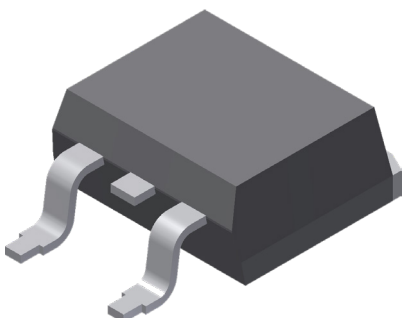


**DSSK28-0045BS**

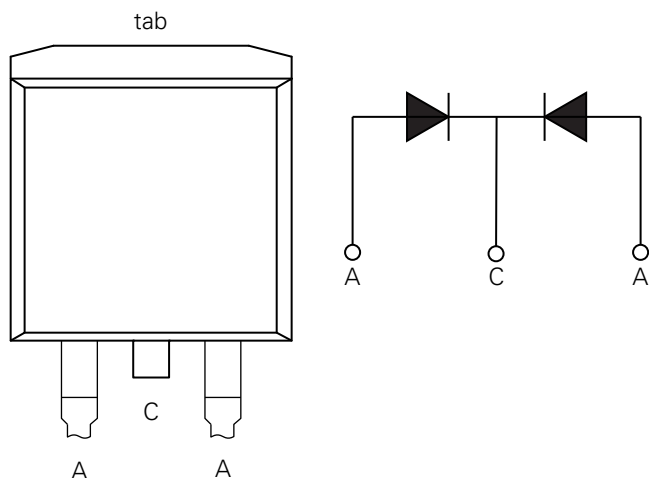
45 V, 28 A Schottky Rectifier Diode

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-263AB)**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 |
|----------------|--------|------|
| $V_{RRM}$      | 45     | V    |
| $I_{FAV}$      | 2 x 15 | A    |
| $V_F$          | 0.43   | V    |

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

| Symbol    | Characteristics                                       | Condition                                                             | Max.                            | Units |
|-----------|-------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------|-------|
| $V_{RRM}$ | Peak Repetitive Reverse Voltage                       | –                                                                     | 45                              | V     |
| $V_{RWM}$ | Working Peak Reverse Voltage                          |                                                                       |                                 |       |
| $V_R$     | DC Blocking Voltage                                   |                                                                       |                                 |       |
| $I_{FAV}$ | Average Rectified Forward Current                     | 50% duty cycle @ $T_C = 135^\circ\text{C}$ ,<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, $T_{VJ} = 25^\circ\text{C}$                   | 300                             | A     |
| $P_{tot}$ | Total Power Dissipation                               | $T_C = 25^\circ\text{C}$                                              | 90                              | 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> | @ 15 A, Pulse, $T_{VJ} = 25^\circ\text{C}$                                  | –    | 0.48 | V     |
| $V_{F1}$ |                                             | @ 15 A, Pulse, $T_{VJ} = 125^\circ\text{C}$                                 | –    | 0.43 | V     |
| $I_{R1}$ | Reverse Current (Per Leg)*                  | @ $V_R = \text{rated } V_R$ , $T_{VJ} = 25^\circ\text{C}$                   | –    | 20   | mA    |
| $I_{R2}$ |                                             | @ $V_R = \text{rated } V_R$ , $T_{VJ} = 100^\circ\text{C}$                  | –    | 100  | mA    |
| $C_T$    | Junction Capacitance (Per Leg)              | @ $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$<br>$f_{SIG} = 1\text{ MHz}$ | 967  | –    | pF    |

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

| Symbol     | Characteristics                              | Condition    | Specification    | Units            |
|------------|----------------------------------------------|--------------|------------------|------------------|
| $T_{VJ}$   | Junction Temperature                         | –            | -55 to +150      | $^\circ\text{C}$ |
| $T_O$      | Operation Temperature                        | –            | -55 to +125      | $^\circ\text{C}$ |
| $T_{stg}$  | 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             | K/W              |
| $R_{thCS}$ | Typical Thermal Resistance Case to Heat Sink | –            | 0.25             | K/W              |
| wt         | Approximate Weight                           | –            | 1.85             | g                |

Characteristic Curves

Fig. 1. Typical Forward Characteristics

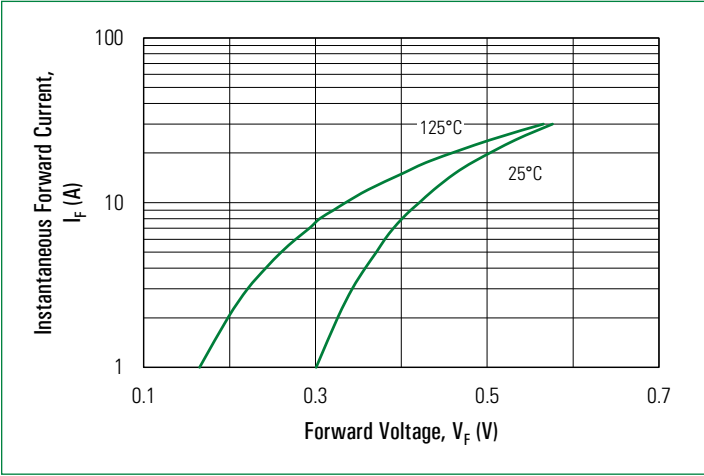


Fig. 2. Typical Reverse Characteristics

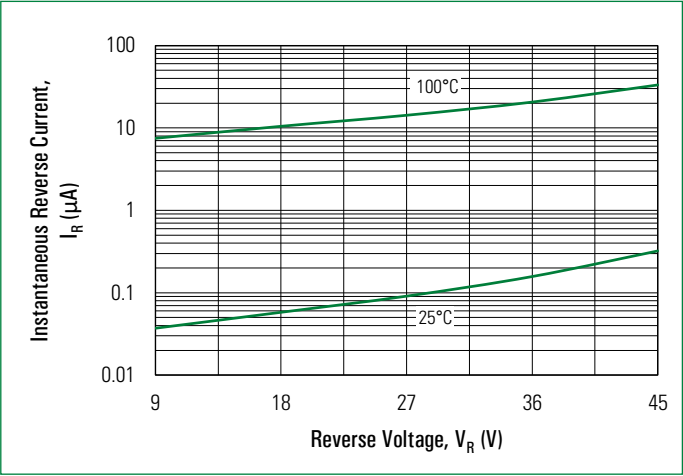
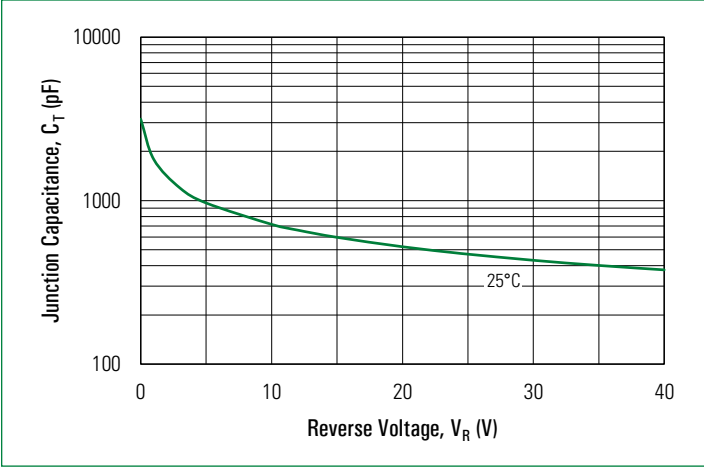
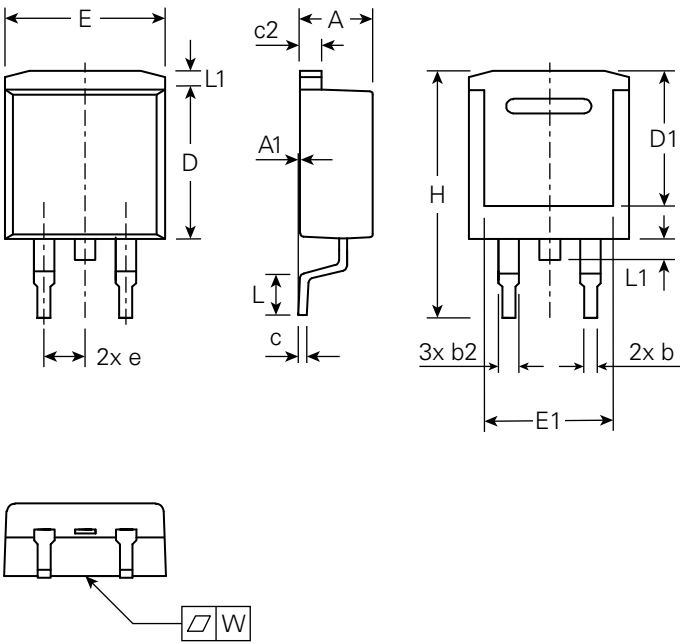


Fig. 3. Typical Junction Capacitance

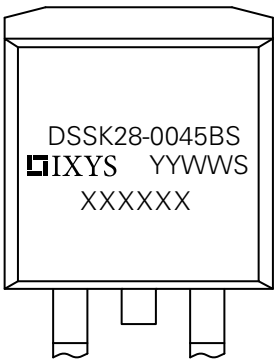


Part Outline Drawing (TO-263AB)



| Symbol | Inches    |         |       | Millimeters |         |       |
|--------|-----------|---------|-------|-------------|---------|-------|
|        | Min.      | Typical | Max.  | Min.        | Typical | Max.  |
| A      | 0.16      | –       | 0.19  | 4.06        | –       | 4.83  |
| A1     | 0         | –       | 0.010 | 0           | –       | 0.26  |
| b      | 0.020     | –       | 0.039 | 0.51        | –       | 0.99  |
| b1     | 0.045     | –       | 0.070 | 1.14        | –       | 1.78  |
| c      | 0.012     | –       | 0.029 | 0.31        | –       | 0.74  |
| c1     | 0.045     | –       | 0.064 | 1.14        | –       | 1.65  |
| D      | 0.330     | –       | 0.379 | 8.38        | –       | 9.65  |
| D1     | 0.251     | –       | –     | 6.40        | –       | –     |
| E1     | 0.244     | –       | –     | 6.22        | –       | –     |
| E2     | 0.379     | –       | 0.420 | 9.65        | –       | 10.67 |
| e      | 0.100 BSC |         |       | 2.54 BSC    |         |       |
| H      | 0.575     | –       | 0.625 | 14.61       | –       | 15.88 |
| L      | 0.070     | –       | 0.110 | 1.78        | –       | 2.80  |
| L1     | –         | –       | 0.066 | –           | –       | 1.68  |
| L2     | –         | –       | 0.086 | –           | –       | 2.20  |
| L3     | 0.010 BSC |         |       | 0.255 BSC   |         |       |

Part Number and Marking

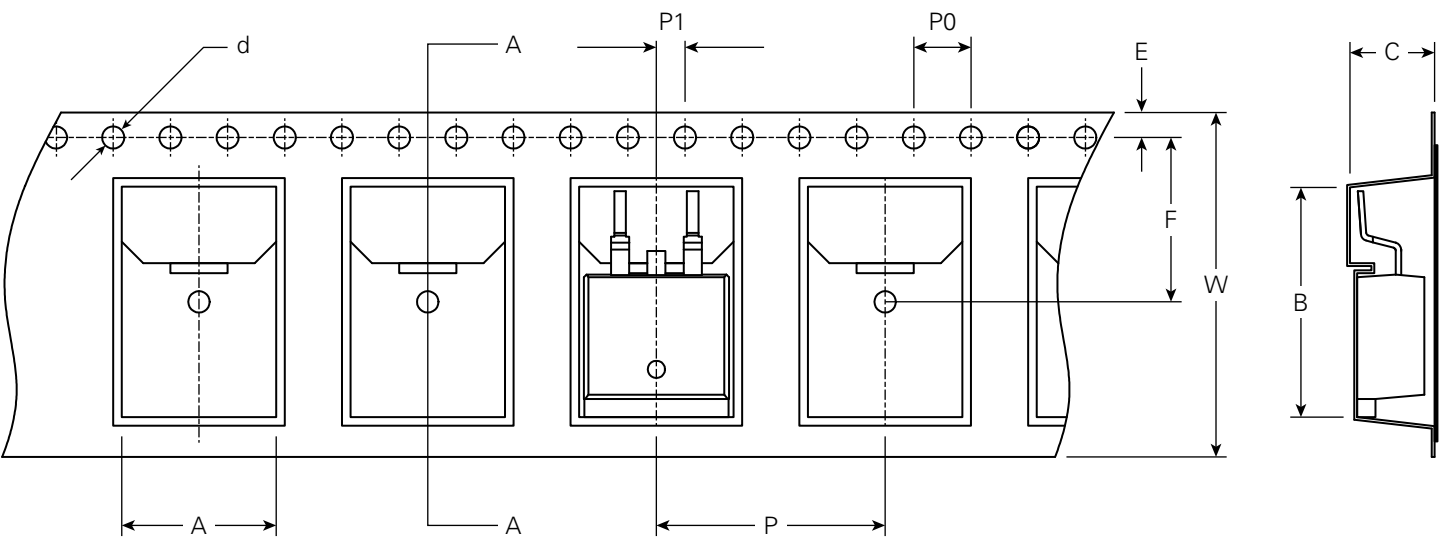


- D = Diode
- S = Schottky Diode
- SK = Product Generation
- 28 = Current Rate
- 0045 = Voltage Rating
- BS = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXX = Lot Number

Ordering Information

| Part Number       | Marking       | Packing Mode | Quantity      |
|-------------------|---------------|--------------|---------------|
| DSSK28-0045BS-TRL | DSSK28-0045BS | Reel         | 800 pcs/ reel |

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:

