta JC}$ | 3.0 | $^\circ C/W$ |

Notes

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

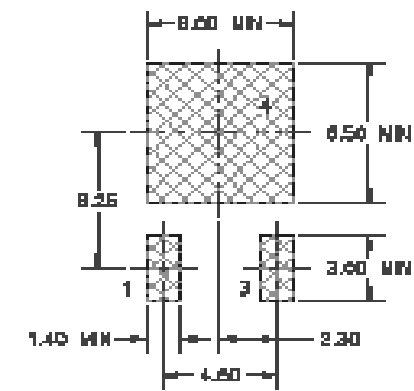
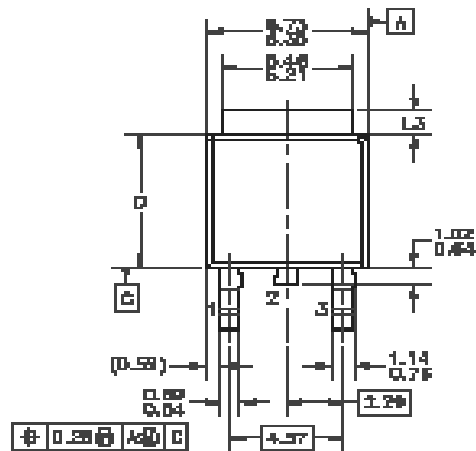
| SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED) | | | | | | |
|---|---------------------|---|--------|------|------|------|
| Parameter | Symbol | Test Conditions | Limits | | | Unit |
| | | | Min | Typ | Max | |
| Static | | | | | | |
| Gate-Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250 uA | -1 | | | |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = ±25 V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = -24 V, V _{GS} = 0 V | | | -1 | uA |
| | | V _{DS} = -24 V, V _{GS} = 0 V, T _J = 55°C | | | -5 | |
| On-State Drain Current ^A | I _{D(on)} | V _{DS} = -5 V, V _{GS} = -10 V | -41 | | | A |
| Drain-Source On-Resistance ^A | r _{DS(on)} | V _{GS} = -10 V, I _D = -24 A | | | 59 | mΩ |
| | | V _{GS} = -4.5 V, I _D = -19 A | | | 95 | |
| Forward Transconductance ^A | g _{fs} | V _{DS} = -15 V, I _D = -24 A | | 31 | | S |
| Diode Forward Voltage | V _{SD} | I _S = -41 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 = -24 A | | 6.4 | | nC |
| Gate-Source Charge | Q _{gs} | | | 1.9 | | |
| Gate-Drain Charge | Q _{gd} | | | 2.5 | | |
| Input Capacitance | C _{iss} | V _{DS} =-15V, V _{GS} =0V, f=1MHz | | 520 | | pF |
| Output Capacitance | C _{oss} | | | 130 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 70 | | |
| Switching | | | | | | |
| Turn-On Delay Time | t _{d(on)} | V _{DD} = -15 V, R _L = 15 Ω , I _D = -24 A, V _{GEN} = -10 V, R _G = 6Ω | | 10 | | nS |
| Rise Time | t _r | | | 2.8 | | |
| Turn-Off Delay Time | t _{d(off)} | | | 53.6 | | |
| Fall-Time | t _f | | | 46 | | |

Notes

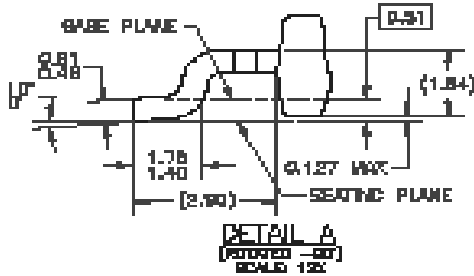
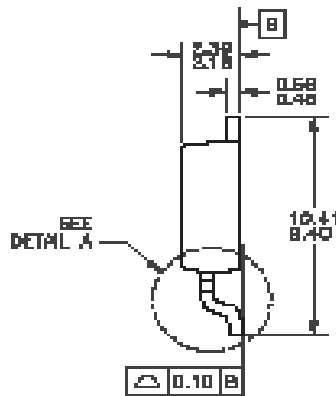
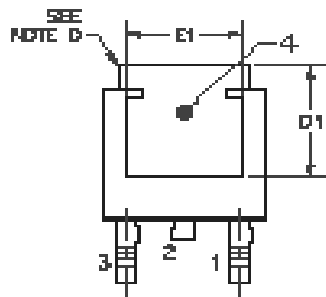
- a. Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

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Package Information



LAND PATTERN RECOMMENDATION



DETAIL A
(PREFERRED - 90°)
SCALE 12X

- NOTES: UNLESS OTHERWISE SPECIFIED
- A) ALL DIMENSIONS ARE IN MILLIMETERS.
 - B) THIS PACKAGE CONFORMS TO JEDEC, TO-262, ISSUE C, VARIATION AA, 30 DE, DATED NOV. 1999.
 - C) DIMENSIONING AND TOLERANCING PER ASME Y14.00M-1994.
 - D) HEAT SINK TOP EDGE COULD BE IN CHAMFERED CORNERS OR EDGE PROTRUSION.
 - E) DIMENSIONS L3,D,E1&D1 TABLE:

| | OPTIONAL A0 | OPTIONAL A1 |
|----|-------------|-------------|
| L3 | 0.68-1.27 | 1.02-2.54 |
| D | 0.97-0.99 | 0.93-0.99 |
| E1 | 4.32 MIN | 3.81 MIN |
| D1 | 3.81 MIN | 4.37 MIN |