

preliminary

Schottky Diode

$$V_{RRM} = 25\text{ V}$$

$$I_{FAV} = 2 \times 10\text{ A}$$

$$V_F = 0.37\text{ V}$$

High Performance Schottky Diode
 Low Loss and Soft Recovery
 Common Cathode

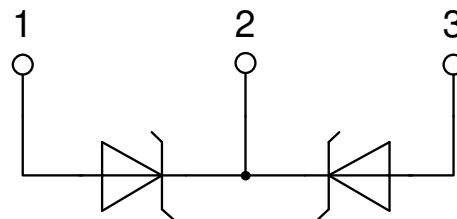
Part number

DSSK18-0025BS

Marking on Product: DSSK18-0025BS



Backside: cathode



Features / Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:

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

Package: TO-263 (D2Pak)

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

Disclaimer Notice

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| Schottky | | | | Ratings | | | |
|------------|--|--|------------------------------|-----------------------------|------|------|------|
| Symbol | Definition | Conditions | | min. | typ. | max. | Unit |
| V_{RSM} | max. non-repetitive reverse blocking voltage | | | | | 25 | V |
| V_{RRM} | max. repetitive reverse blocking voltage | | | | | 25 | V |
| I_R | reverse current, drain current | $V_R = 25\text{ V}$ | $T_{VJ} = 25^\circ\text{C}$ | | | 10 | mA |
| | | $V_R = 25\text{ V}$ | $T_{VJ} = 100^\circ\text{C}$ | | | 40 | mA |
| V_F | forward voltage drop | $I_F = 10\text{ A}$ | $T_{VJ} = 25^\circ\text{C}$ | | | 0.45 | V |
| | | $I_F = 20\text{ A}$ | | | | 0.56 | V |
| | | $I_F = 10\text{ A}$ | $T_{VJ} = 125^\circ\text{C}$ | | | 0.37 | V |
| | | $I_F = 20\text{ A}$ | | | | 0.51 | V |
| I_{FAV} | average forward current | $T_C = 140^\circ\text{C}$ rectangular $d = 0.5$ | $T_{VJ} = 150^\circ\text{C}$ | | | 10 | A |
| V_{F0} | threshold voltage | } for power loss calculation only | | | | 0.20 | V |
| r_F | slope resistance | | | | | 14.6 | mΩ |
| R_{thJC} | thermal resistance junction to case | | | | | 1.7 | K/W |
| R_{thCH} | thermal resistance case to heatsink | | | | 0.25 | | K/W |
| P_{tot} | total power dissipation | | | $T_C = 25^\circ\text{C}$ | | 75 | W |
| I_{FSM} | max. forward surge current | $t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$ | | $T_{VJ} = 45^\circ\text{C}$ | | 140 | A |
| C_J | junction capacitance | $V_R = 5\text{ V}$ $f = 1\text{ MHz}$ | | $T_{VJ} = 25^\circ\text{C}$ | | 639 | pF |



preliminary

| Package TO-263 (D2Pak) | | | Ratings | | | |
|------------------------|------------------------------|--------------|---------|------|------|------|
| Symbol | Definition | Conditions | min. | typ. | max. | Unit |
| I_{RMS} | RMS current | per terminal | | | 35 | A |
| T_{VJ} | virtual junction temperature | | -55 | | 150 | °C |
| T_{op} | operation temperature | | -55 | | 125 | °C |
| T_{stg} | storage temperature | | -55 | | 150 | °C |
| Weight | | | | 1.5 | | g |
| F_C | mounting force with clip | | 20 | | 60 | N |

Product Marking



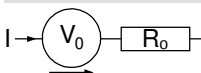
| Ordering | Ordering Number | Marking on Product | Delivery Mode | Quantity | Code No. |
|-------------|-------------------|--------------------|---------------|----------|----------|
| Standard | DSSK18-0025BS-TRL | DSSK18-0025BS | Tape & Reel | 800 | 499099 |
| Alternative | DSSK18-0025BS-TUB | DSSK18-0025BS | Tube | 50 | 523741 |

| Similar Part | Package | Voltage class |
|--------------|--------------|---------------|
| DSB30C30PB | TO-220AB (3) | 30 |

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 150^{\circ}C$

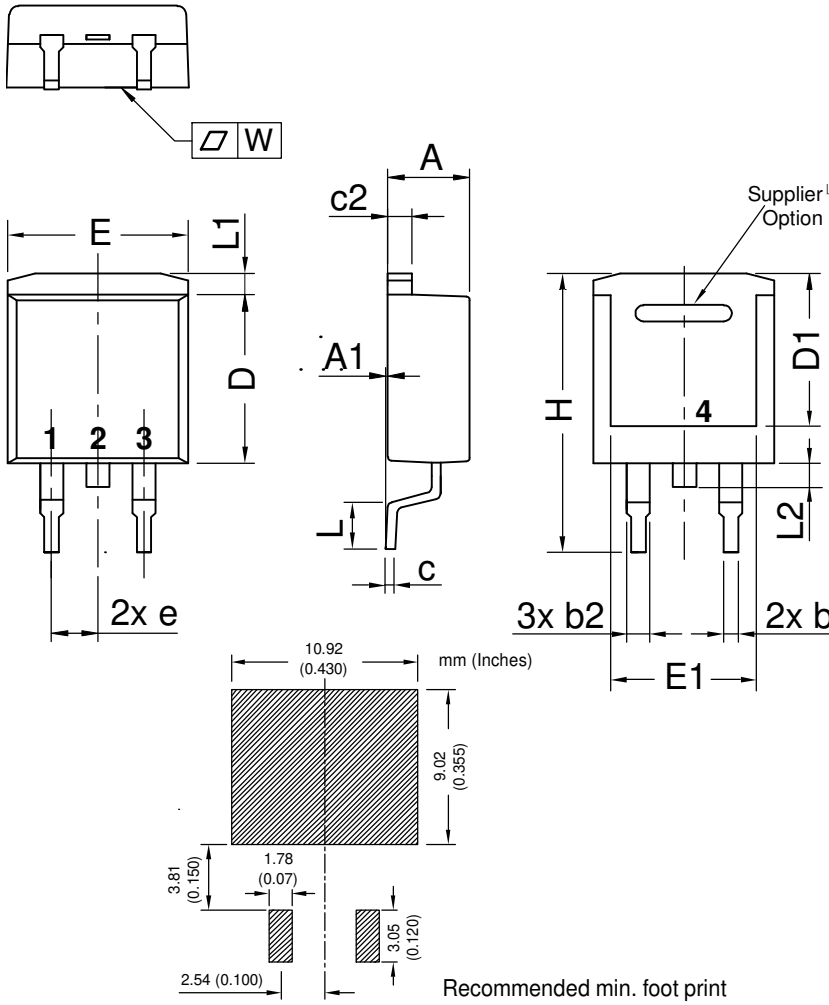


Schottky

| | | | |
|--------------|--------------------|------|----|
| $V_{0\ max}$ | threshold voltage | 0.2 | V |
| $R_{0\ max}$ | slope resistance * | 11.4 | mΩ |



Outlines TO-263 (D2Pak)



| Dim. | Millimeter | | Inches | |
|------|------------|-------|-------------|-------|
| | min | max | min | max |
| A | 4.06 | 4.83 | 0.160 | 0.190 |
| A1 | typ. 0.10 | | typ. 0.004 | |
| A2 | 2.41 | | 0.095 | |
| b | 0.51 | 0.99 | 0.020 | 0.039 |
| b2 | 1.14 | 1.40 | 0.045 | 0.055 |
| c | 0.40 | 0.74 | 0.016 | 0.029 |
| c2 | 1.14 | 1.40 | 0.045 | 0.055 |
| D | 8.38 | 9.40 | 0.330 | 0.370 |
| D1 | 8.00 | 8.89 | 0.315 | 0.350 |
| D2 | 2.5 | | 0.098 | |
| E | 9.65 | 10.41 | 0.380 | 0.410 |
| E1 | 6.22 | 8.50 | 0.245 | 0.335 |
| e | 2.54 BSC | | 0.100 BSC | |
| e1 | 4.28 | | 0.169 | |
| H | 14.61 | 15.88 | 0.575 | 0.625 |
| L | 1.78 | 2.79 | 0.070 | 0.110 |
| L1 | 1.02 | 1.68 | 0.040 | 0.066 |
| W | typ. 0.02 | 0.040 | typ. 0.0008 | 0.002 |

All dimensions conform with and/or within JEDEC standard.

