



## MOS Controlled Diode

### PRODUCT SUMMARY

| V <sub>RRM</sub> | I <sub>O</sub> | V <sub>F</sub> (MAX) @ 25°C | I <sub>R</sub> (MAX) @ 25°C |
|------------------|----------------|-----------------------------|-----------------------------|
| 50V              | 25A            | 0.56V                       | 0.5mA                       |

### FEATURES

- Low Profile Design for Smart Phone Charger
- Ideal for SMT Mounting
- Low forward voltage drop
- High forward surge capability
- Excellent High Temperature Stability



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

| Symbol              | Parameter                                                                                        | Value | Unit |
|---------------------|--------------------------------------------------------------------------------------------------|-------|------|
| V <sub>RRM</sub>    | Peak Repetitive Reverse Voltage                                                                  | 50    | V    |
| V <sub>RWM</sub>    | Working Peak Reverse Voltage                                                                     | 50    | V    |
| V <sub>RM</sub>     | DC Blocking Voltage                                                                              | 50    | V    |
| V <sub>R(RMS)</sub> | RMS Reverse Voltage                                                                              | 35    | V    |
| I <sub>O</sub>      | Average Rectified Output Current                                                                 | 25    | A    |
| I <sub>FSM</sub>    | Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | 300   | A    |
| E <sub>AS</sub>     | Non-Repetitive Avalanche Energy (T <sub>J</sub> = 25°C, I <sub>AS</sub> = 15, L = 5mH)           | 410   | mJ   |
| P <sub>ARM</sub>    | Repetitive Peak Avalanche Energy                                                                 | 36000 | W    |

### THERMAL CHARACTERISTICS

| Symbol           | Parameter                               | Value      | Unit |
|------------------|-----------------------------------------|------------|------|
| R <sub>θJA</sub> | Thermal Resistance, Junction-to-Ambient | 12         | °C/W |
| T <sub>J</sub>   | Operating Temperature Range             | -55 to 150 | °C   |
| T <sub>STG</sub> | Storage Temperature Range               | -55 to 175 | °C   |

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise specified)

| Symbol         | Parameter            | Conditions                                   | Min | Typ  | Max  | Unit |
|----------------|----------------------|----------------------------------------------|-----|------|------|------|
| V <sub>F</sub> | Forward Voltage Drop | I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C  |     | 0.48 | 0.52 | V    |
|                |                      | I <sub>F</sub> = 25A, T <sub>J</sub> = 25°C  |     | 0.52 | 0.56 | V    |
|                |                      | I <sub>F</sub> = 25A, T <sub>J</sub> = 125°C |     | 0.51 | 0.55 | V    |
| I <sub>R</sub> | Leakage Current      | V <sub>R</sub> = 50V, T <sub>J</sub> = 25°C  |     | 180  | 500  | uA   |
|                |                      | V <sub>R</sub> = 50V, T <sub>J</sub> = 125°C |     |      | 100  | mA   |
| C <sub>T</sub> | Total Capacitance    | V <sub>R</sub> = 50V, f = 1MHz               |     | 290  |      | pF   |

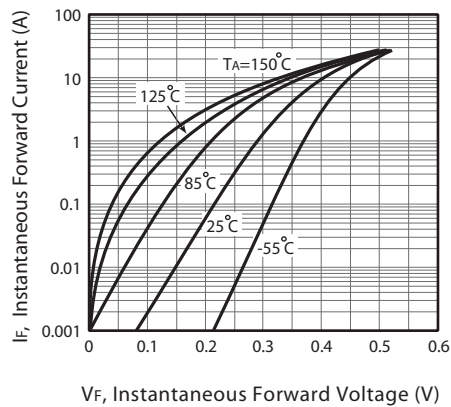


Figure 1. Typical Forward Characteristics

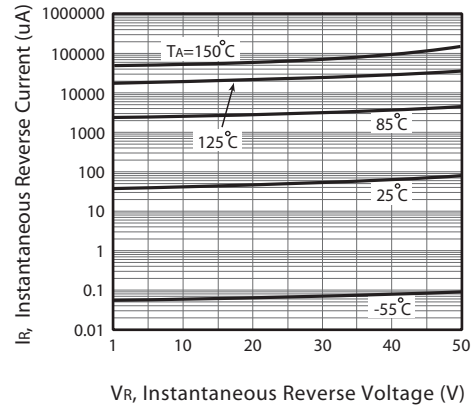


Figure 2. Typical Reverse Characteristics

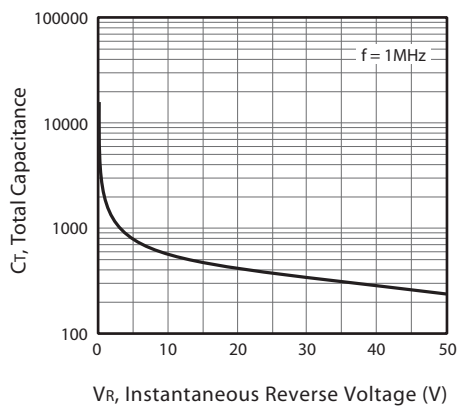


Figure 3. Total Capacitance vs. Reverse Voltage

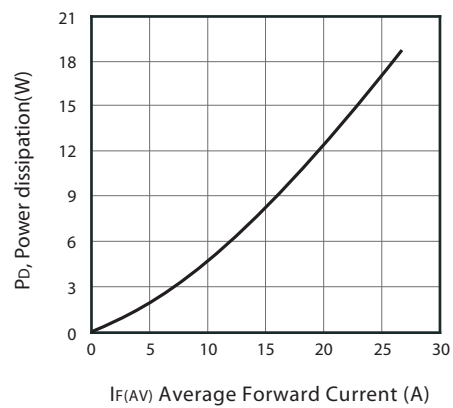


Figure 4. Forward Power Dissipation

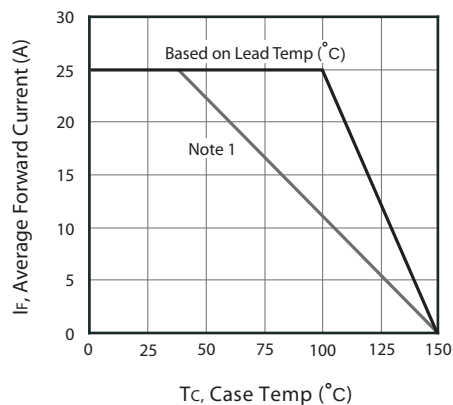


Figure 5. Forward Current Derating Curve

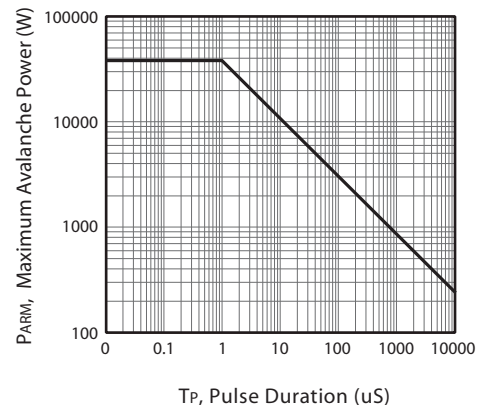


Figure 6. Maximum Avalanche Power Curve

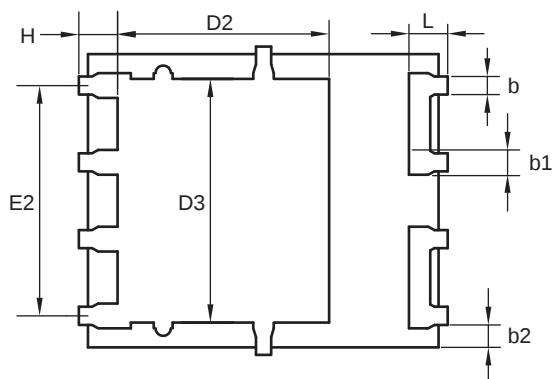
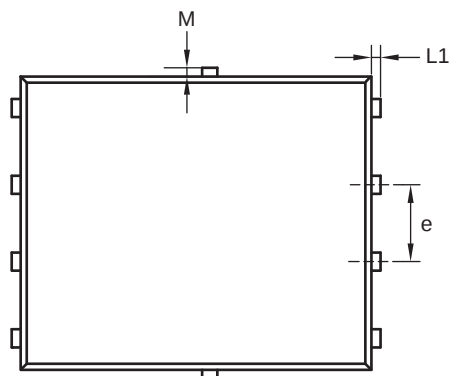
**Note:** 1. Device mounted on FR-4 substrate, 2oz copper, with 10cm x 10cm pad layout.

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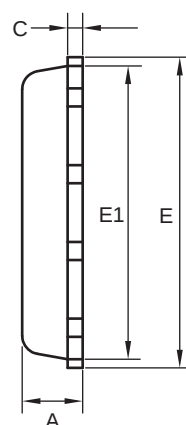
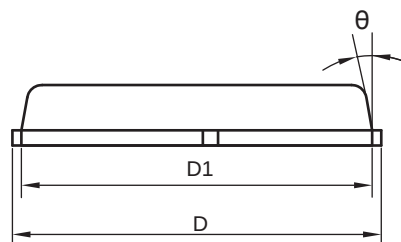
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## PACKAGE OUTLINE DIMENSIONS

### DFN 5x6



| SYMBOLS | MILLIMETERS |      |      |
|---------|-------------|------|------|
|         | MIN.        | NOM. | MAX. |
| A       | 0.90        | 1.00 | 1.10 |
| b       | 0.20        | 0.30 | 0.40 |
| b1      | 0.31        | 0.41 | 0.51 |
| b2      | 0.25        | 0.35 | 0.45 |
| C       | 0.15        | 0.25 | 0.35 |
| D       | 5.90        | 6.10 | 6.30 |
| D1      | 5.60        | 5.80 | 6.00 |
| D2      | 3.50 REF.   |      |      |
| D3      | 4.00 REF.   |      |      |
| E       | 5.00        | 5.20 | 5.40 |
| E1      | 4.70        | 4.90 | 5.10 |
| E2      | 3.71        | 3.81 | 3.91 |
| e       | 1.17        | 1.27 | 1.37 |
| H       | 0.63 REF.   |      |      |
| L       | 0.53        | 0.63 | 0.73 |
| L1      | 0.05        | 0.15 | 0.25 |
| M       | 0.05        | 0.15 | 0.25 |
| θ       | 8°          | 10°  | 12°  |



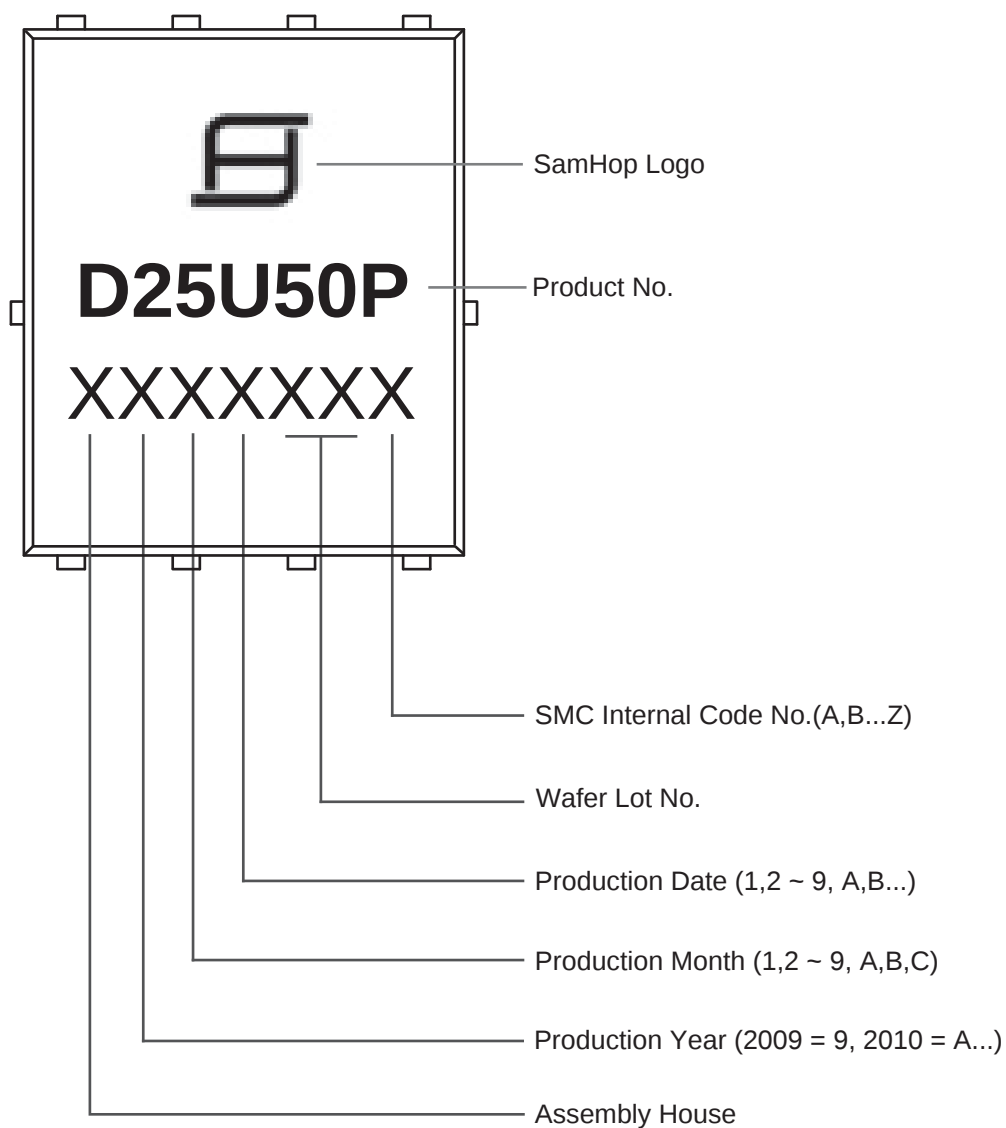
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## TOP MARKING DEFINITION

DFN 5x6



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