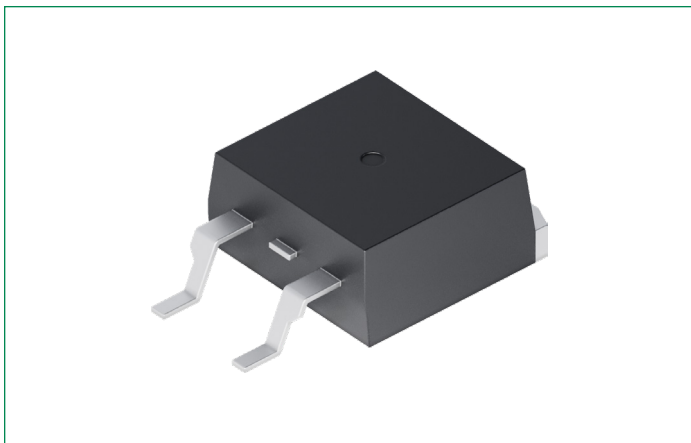


# DSSK28-01AS

## 100 V, 15 A Schottky Rectifier Diode

RoHS



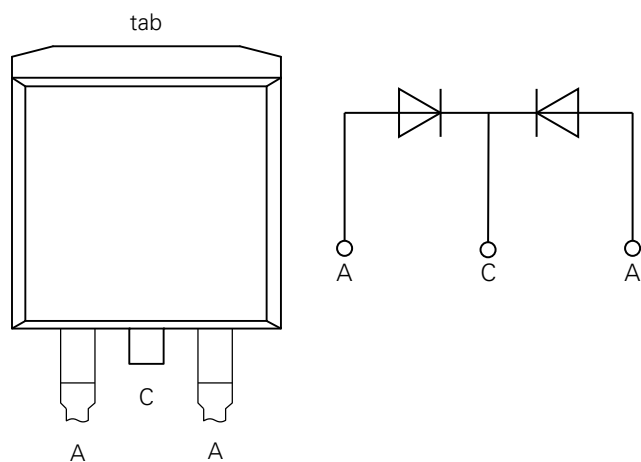
### Description

- 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
- Epoxy meets UL 94V-0

### Applications

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

### Pinout Diagram (TO-263AB)



**C:** Cathode; **A:** Anode; **tab:** Cathode

**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                                   |                                                                       |                                 |       |
| $I_{F(AV)}$ | Average Rectified Forward Current                     | 50% duty cycle @ $T_C = 160^\circ\text{C}$ ,<br>rectangular wave form | 15 (Per Leg)<br>30 (Per Device) | A     |
| $I_{FSM}$   | Peak One Cycle Non-Repetitive Surge Current (Per Leg) | 10 ms, Half Sine pulse, $T_J = 25^\circ\text{C}$                      | 280                             | A     |
| $P_{tot}$   | Total power dissipation                               | $T_C = 25^\circ\text{C}$                                              | 105                             | W     |

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

| Symbol   | Characteristics                             | Conditions                                                                 | Typ. | Max. | Units         |
|----------|---------------------------------------------|----------------------------------------------------------------------------|------|------|---------------|
| $V_{F1}$ | Forward Voltage Drop (Per Leg) <sup>1</sup> | @ 15A, Pulse, $T_J = 25^\circ\text{C}$                                     | —    | 0.82 | V             |
| $V_{F1}$ |                                             | @ 15A, Pulse, $T_J = 125^\circ\text{C}$                                    | —    | 0.64 | V             |
| $I_{R1}$ | Reverse Current (Per Leg)*                  | @ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$                     | —    | 500  | $\mu\text{A}$ |
| $I_{R2}$ |                                             | @ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$                    | —    | 15   | mA            |
| $C_T$    | Junction Capacitance                        | @ $V_R = 12\text{V}$ , $T_C = 25^\circ\text{C}$<br>$f_{SIG} = 1\text{MHz}$ | 334  | —    | pF            |

**Note 1:** Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%**Thermal-Mechanical Specifications**

| Symbol     | Characteristics                              | Condition    | Specification    | Units              |
|------------|----------------------------------------------|--------------|------------------|--------------------|
| $T_J$      | 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      | $^\circ\text{C}$   |
| $F_C$      | Mounting force with clip                     | —            | Min 20<br>Max 60 | N                  |
| $R_{thJC}$ | Maximum Thermal Resistance Junction to Case  | DC operation | 1.40             | $^\circ\text{C/W}$ |
| $R_{thCS}$ | Typical Thermal Resistance Case to Heat Sink | —            | 0.25             | $^\circ\text{C/W}$ |
| wt         | Approximate Weight                           | —            | 1.85             | g                  |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

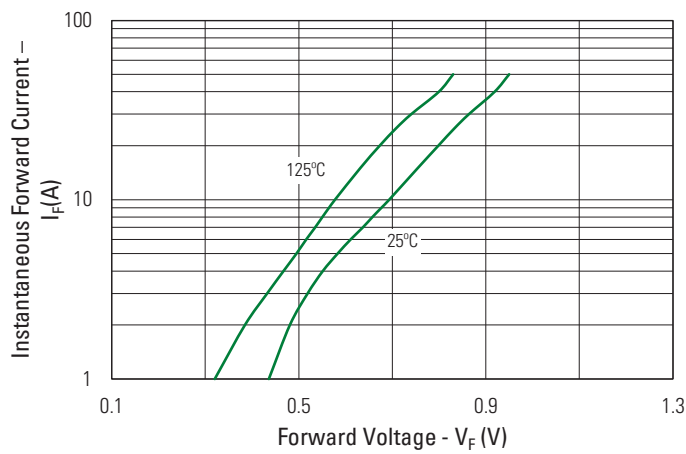


Fig. 2. Typical Reverse Characteristics

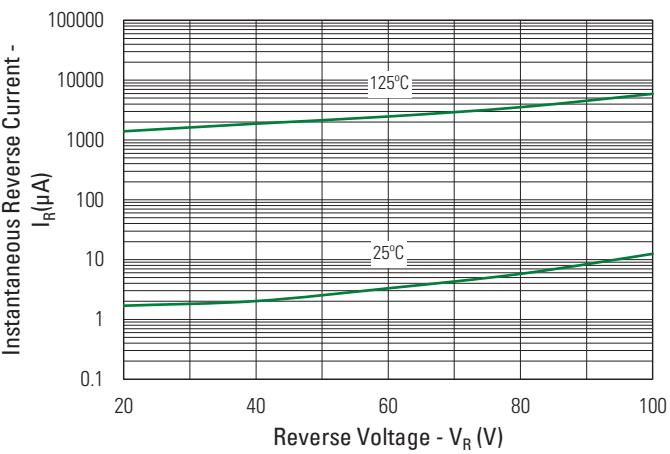
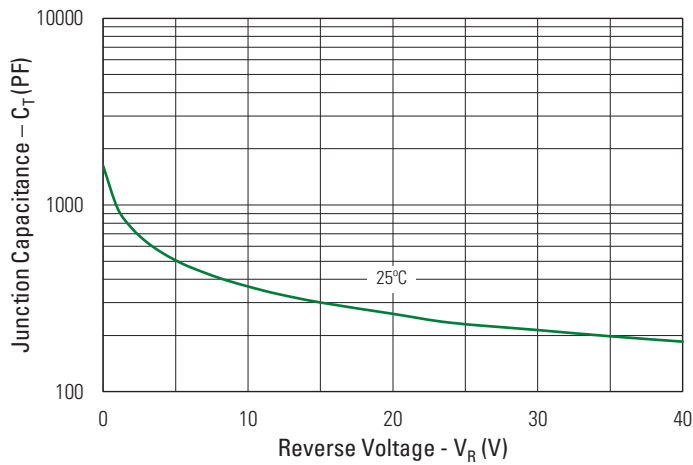
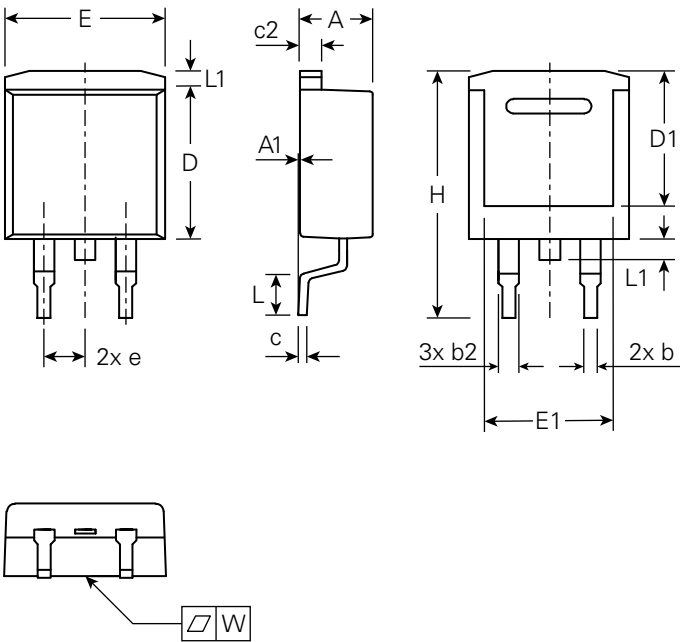


Fig. 3. Typical Junction Capacitance

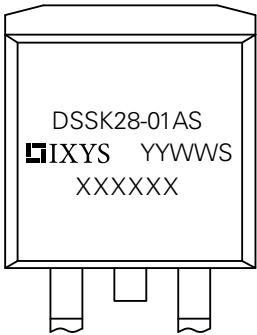


Part Outline Drawing (TO-263AB)



| Symbol | Inches    |         |       | Millimeters |         |       |
|--------|-----------|---------|-------|-------------|---------|-------|
|        | Min.      | Typical | Max.  | Min.        | Typical | Max.  |
| A      | 0.16      | –       | 0.19  | 4.06        | –       | 4.83  |
| A1     | 0.004     |         |       | 0.10        |         |       |
| b      | 0.020     | –       | 0.039 | 0.51        | –       | 0.99  |
| b2     | 0.045     | –       | 0.055 | 1.14        | –       | 1.40  |
| c      | 0.016     | –       | 0.029 | 0.40        | –       | 0.74  |
| c2     | 0.045     | –       | 0.055 | 1.14        | –       | 1.40  |
| D      | 0.330     | –       | 0.370 | 8.38        | –       | 9.40  |
| D1     | 0.315     | –       | 0.350 | 8.00        | –       | 8.89  |
| E      | 0.380     | –       | 0.410 | 9.65        | –       | 10.41 |
| E1     | 0.245     | –       | 0.320 | 6.22        | –       | 8.13  |
| e      | 0.100 BSC |         |       | 2.54 BSC    |         |       |
| H      | 0.575     | –       | 0.625 | 14.61       | –       | 15.88 |
| L      | 0.070     | –       | 0.110 | 1.78        | –       | 2.79  |
| L1     | 0.040     | –       | 0.066 | 1.02        | –       | 1.68  |
| W      | –         | 0.0008  | 0.002 | –           | 0.02    | 0.04  |

Part Number and Marking

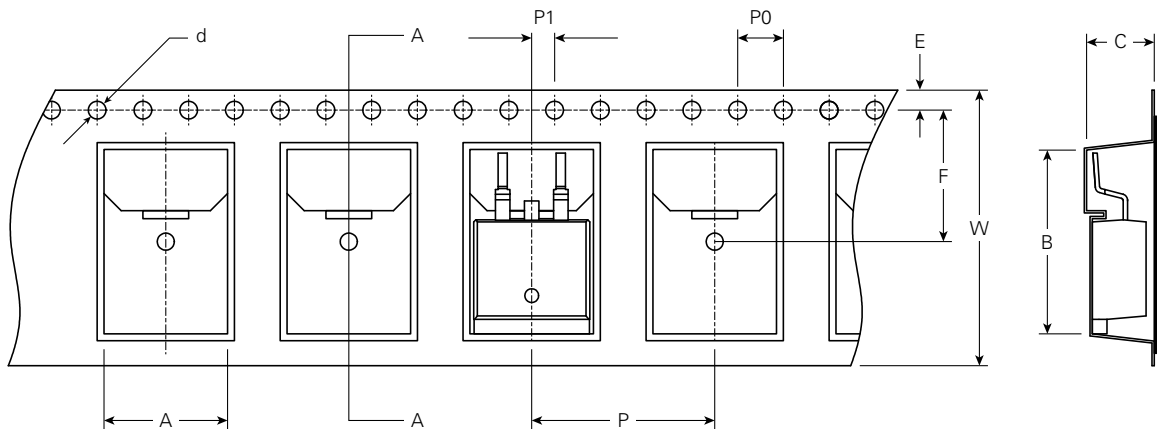


- DS = Schottky Diode
- SK = Product Generation
- 28 = Current Rate
- 01 = Voltage Rating
- AS = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXX = Lot Number

Ordering Information

| Part Number | Marking     | Packing Mode   | M.O.Q |
|-------------|-------------|----------------|-------|
| DSSK28-01AS | DSSK28-01AS | Reel (800 pcs) | -     |

Carrier Tape Specification (TO-263AB)



| Symbol | Inches |         |       | Millimeters |         |       |
|--------|--------|---------|-------|-------------|---------|-------|
|        | Min.   | Typical | Max.  | Min.        | Typical | Max.  |
| A      | 0.421  | –       | 0.429 | 10.70       | –       | 10.90 |
| B      | 0.631  | –       | 0.639 | 16.03       | –       | 16.23 |
| C      | 0.201  | –       | 0.209 | 5.11        | –       | 5.31  |
| d      | 0.057  | –       | 0.065 | 1.45        | –       | 1.65  |
| E      | 0.065  | –       | 0.07  | 1.65        | –       | 1.85  |
| F      | 0.449  | –       | 0.457 | 11.40       | –       | 11.60 |
| P0     | 0.153  | –       | 0.161 | 3.90        | –       | 4.10  |
| P      | 0.626  | –       | 0.664 | 15.90       | –       | 16.10 |
| P1     | 0.075  | –       | 0.082 | 1.90        | –       | 2.10  |
| W      | 0.941  | –       | 0.957 | 23.90       | –       | 24.30 |

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Part of:

