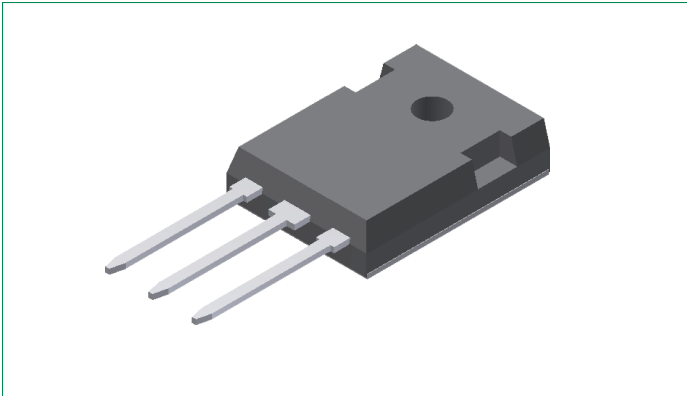


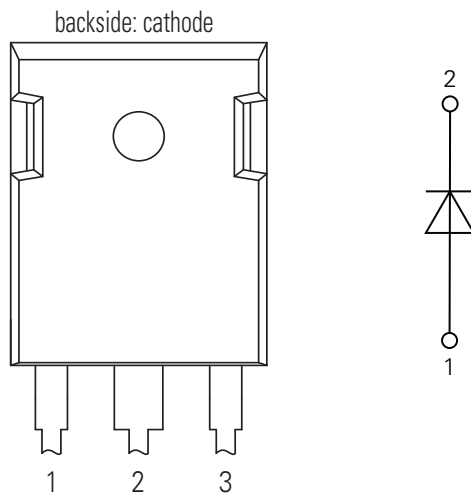
DSS40-0008D

8 V, 40 A Schottky Diode

RoHS

**Features:**

- Very low V_F
- Extremely low switching losses
- Low I_{RM} values
- Improved thermal behavior
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low-noise switching
- RoHS compliant
- Epoxy meets UL 94V-0

Pinout Diagram (TO-247)**1:** Anode; **2:** Cathode; **3:** Not connected**Applications:**

- Rectifiers in Switch Mode Power Supplies (SMPS)
- Free wheeling diode in low voltage converters

Product Summary

| Characteristic | Value | Unit |
|----------------|-------|------|
| V_{RRM} | 8 | V |
| $I_{F(AV)}$ | 40 | A |
| V_F | 0.32 | V |

Maximum Ratings

| Symbol | Characteristics | Condition | Value | Units |
|-------------|--|--|-------------|--------------------|
| V_{RSM} | Maximum Non-repetitive Reverse Blocking Voltage | $T_{vj} = 25\text{ }^{\circ}\text{C}$ | 8 | V |
| V_{RRM} | Maximum Repetitive Reverse Blocking Voltage | $T_{vj} = 25\text{ }^{\circ}\text{C}$ | 8 | V |
| I_R | Reverse Current | $V_R = 8\text{ V}, T_{vj} = 25\text{ }^{\circ}\text{C}$ | 10 | mA |
| | | $V_R = 8\text{ V}, T_{vj} = 100\text{ }^{\circ}\text{C}$ | 500 | |
| $I_{F(AV)}$ | Average Forward Current Rectangular $d = 0.5$ | $T_c = 88\text{ }^{\circ}\text{C}, T_{vj} = 100\text{ }^{\circ}\text{C}$ | 40 | A |
| I_{FSM} | Maximum Forward Surge Current (Half Sine) | $t = 10\text{ ms}, (50\text{ Hz}), T_{vj} = 45\text{ }^{\circ}\text{C}$ | 900 | A |
| P_{tot} | Total Power Dissipation | $T_c = 25\text{ }^{\circ}\text{C}$ | 110 | W |
| T_{vj} | Virtual Junction Temperature Range | – | -55 to +100 | $^{\circ}\text{C}$ |
| T_{op} | Operating Temperature Range | – | -55 to +100 | $^{\circ}\text{C}$ |

Electrical Characteristics

| Symbol | Characteristics | Conditions | Value | | | Units |
|------------|----------------------|---|-------|------|------|------------|
| | | | Min. | Typ. | Max. | |
| V_F | Forward Voltage Drop | $I_F = 40\text{ A}; \text{ Pulse}, T_{vj} = 25\text{ }^{\circ}\text{C}$ | – | – | 0.38 | V |
| | | $I_F = 80\text{ A}; \text{ Pulse}, T_{vj} = 25\text{ }^{\circ}\text{C}$ | – | – | 0.44 | |
| | | $I_F = 40\text{ A}; \text{ Pulse}, T_{vj} = 100\text{ }^{\circ}\text{C}$ | – | – | 0.32 | |
| | | $I_F = 80\text{ A}; \text{ Pulse}, T_{vj} = 100\text{ }^{\circ}\text{C}$ | – | – | 0.41 | |
| $V_{(FO)}$ | Threshold Voltage | $T_{vj} = 100\text{ }^{\circ}\text{C}$ | – | – | 0.23 | V |
| r_F | Slope Resistance | | – | – | 2.3 | m Ω |
| C_j | Junction Capacitance | $V_R = 5\text{ V}, T_{vj} = 25\text{ }^{\circ}\text{C}, f = 1\text{ MHz}$ | – | 9000 | – | pF |

Thermal Specifications

| Symbol | Characteristics | Condition | Value | | | Units |
|---------------|---------------------------------------|-----------|-------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| $R_{th(j-c)}$ | Thermal Resistance, Junction to Case | – | – | – | 0.7 | K/W |
| $R_{th(c-h)}$ | Thermal Resistance, Case to Heat Sink | – | – | 0.3 | – | K/W |

Package

| Symbol | Characteristics | Conditions | Value | | | Units |
|-----------|---------------------------------------|--------------|-------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| I_{RMS} | RMS Current | per terminal | – | – | 70 | A |
| M_s | Mounting Torque for Screw to Heatsink | – | 0.8 | – | 1.2 | Nm |
| F_c | Mounting force with clip | – | 20 | – | 120 | N |
| G | Weight | – | – | 6 | – | g |

Characteristic Curves

Figure 1. Maximum Forward Voltage Drop Characteristics

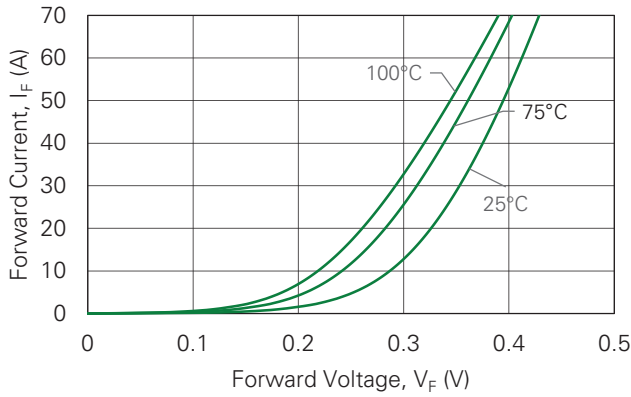


Figure 2. Typical Reverse Current vs. Reverse Voltage

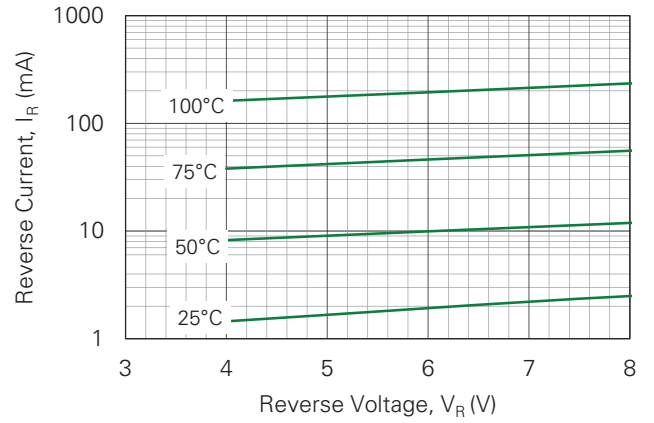


Figure 3. Typical Junction Capacitance vs. Reverse Voltage

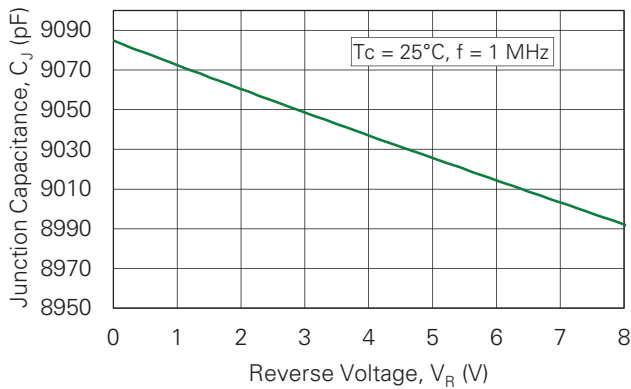


Figure 4. Average Forward Current vs. Case Temperature

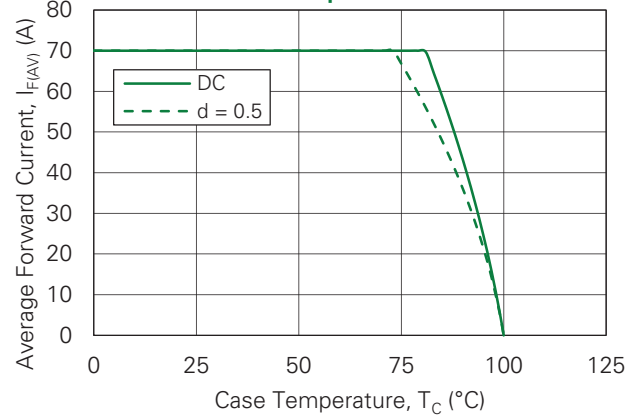


Figure 5. Forward Power Loss Characteristics

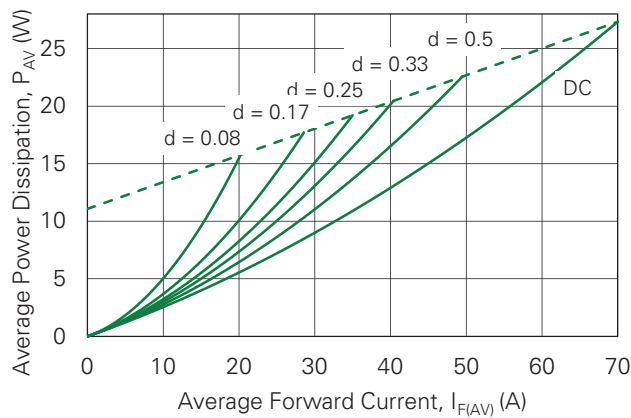
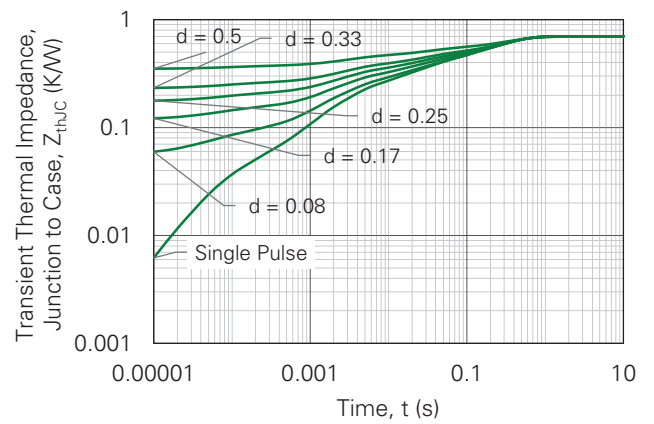
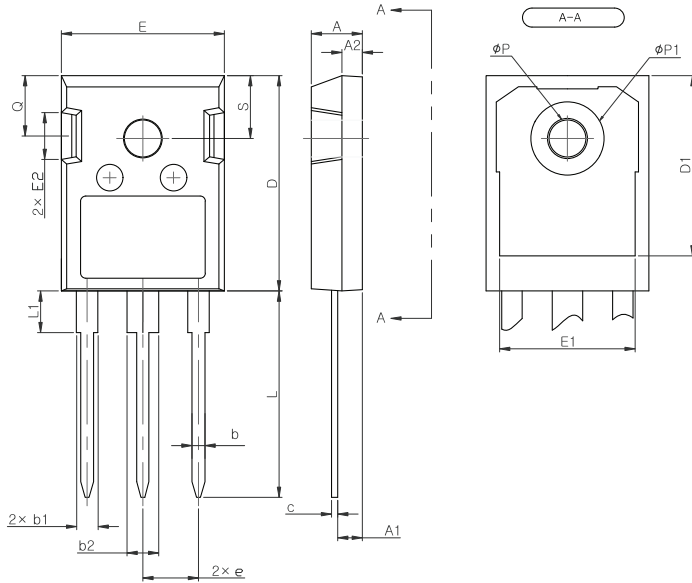


Figure 6. Transient Thermal Impedance

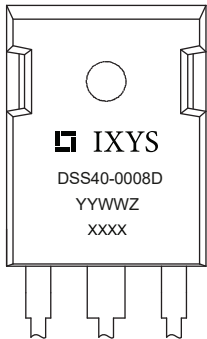


Part Outline Drawing (TO-247)



| Symbol | Inches | | Millimeters | |
|--------|-----------|-------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.189 | 0.205 | 4.80 | 5.20 |
| A1 | 0.090 | 0.10 | 2.29 | 2.54 |
| A2 | 0.075 | 0.083 | 1.90 | 2.10 |
| b | 0.043 | 0.051 | 1.10 | 1.30 |
| b1 | 0.075 | 0.087 | 1.91 | 2.20 |
| b2 | 0.115 | 0.126 | 2.92 | 3.20 |
| c | 0.020 | 0.027 | 0.50 | 0.70 |
| D | 0.819 | 0.840 | 20.80 | 21.34 |
| D1 | 0.686 | 0.702 | 17.43 | 17.83 |
| E | 0.620 | 0.635 | 15.75 | 16.13 |
| E1 | 0.514 | 0.530 | 13.06 | 13.46 |
| E2 | 0.170 | 0.190 | 4.32 | 4.83 |
| e | 0.215 BSC | | 5.45 BSC | |
| L | 0.781 | 0.797 | 19.85 | 20.25 |
| L1 | - | 0.177 | - | 4.49 |
| Ø P | 0.140 | 0.144 | 3.55 | 3.65 |
| Ø P1 | 0.281- | 0.285 | 7.14 | 7.24 |
| Q | 0.220 | 0.244 | 5.59 | 6.19 |
| S | 0.242 BSC | | 6.15 BSC | |

Part Number and Marking



- D = Diode
- S = Schottky Diode
- S = Product Generation
- 40 = Current Rate
- 0008 = Voltage Rating
- D = Package Code
- YY = Year
- WW = Work Week
- Z = Plant Location Code
- xxxx = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|-------------|-------------|--------------|--------------|
| DSS40-0008D | DSS40-0008D | Tube | 30 pcs/ tube |

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Part of:

