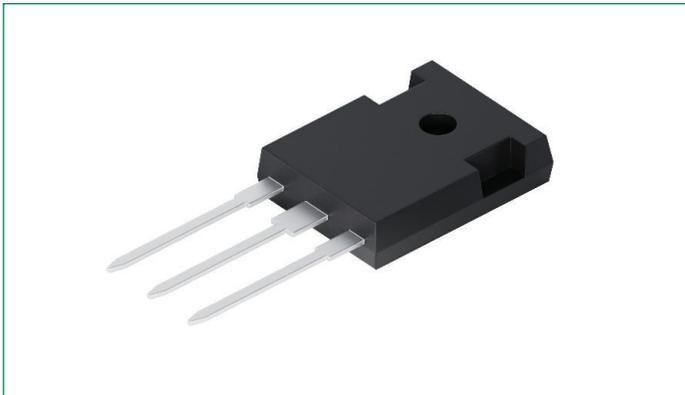


DSSK80-0025B

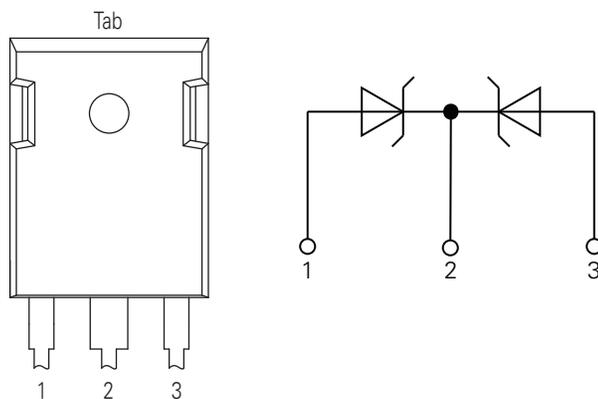
25 V, 2 x 40 A High-Performance Schottky Diode

Low Loss and Soft Recovery Common Cathode

RoHS



Pinout Diagram (TO-247)



1: Anode; **2:** Cathode ; **3:** Anode; **Tab:** Cathode

Features

- Extremely low switching losses
- Very low V_F

Benefits

- Low voltage peaks for reduced protection circuits
- Low-noise switching
- High reliability circuit operation
- Improved thermal behavior
- Longer lifetime of the system

Applications

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

Package

- RoHS compliant
- Industry standard outline
- Epoxy meets UL 94V-0

Product Summary

| Characteristic | Value | Unit |
|----------------|--------|------|
| V_{RRM} | 25 | V |
| $I_{F(AV)}$ | 2 x 40 | A |
| V_F | 0.42 | V |

Maximum Ratings

| Symbol | Characteristics | Condition | Value | Units |
|-------------|---|---|-------------|--------------------|
| V_{RSM} | Non-repetitive Reverse Blocking Voltage | $T_{vj} = 25\text{ }^{\circ}\text{C}$ | 25 | V |
| V_{RRM} | Repetitive Reverse Blocking Voltage | $T_{vj} = 25\text{ }^{\circ}\text{C}$ | 25 | V |
| $I_{F(AV)}$ | Average Forward Current | $T_c = 108\text{ }^{\circ}\text{C}$, $T_{vj} = 125\text{ }^{\circ}\text{C}$, Rectangular $d = 0.5$ | 40 | A |
| I_{FSM} | Non-repetitive Forward Surge Current | $t = 10\text{ ms}$, (50 Hz), half sine, $T_{vj} = 45\text{ }^{\circ}\text{C}$ | 720 | A |
| $V_{(FO)}$ | Threshold Voltage | $T_{vj} = 125\text{ }^{\circ}\text{C}$ | 0.43 | V |
| r_F | Slope Resistance | | 3.3 | m Ω |
| P_{tot} | Total Power Dissipation | $T_c = 25\text{ }^{\circ}\text{C}$ | 250 | W |
| T_{stg} | Storage Temperature Range | – | -55 to +125 | $^{\circ}\text{C}$ |
| T_{vj} | Virtual Junction Temperature Range | – | -55 to +125 | $^{\circ}\text{C}$ |
| T_{op} | Operating Temperature Range | – | -55 to +125 | $^{\circ}\text{C}$ |

Electrical Characteristics

| Symbol | Characteristics | Conditions | Value | | | Units |
|--------|----------------------|---|-------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| I_R | Reverse Current | $V_R = 25\text{ V}$, $T_{vj} = 25\text{ }^{\circ}\text{C}$ | – | – | 5 | mA |
| | | $V_R = 25\text{ V}$, $T_{vj} = 100\text{ }^{\circ}\text{C}$ | – | – | 220 | |
| V_F | Forward Voltage | $I_F = 40\text{ A}$; Pulse, $T_{vj} = 25\text{ }^{\circ}\text{C}$ | – | – | 0.52 | V |
| | | $I_F = 80\text{ A}$; Pulse, $T_{vj} = 25\text{ }^{\circ}\text{C}$ | – | – | 0.64 | |
| | | $I_F = 40\text{ A}$; Pulse, $T_{vj} = 125\text{ }^{\circ}\text{C}$ | – | – | 0.42 | |
| | | $I_F = 80\text{ A}$; Pulse, $T_{vj} = 125\text{ }^{\circ}\text{C}$ | – | – | 0.58 | |
| C_j | Junction Capacitance | $V_R = 5\text{ V}$, $f = 1\text{ MHz}$, $T_{vj} = 25\text{ }^{\circ}\text{C}$ | – | 2478 | – | pF |

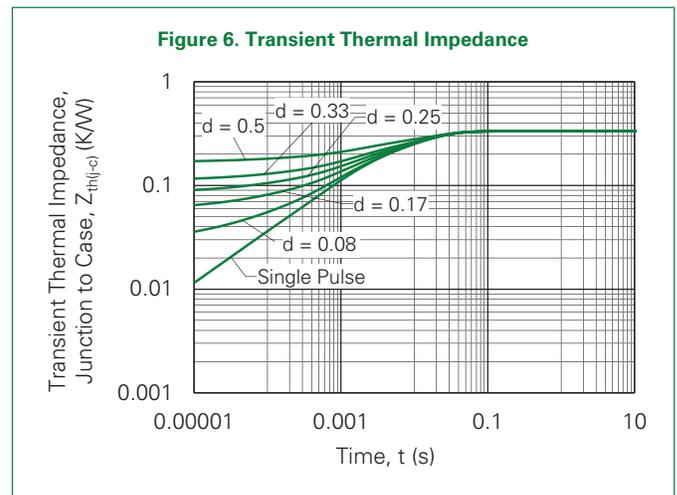
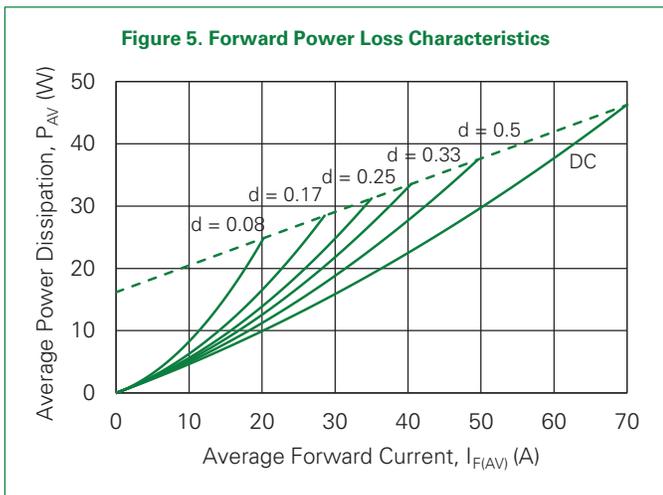
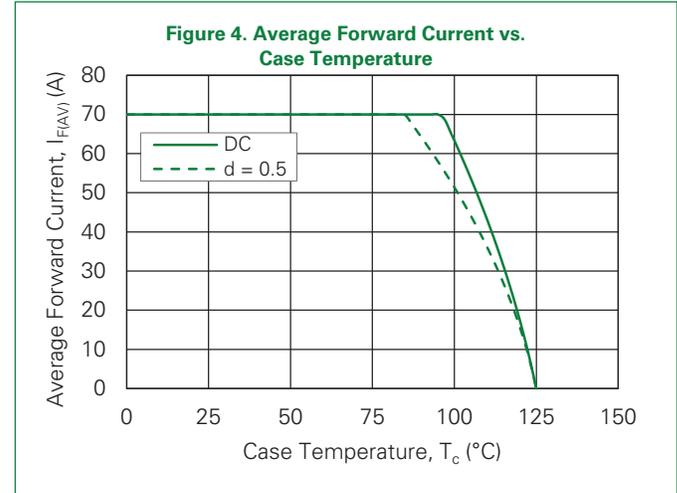
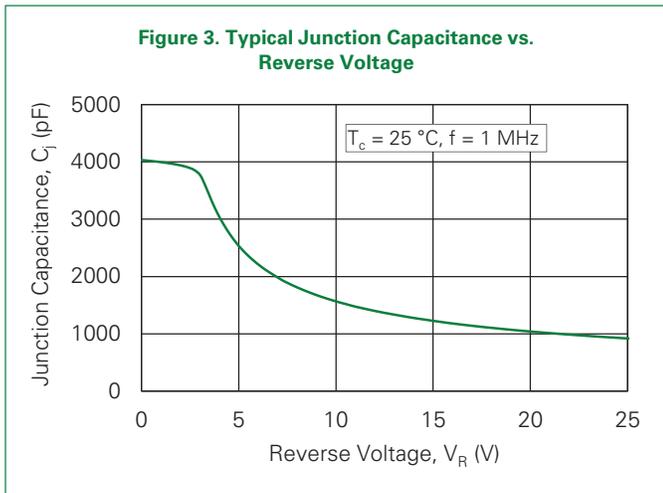
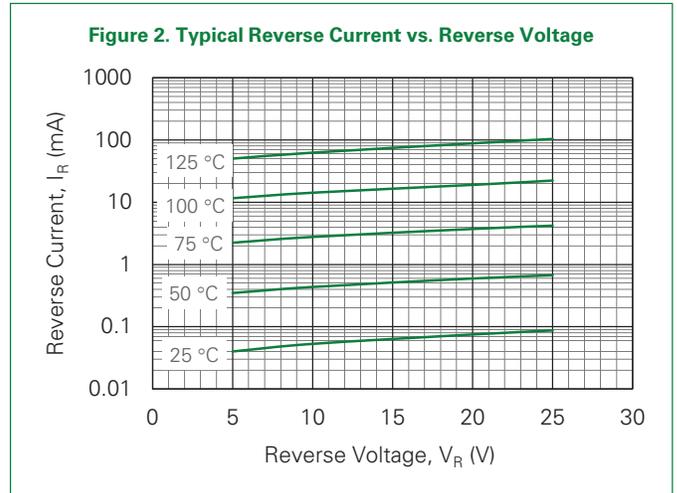
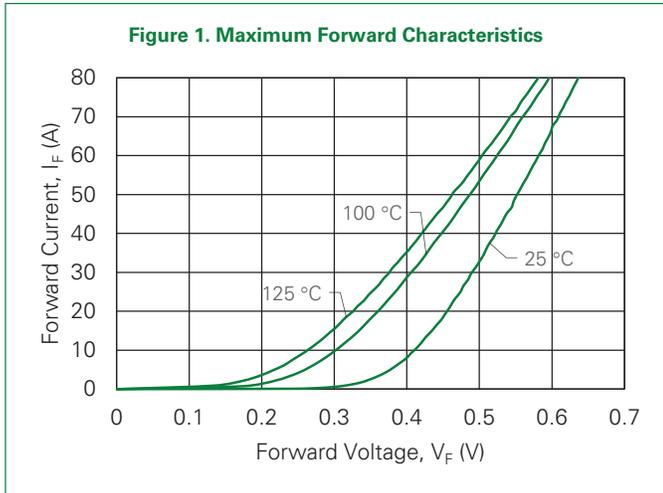
Thermal Specifications

| Symbol | Characteristics | Value | | | Units |
|---------------|--------------------------------------|-------|------|------|-------|
| | | Min. | Typ. | Max. | |
| $R_{th(j-c)}$ | Thermal Resistance, Junction to Case | – | – | 0.4 | K/W |
| $R_{th(c-h)}$ | Thermal Resistance, Case to Heatsink | – | 0.3 | – | K/W |

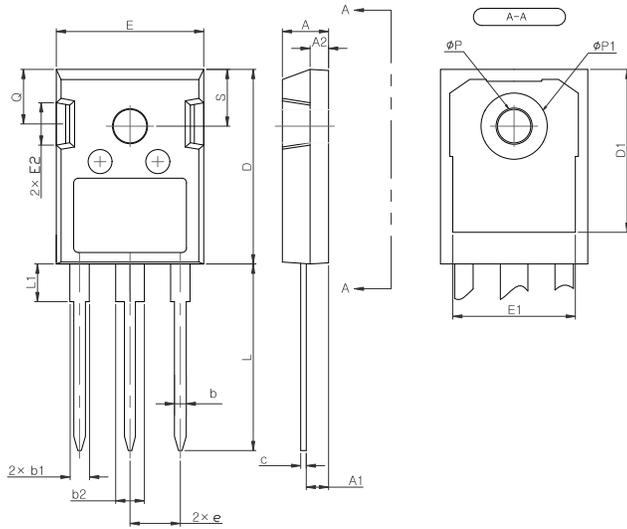
Package (TO-247)

| Symbol | Characteristics | Conditions | Value | | | Units |
|------------|---------------------------------------|--------------|-------|------|------|-------|
| | | | Min. | Typ. | Max. | |
| I_{tRMS} | 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

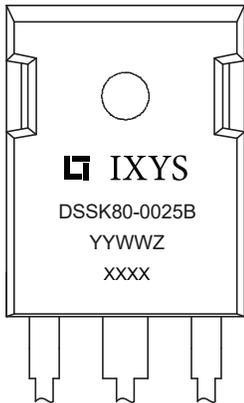


Part Outline Drawing (TO-247)



| 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
- SK = Product Generation
- 80 = Current (2 x 40 A)
- 0025 = Voltage (25 V)
- B = Package (TO-247)
- YY = Year
- WW = Work Week
- Z = Plant Location Code
- xxxx = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|--------------|--------------|--------------|--------------|
| DSSK80-0025B | DSSK80-0025B | Tube | 30 pcs/ tube |

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Part of:

