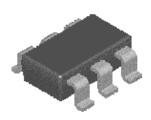
P-Channel 40-V (D-S) MOSFET

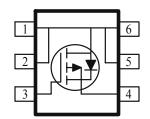
These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA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

| • | Low $r_{DS(on)}$ provides higher efficiency and |
|---|---|
| | extends battery life |

- Low thermal impedance copper leadframe TSOP-6 saves board space
- Fast switching speed
- High performance trench technology

| PRODUCT SUMMARY | | | | |
|---|--------------------------|------|--|--|
| $V_{DS}(V)$ $r_{DS(on)}(\Omega)$ $I_{D}(A)$ | | | | |
| -40 | $0.070 @ V_{GS} = -10V$ | -4.4 | | |
| -40 | $0.090 @ V_{GS} = -4.5V$ | -3.9 | | |





| ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED) | | | | | |
|--|---|---------------------------|------------|-------|--|
| Parameter | | | Maximum | Units | |
| Drain-Source Voltage | | | -40 | V | |
| Gate-Source Voltage | | | ±20 | V | |
| | $T_A=25^{\circ}C$ | ī | -4.0 | A | |
| Continuous Drain Current ^a | $T_A = 25^{\circ} \text{C}$ $T_A = 70^{\circ} \text{C}$ | \mathbf{I}_{D} | -3.2 | | |
| Pulsed Drain Current ^b | | | ±20 | | |
| Continuous Source Current (Diode Conduction) ^a | | | -1.7 | A | |
| D D: : a | $T_A=25^{\circ}C$ | D | 2.0 | W | |
| Power Dissipation ^a | $T_A = 25^{\circ} \text{C}$ $T_A = 70^{\circ} \text{C}$ | T D | 1.3 | vv | |
| Operating Junction and Storage Temperature Range | | T_{J}, T_{stg} | -55 to 150 | °C | |

| THERMAL RESISTANCE RATINGS | | | | | |
|--|----------------|------------|-------|------|--|
| Parameter | Symbol | Maximum | Units | | |
| M · I · · · a | $t \le 5 \sec$ | D | 62.5 | °C/W | |
| Maximum Junction-to-Ambient ^a | Steady state | R_{THJA} | 110 | °C/W | |

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Notes

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

Analog Power AM3447P

| Donomoton | G1-1 | T | Limits | | | TT*4 | |
|---|---------------------|--|--------|------|------|------|--|
| Parameter | Symbol | Test Conditions | Min | Тур | Max | Unit | |
| Static | | | | | | | |
| Gate-Threshold Voltage | V _{GS(th)} | $V_{DS} = V_{GS}, I_D = 250 \text{ uA}$ | -1 | | | | |
| Gate-Body Leakage | I _{GSS} | $V_{DS} = 0 V, V_{GS} = \pm 8 V$ | | | ±100 | nA | |
| Zero Gate Voltage Drain Current | IDSS | $V_{DS} = -32 \text{ V}, V_{GS} = 0 \text{ V}$ | | | -1 | uA | |
| Zelo Cate Voltage Diam Current | 1088 | $V_{DS} = -32 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^{\circ}\text{C}$ | | | -5 | uA | |
| On-State Drain Current ^A | I _{D(on)} | $V_{DS} = -5 \text{ V}, V_{GS} = -4.5 \text{ V}$ | -20 | | | A | |
| D : C O D : A | | $V_{GS} = -10 \text{ V}, I_D = -4.4 \text{ A}$ | | | 70 | | |
| Drain-Source On-Resistance ^A | fDS(on) | $V_{GS} = -4.5 \text{ V}, I_D = -3.9 \text{ A}$ | | | 90 | mΩ | |
| Forward Tranconductance ^A | gs | $V_{DS} = -5 \text{ V}, I_D = -4.4 \text{ A}$ | | 10 | | S | |
| Diode Forward Voltage | V_{SD} | $I_S = 1.3 \text{ A}, V_{GS} = 0 \text{ V}$ | | -0.8 | | V | |
| Dynamic ^b | | | | | | | |
| Total Gate Charge | Q_{g} | $V_{DS} = -20 \text{ V}, V_{GS} = -10 \text{ V},$ | | 6.4 | | nC | |
| Gate-Source Charge | Q_{gs} | $I_D = -44 \text{ A}$ | | 1.9 | | | |
| Gate-Drain Charge | Qgd | ID4.4 A | | 2.5 | | | |
| Switching | | | | | • | | |
| Turn-On Delay Time | t _{d(on)} | | | 7 | | | |
| Rise Time | $t_{\rm r}$ | $V_{DD}^{}=-20$ V, $R_L^{}=6~\Omega$, $I_D=-1~A,$ | | 10 | | ns | |
| Turn-Off Delay Time | td(off) | $V_{GEN} = -10 \text{ V}$ | | 30 | | 115 | |
| Fall-Time | t_{f} | | | 22 | | | |

Notes

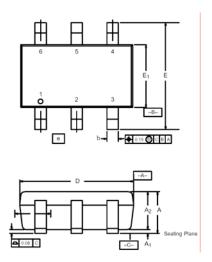
- a. Pulse test: $PW \le 300us duty cycle \le 2\%$.
- b. Guaranteed by design, not subject to production testing.

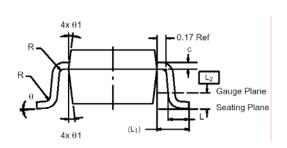
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Package Information

TSOP-6: 6LEAD





| | MILLIMETERS INCHES | | | | ; | |
|----------------|--------------------|------|------|--------|------------|-------|
| Dim | Min | Nom | Max | Min | Nom | Max |
| Α | 0.91 | - | 1.10 | 0.036 | _ | 0.043 |
| A ₁ | 0.01 | _ | 0.10 | 0.0004 | _ | 0.004 |
| A ₂ | 0.84 | _ | 1.00 | 0.033 | 0.038 | 0.039 |
| b | 0.30 | 0.32 | 0.45 | 0.012 | 0.013 | 0.018 |
| С | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| D | 2.95 | 3.05 | 3.10 | 0.116 | 0.120 | 0.122 |
| E | 2.70 | 2.85 | 2.98 | 0.106 | 0.112 | 0.117 |
| E ₁ | 1.55 | 1.65 | 1.70 | 0.061 | 0.065 | 0.067 |
| е | 1.00 BSC | | | (| 0.0394 BSC | ; |
| L | 0.35 | - | 0.50 | 0.014 | - | 0.020 |
| L ₁ | 0.60 Ref | | | | 0.024 Ref | |
| L ₂ | 0.25 BSC | | | | 0.010 BSC | |
| R | 0.10 | - | _ | 0.004 | - | _ |
| θ | 0° | 4° | 8° | 0° | 4° | 8° |
| θ_1 | 7° Nom | | | 7° Nom | | |