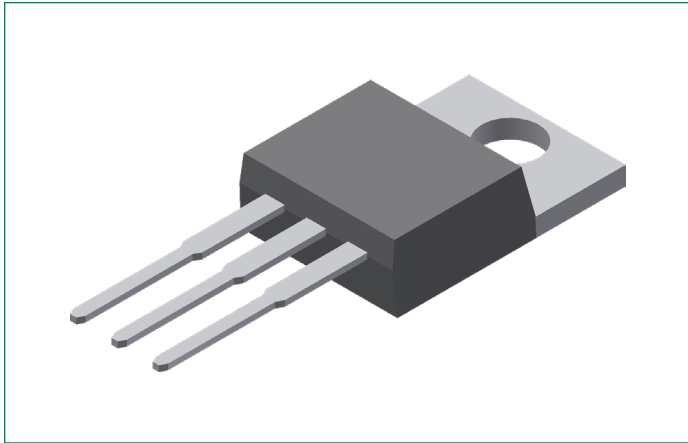


DSSK16-01A

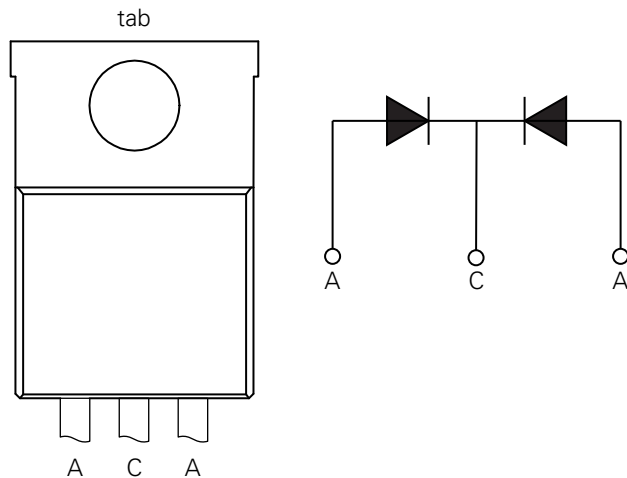
100 V, 16 A Schottky Rectifier Diode

RoHS

Pb

**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
- Terminals finish: 100% pure tin
- This is a Pb-free device
- Epoxy meets UL 94 V-0

Pinout Diagram (TO-220AB)**C:** Cathode; **A:** Anode; **tab:** Cathode**Applications:**

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Product Summary

| Characteristic | Value | Unit |
|----------------|-------|------|
| V_{RRM} | 100 | V |
| I_{FAV} | 2 x 8 | A |
| V_F | 0.63 | V |

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

| Symbol | Characteristics | Condition | Max. | Units |
|-----------|---|--|--------------------------------|-------|
| V_{RRM} | Peak Repetitive Reverse Voltage | – | 100 | V |
| V_{RWM} | Working Peak Reverse Voltage | | | |
| V_R | DC Blocking Voltage | | | |
| I_{FAV} | Average Rectified Forward Current | 50% duty cycle @ $T_C = 165^\circ\text{C}$, rectangular wave form | 8 (Per Leg) 16 (Per Device) | A |
| I_{FSM} | Peak One Cycle Non-Repetitive Surge Current (Per Leg) | 10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$ | 120 | A |
| P_{tot} | Total power dissipation | $T_C = 25^\circ\text{C}$ | 90 | W |
| E_{AS} | Non-repetitive Avalanche Energy | $I_{AS} = 5\text{ A}$, $L = 100\ \mu\text{H}$, $T_{VJ} = 25^\circ\text{C}$ | 1.25 | mJ |
| I_{AR} | Repetitive Avalanche Current | $V_A = 1.5 V_R$, typ. $f = 1\text{ kHz}$ | 0.5 | A |

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

| Symbol | Characteristics | Conditions | Typ. | Max. | Units |
|----------|---|--|------|------|---------------|
| V_{F1} | Forward Voltage Drop (Per Leg) ¹ | @ 8 A, Pulse, $T_{VJ} = 25^\circ\text{C}$ | – | 0.81 | V |
| V_{F2} | | @ 8 A, Pulse, $T_{VJ} = 125^\circ\text{C}$ | – | 0.63 | V |
| I_{R1} | Reverse Current (Per Leg)* | @ $V_R = \text{rated } V_R$, $T_{VJ} = 25^\circ\text{C}$ | – | 300 | μA |
| I_{R2} | | @ $V_R = \text{rated } V_R$, $T_{VJ} = 125^\circ\text{C}$ | – | 12.5 | mA |
| C_T | Junction Capacitance | @ $V_R = 12\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$ | 223 | – | pF |

Note 1: Pulse width < 300 μs , duty cycle < 2%

Thermal-Mechanical Specifications

| Symbol | Characteristics | Condition | Specification | Units |
|------------|--|--------------|--------------------|------------------|
| T_{VJ} | Junction Temperature | – | -55 to +175 | $^\circ\text{C}$ |
| T_O | Operation Temperature | – | -55 to +150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | – | -55 to +150 | $^\circ\text{C}$ |
| M_D | Mounting torque | – | Min 0.4 Max 0.6 | Nm |
| F_C | Mounting force with clip | – | Min 20 Max 60 | N |
| R_{thJC} | Maximum Thermal Resistance Junction to Case | DC operation | 1.7 | K/W |
| R_{thJS} | Typical Thermal Resistance Junction to Heat Sink | – | 0.5 | K/W |
| wt | Approximate Weight | – | 2.0 | g |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

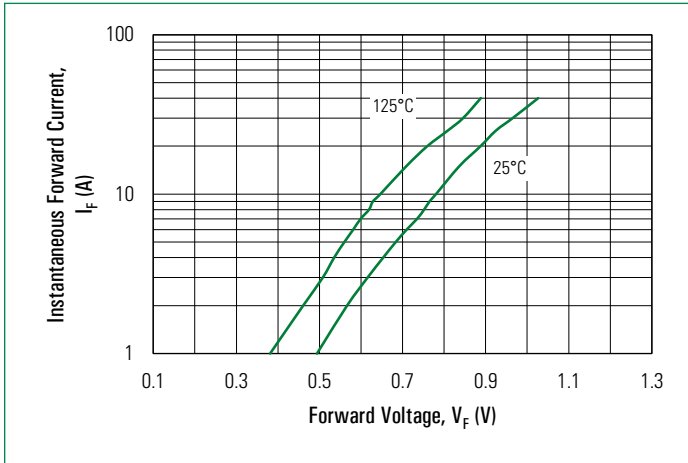


Fig. 2. Typical Reverse Characteristics

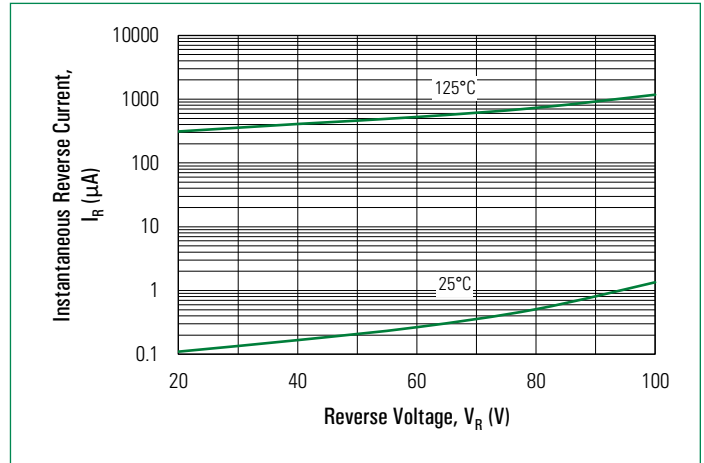
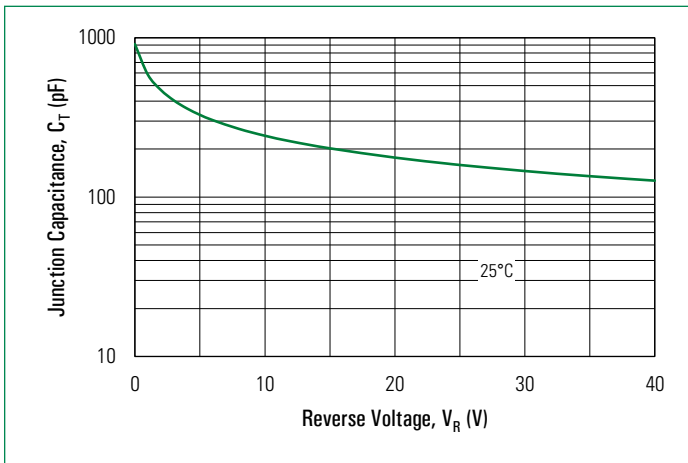
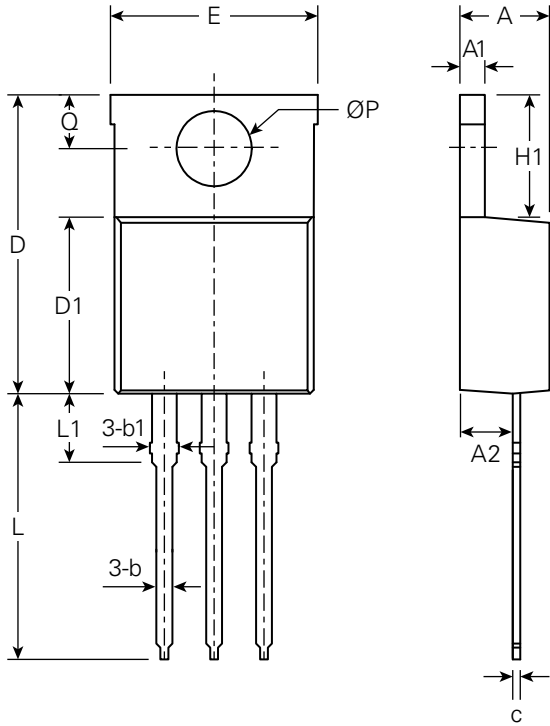


Fig. 3. Typical Junction Capacitance

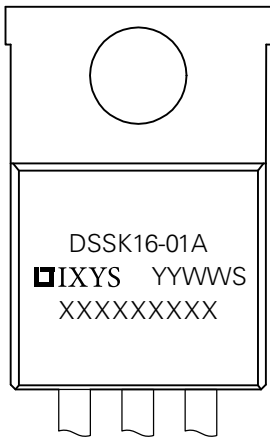


Part Outline Drawing (TO-220AB)



| Symbol | Inches | | | Millimeters | | |
|--------|--------|---------|------|-------------|---------|-------|
| | Min. | Typical | Max. | Min. | Typical | Max. |
| A | 0.14 | - | 0.19 | 3.56 | - | 4.83 |
| A1 | 0.02 | - | 0.06 | 0.51 | - | 1.40 |
| A2 | 0.08 | - | 0.11 | 2.03 | - | 2.92 |
| b | 0.01 | - | 0.04 | 0.38 | - | 1.02 |
| b1 | 0.44 | - | 0.07 | 1.14 | - | 1.78 |
| c | 0.01 | - | 0.02 | 0.31 | - | 0.61 |
| D | 0.56 | - | 0.65 | 14.22 | - | 16.51 |
| D1 | 0.33 | - | 0.37 | 8.38 | - | 9.42 |
| E | 0.38 | - | 0.42 | 9.65 | - | 10.67 |
| e | - | 0.1 | - | - | 2.54 | - |
| e1 | - | 0.20 | - | - | 5.08 | - |
| H1 | 0.23 | - | 0.27 | 5.84 | - | 6.86 |
| L | 0.50 | - | 0.58 | 12.70 | - | 14.73 |
| L1 | - | - | 0.25 | - | - | 6.35 |
| ØP | - | 0.14 | - | - | 3.56 | - |
| Q | 0.10 | - | 0.14 | 2.54 | - | 3.43 |

Part Number and Marking

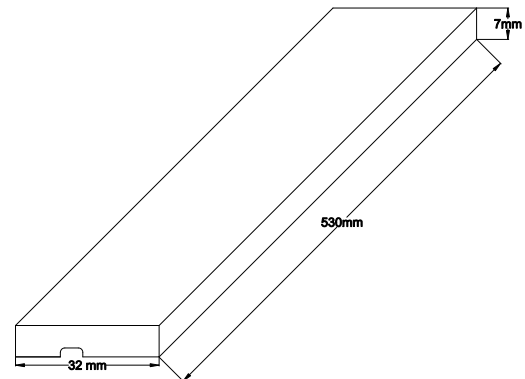


- DS = Schottky Diode
- SK = Product Generation
- 16 = Current Rate
- 01 = Voltage Rating
- A = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXXX = Lot Number

Ordering Information

| Part Number | Marking | Packing Mode | Quantity |
|-------------|------------|--------------|--------------|
| DSSK16-01A | DSSK16-01A | Tube | 50 pcs/ tube |

Packing Specifications



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