

N Channel 30V (DS) MOSFET
FEATURES

- Advance Trench Process Technology
- High Density Cell Design for Ultra Low Onresistance

Application

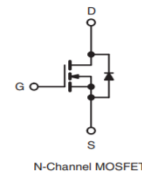
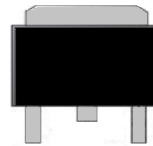
- Portable Devices
- Consumer Electronics

Mechanical

- Case: TO-252 Package

PRODUCTY SUMMARY

| V_{DS} | $R_{DS(on)}$ m(Ω) | | I_D (A) |
|----------|----------------------------|-----------------|-----------|
| 30 | 7.8 | @ $V_{GS}=10V$ | 19 |
| | 12 | @ $V_{GS}=4.5V$ | 15 |

TO-252

Packing Information

| Package | Packing |
|---------|---------------|
| TO-252 | 2.5K/13" Reel |

Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Limit | Unit |
|--|----------------|----------|------------------|
| DrainSource Voltage | V_{DS} | 30 | V |
| GateSource Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current ¹⁾ | I_D | 20 | A |
| Maximum Power Dissipation | P_D | 3.2 | W |
| Pulsed Drain Current ²⁾ | I_{DM} | 80 | A |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | 55~150 | $^\circ\text{C}$ |

Typical Thermal Resistance

| Parameter | Symbol | Limit | Unit |
|--|-----------------|-------|--------------------|
| JunctiontoAmbient Thermal Resistance ³⁾ | $R_{\theta JA}$ | 65 | $^\circ\text{C/W}$ |

Note:

1. Fused current that based on wire numbers and diameter
2. Repetitive Rating: Pulse width limited by the maximum junction temperature
3. 1in2 2oz Cu PCB board

| Electrical Characteristics (T _A = 25°C UNLESS OTHERWISE NOTED) | | | | | | |
|---|---------------------|--|--------|------|------|------|
| Characteristics | Symbol | Test Condition | Limits | | | Unit |
| | | | Min | Typ | Max | |
| Static | | | | | | |
| DrainSource Breakdown Voltage | B _{VDSS} | V _{GS} = 0V, I _D =250uA | 30 | - | - | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250uA | 1.00 | 1.38 | 3.00 | V |
| DrainSource OnState Resistance | R _{DS(on)} | V _{GS} =10V, I _D =19A | - | 6.7 | 7.8 | mΩ |
| | | V _{GS} =4.5V, I _D =15A | - | 10 | 12 | mΩ |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =30V, V _{GS} =0V | - | - | 1 | uA |
| GateSource Leakage Current | I _{GSS} | V _{GS} =±20V, V _{DS} =0V | - | - | ±100 | nA |

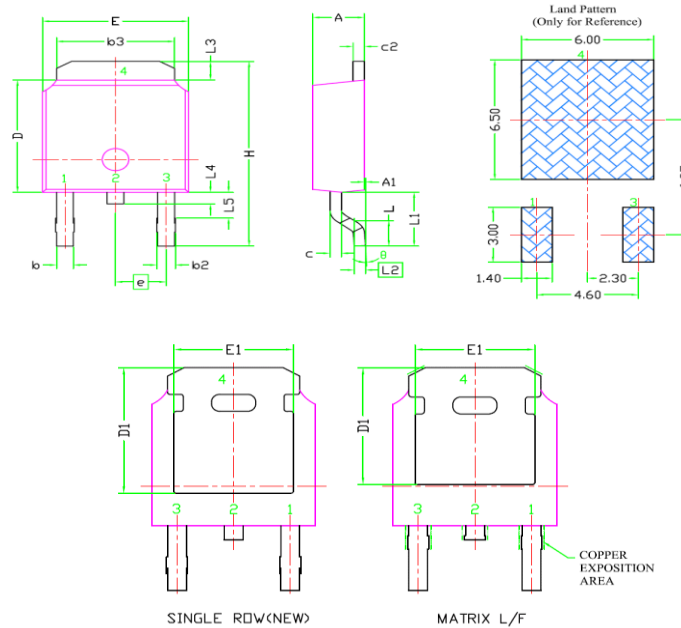
| DrainSource Diode | | | | | | |
|---|-----------------|--|---|---|-----|---|
| Maximum Continuous Body Diode Forward Current | I _S | V _G =V _D =0V , Force Current | - | - | 1.2 | A |
| Diode Forward Voltage | V _{SD} | I _S =1.0A, V _{GS} =0V | - | - | 1.5 | V |

NOTES :

1. Pulse width<300us, Duty cycle<2%.
2. Essentially independent of operating temperature typical characteristics.
3. Repetitive rating, pulse width limited by junction temperature T_J(MAX)=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.
4. The maximum current rating is package limited.
5. RQJA is the sum of the junction to case and case to ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch² with 2oz. square pad of copper.
6. Guaranteed by design, not subject to production testing.

Package Outline Dimensions (inches and millimeters)

| TO-252 | | | | |
|--------|-------------|-------|--------|-------|
| SYMBOL | Dimensions | | | |
| | Millimeters | | Inches | |
| | Min | Max | Min | Max |
| E | 6.40 | 6.73 | 0.252 | 0.265 |
| L | 1.40 | 1.77 | 0.055 | 0.070 |
| L1 | 2.743 REF | | | |
| L2 | 0.508BSC | | | |
| L3 | 0.89 | 1.27 | 0.035 | 0.050 |
| L4 | 0.64 | 1.01 | 0.025 | 0.040 |
| L5 | - | - | - | - |
| D | 6.00 | 6.22 | 0.236 | 0.245 |
| H | 9.40 | 10.40 | 0.370 | 0.409 |
| b | 0.64 | 0.88 | 0.025 | 0.035 |
| b2 | 0.77 | 1.14 | 0.030 | 0.045 |
| b3 | 5.21 | 5.46 | 0.205 | 0.215 |
| e | 2.286BSC | | | |
| A | 2.20 | 2.38 | 0.087 | 0.094 |
| A1 | 0.00 | 0.13 | 0.000 | 0.005 |
| c | 0.46 | 0.60 | 0.018 | 0.024 |
| c2 | 0.46 | 0.58 | 0.018 | 0.023 |
| D1 | 5.21 | - | 0.205 | - |
| E1 | 4.40 | - | 0.173 | - |
| Θ | 0° | 10° | 0° | 10° |



Marking Information



First line:

AAAAAAA = Product number

XXXXXXX = Tracking number

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