

Description

General application schottky barrier diode, encapsulated in a DFN1006-2 leadless ultra small Surface-Mounted Device (SMD) plastic package.

Features

- Forward current: 1 A
- Reverse voltage: $V_R \geq 40$ V
- Low forward voltage: $V_F \leq 0.6$ V @1A
- Low reverse current: $I_R \leq 100\mu\text{A}$ @ 40 V
- High reliability.

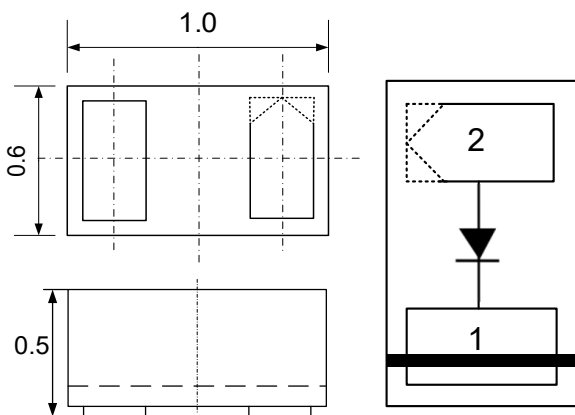
Mechanical Characteristics

- DFN1006-2 Small Outline Plastic Package
- Level 1 moisture sensitivity per J-STD-020
- Case Material: “Green” Molding Compound
- We declare that the material of product compliance with RoHS requirements

Applications

- Low voltage rectification
- High efficiency DC-to-DC conversion
- Switch Mode Power Supply (SMPS)
- Low power consumption applications
- Ultra high-speed switching
- LED backlight for mobile application

Dimensions and Pin Configuration



Package Dimensions

Circuit and Pin Schematic

Marking Information



H = Device Marking Code
 Bar denotes Cathode

Ordering Information

| Part Number | Packaging | Reel Size |
|-------------|-------------------|-----------|
| ASK45V1RP1 | 10000/Tape & Reel | 7 inch |

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

| Parameter | Symbol | Value | Units |
|---|-----------------|-------------|----------------------|
| Reverse voltage (repetitive peak) | V_{RM} | 45 | V |
| Reverse voltage (DC) | V_R | 40 | V |
| Average rectified forward current | I_O | 1 | A |
| Non-Repetitive Peak Forward Surge Current | I_{FSM} | 5 | A |
| Power Dissipation | P_D | 400 | mW |
| Thermal resistance | $R_{\theta JA}$ | 310 | $^{\circ}\text{C/W}$ |
| Junction Temperature | T_J | -55 to +125 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 to +150 | $^{\circ}\text{C}$ |

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

| Parameter | Symbol | Min | TYP | Max | Unit | Test Condition |
|----------------------|--------|-----|------|------|---------------|--------------------------------|
| Reverse Current | I_R | | | 100 | μA | $V_R=40\text{V}$ |
| Forward Voltage | V_F | | 0.31 | 0.40 | V | $I_F=100\text{mA}$ |
| | | | 0.42 | 0.50 | | $I_F=500\text{mA}$ |
| | | | 0.55 | 0.60 | | $I_F=1\text{A}$ |
| Junction Capacitance | C_j | | 90 | | pF | $V_R=0\text{V}, f=1\text{MHz}$ |

Typical Characteristics

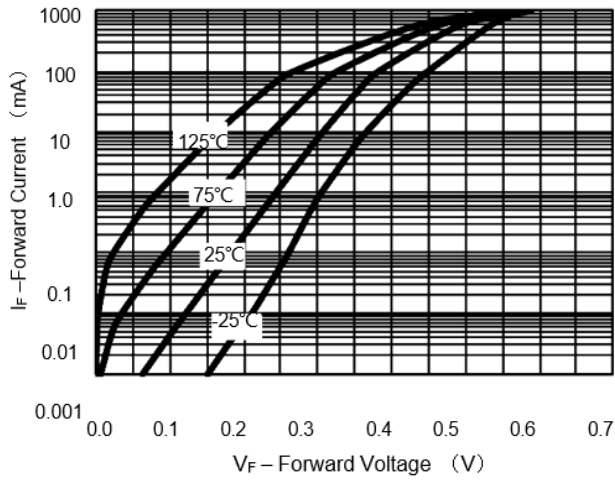


Fig 1. Forward Voltage

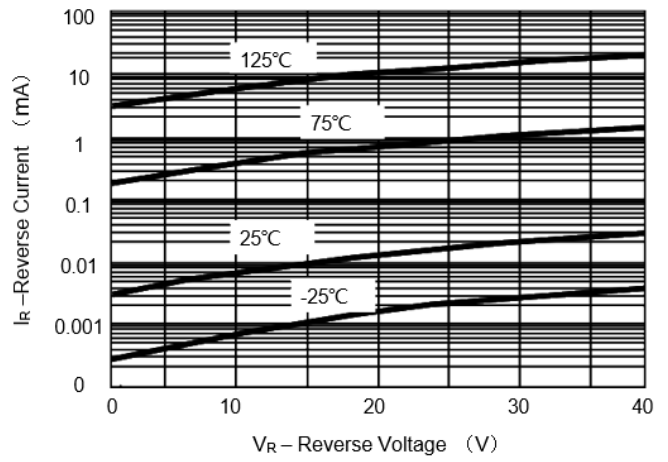


Fig 2. Leakage Current

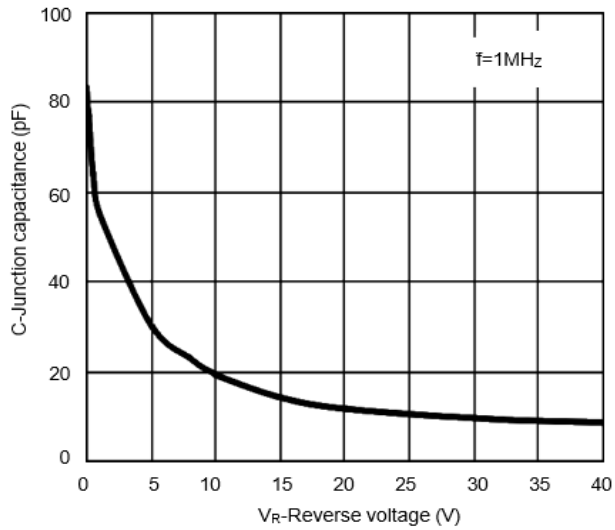
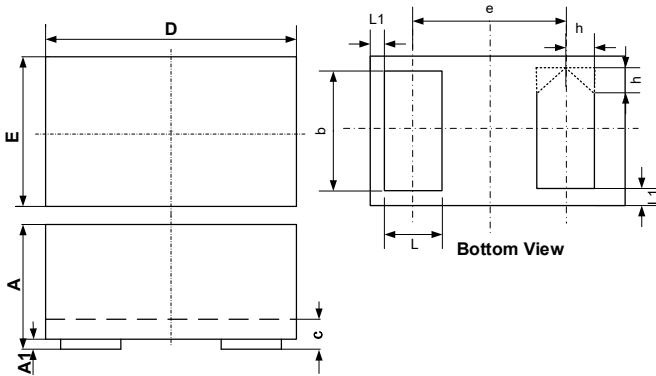


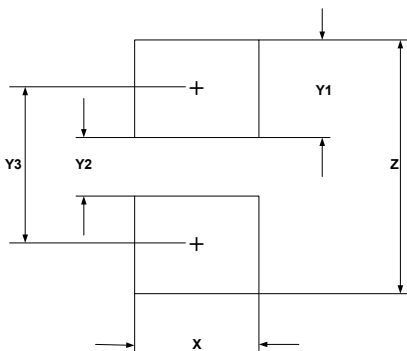
Fig 3. Capacitance vs. Reverses voltage

DFN1006-2 Package Outline Drawing



| SYM | DIMENSIONS | | | | | |
|-----|-------------|------|------|-----------|-------|-------|
| | MILLIMETERS | | | INCHES | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| A1 | 0.00 | 0.02 | 0.05 | 0.000 | 0.001 | 0.002 |
| b | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| c | 0.12 | 0.15 | 0.18 | 0.005 | 0.006 | 0.007 |
| D | 0.95 | 1.00 | 1.05 | 0.037 | 0.039 | 0.041 |
| e | 0.65 BSC | | | 0.026 BSC | | |
| E | 0.55 | 0.60 | 0.65 | 0.022 | 0.024 | 0.026 |
| L | 0.20 | 0.25 | 0.30 | 0.008 | 0.010 | 0.012 |
| L1 | 0.05REF | | | 0.002REF | | |
| h | 0.07 | 0.12 | 0.17 | 0.003 | 0.005 | 0.007 |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| X | 0.60 | 0.024 |
| Y1 | 0.50 | 0.020 |
| Y2 | 0.30 | 0.012 |
| Y3 | 0.80 | 0.032 |
| Z | 1.30 | 0.052 |

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