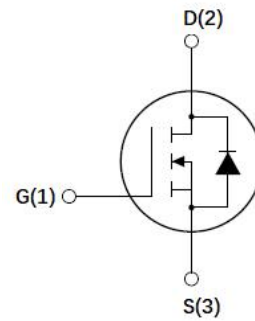
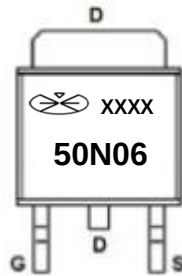
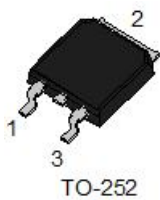


**50N06****N-Channel Mode Power MOSFET****Features**

- $R_{DS(ON)} < 16m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} < 19m\Omega @ V_{GS}=4.5V$
- $V_{DS}=60V, I_D=50A$

**Application**

- Power switching application

**Package****Package Marking and Ordering Information**

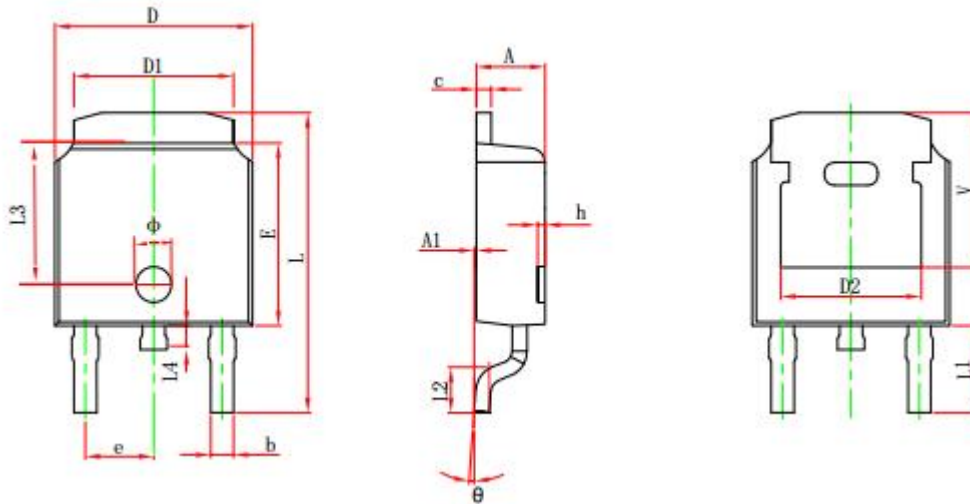
| Product ID | PACK   | Qty (pcs) |
|------------|--------|-----------|
| 50N06      | TO-252 | 2500      |

**MAXIMUM RATINGS**( $T_a=25^{\circ}C$  unless otherwise noted)

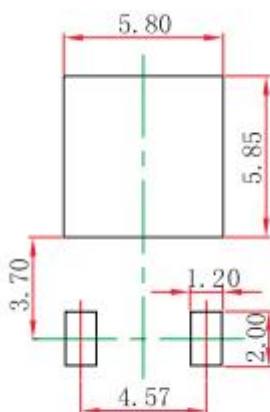
| Symbol          | Parameter                                   | Value      | Unit          |
|-----------------|---------------------------------------------|------------|---------------|
| $V_{DS}$        | Drain-Source Voltage                        | 60         | V             |
| $V_{GS}$        | Gate-Source Voltage                         | $\pm 20$   | V             |
| $I_D$           | Continuous Drain Current                    | 50         | A             |
| $I_{DM}$        | Pulsed Drain Current                        | 200        | A             |
| $P_D$           | Power Dissipation                           | 75         | W             |
| $T_j$           | Junction Temperature                        | -30 to 150 | $^{\circ}C$   |
| $T_{stg}$       | Storage Temperature                         | -30 to 150 |               |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 100        | $^{\circ}C/W$ |
| $R_{\theta JC}$ | Thermal Resistance From Junction To Case    | 1.67       | $^{\circ}C/W$ |

**50N06*****N-Channel Mode Power MOSFET*****MOSFET ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

| Parameter                                     | Symbol        | Test conditions               |                    | Min | Typ | Max       | Unit       |
|-----------------------------------------------|---------------|-------------------------------|--------------------|-----|-----|-----------|------------|
| Off characteristics                           |               |                               |                    |     |     |           |            |
| Drain-Source breakdown Voltage                | $V_{(BR)DSS}$ | $V_{GS}=0V, I_D=250\mu A$     |                    | 60  |     |           | V          |
| Zero gate voltage drain current               | $I_{DSS}$     | $V_{DS}=48V, V_{GS}=0V$       | $T_J=25^{\circ}C$  |     |     | 1         | $\mu A$    |
|                                               |               |                               | $T_J=125^{\circ}C$ |     |     | 100       |            |
| Gate-body leakage current                     | $I_{GSS}$     | $V_{DS}=0V, V_{GS}=\pm 20V$   |                    |     |     | $\pm 100$ | nA         |
| On characteristics                            |               |                               |                    |     |     |           |            |
| Gate-threshold voltage                        | $V_{GS(th)}$  | $V_{DS}=V_{GS}, I_D=250\mu A$ |                    | 1.0 | 1.6 | 2.5       | V          |
| Non-triggering gate voltage                   | $R_{DS(on)}$  | $V_{GS}=4.5V, I_D=10A$        |                    |     | 17  | 19        | m $\Omega$ |
|                                               |               | $V_{GS}=10V, I_D=20A$         |                    |     | 13  | 16        | m $\Omega$ |
| Drain-Source Diode Characteristics            |               |                               |                    |     |     |           |            |
| Drain-Source diode forward Voltage            | $V_{SD}$      | $V_{GS}=0V, I_S=1.0A$         |                    |     |     | 1.2       | V          |
| Continuous drain-source diode forward current | $I_S$         |                               |                    |     |     | 50        | A          |

**50N06*****N-Channel Mode Power MOSFET*****TO-252-2L Package Outline Dimensions**

| Symbol | Dimensions in Millimeters |        | Dimensions in Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 2.200                     | 2.400  | 0.087                | 0.094 |
| A1     | 0.000                     | 0.127  | 0.000                | 0.005 |
| b      | 0.635                     | 0.770  | 0.025                | 0.030 |
| c      | 0.460                     | 0.580  | 0.018                | 0.023 |
| D      | 6.500                     | 6.700  | 0.256                | 0.264 |
| D1     | 5.100                     | 5.460  | 0.201                | 0.215 |
| D2     | 4.830 REF.                |        | 0.190 REF.           |       |
| E      | 6.000                     | 6.200  | 0.236                | 0.244 |
| e      | 2.186                     | 2.386  | 0.086                | 0.094 |
| L      | 9.712                     | 10.312 | 0.382                | 0.406 |
| L1     | 2.900 REF.                |        | 0.114 REF.           |       |
| L2     | 1.400                     | 1.700  | 0.055                | 0.067 |
| L3     | 4.460 REF.                |        | 0.1756 REF.          |       |
| L4     | 0.600                     | 1.000  | 0.024                | 0.039 |
| Φ      | 1.100                     | 1.300  | 0.043                | 0.051 |
| θ      | 0°                        | 8°     | 0°                   | 8°    |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| V      | 5.250 REF.                |        | 0.207 REF.           |       |

**TO-252-2L Suggested Pad Layout****Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.