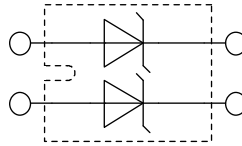


Schottky Diode

High Performance Schottky Diode
Low Loss and Soft Recovery
Parallel legs

Part number

DSS2x121-0045B



Backside: isolated

E72873

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

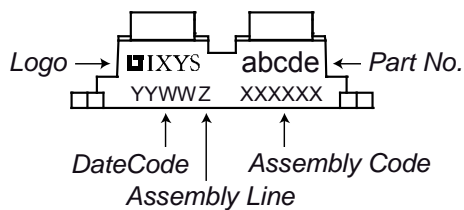
Package:

- Housing: SOT-227B (minibloc)
- Industry standard outline
- Cu base plate internal DCB isolated
- Isolation Voltage 3000 V
- Epoxy meets UL 94V-0
- RoHS compliant

| Symbol | Definition | Conditions | Ratings | | | Unit |
|------------|--|--------------------------------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| V_{RRM} | <i>max. repetitive reverse voltage</i> | | | | 45 | V |
| I_R | <i>reverse current</i> | $V_R = 45\text{ V}$ | | | 120 | mA |
| | | $V_R = 45\text{ V}$ | | | 500 | mA |
| V_F | <i>forward voltage</i> | $I_F = 120\text{ A}$ | | | 0.62 | V |
| | | $I_F = 240\text{ A}$ | | | 0.89 | V |
| | | $I_F = 120\text{ A}$ | | | 0.59 | V |
| | | $I_F = 240\text{ A}$ | | | 0.90 | V |
| I_{FAV} | <i>average forward current</i> | rectangular $d = 0.5$ | | | 120 | A |
| V_{F0} | <i>threshold voltage</i> | | | | 0.27 | V |
| r_F | <i>slope resistance</i> | | | | | |
| R_{thJC} | <i>thermal resistance junction to case</i> | | | | 0.40 | K/W |
| T_{VJ} | <i>virtual junction temperature</i> | | -40 | | 150 | °C |
| P_{tot} | <i>total power dissipation</i> | | | | 310 | W |
| I_{FSM} | <i>max. forward surge current</i> | $t = 10\text{ ms}$ (50 Hz), sine | | | 1600 | A |
| C_J | <i>junction capacitance</i> | $V_R = 5\text{ V}; f = 1\text{ MHz}$ | | 5.86 | | nF |

| Symbol | Definition | Conditions | Ratings | | | Unit |
|---------------|---|----------------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| I_{RMS} | RMS current | per terminal | | | 150 | A |
| R_{thCH} | thermal resistance case to heatsink | | | 0.10 | | K/W |
| T_{stg} | storage temperature | | -40 | | 150 | °C |
| Weight | | | | 30 | | g |
| M_D | mounting torque | | 1.1 | | 1.5 | Nm |
| M_T | terminal torque | | 1.1 | | 1.5 | Nm |
| V_{ISOL} | isolation voltage | t = 1 second | 3000 | | | V |
| | | t = 1 minute | 2500 | | | V |
| $d_{Spp/App}$ | creepage striking distance on surface through air | terminal to terminal | 10.5 | 3.2 | | mm |
| $d_{Spb/Apb}$ | creepage striking distance on surface through air | terminal to backside | 8.6 | 6.8 | | mm |

Product Marking



| Ordering | Part Name | Marking on Product | Delivering Mode | Base Qty | Code Key |
|----------|----------------|--------------------|-----------------|----------|----------|
| Standard | DSS2x121-0045B | DSS2x121-0045B | Tube | 10 | 478334 |

Outlines SOT-227B (minibloc)


| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | min | max | min | max |
| A | 31.50 | 31.88 | 1.240 | 1.255 |
| B | 7.80 | 8.20 | 0.307 | 0.323 |
| C | 4.09 | 4.29 | 0.161 | 0.169 |
| D | 4.09 | 4.29 | 0.161 | 0.169 |
| E | 4.09 | 4.29 | 0.161 | 0.169 |
| F | 14.91 | 15.11 | 0.587 | 0.595 |
| G | 30.12 | 30.30 | 1.186 | 1.193 |
| H | 37.80 | 38.23 | 1.488 | 1.505 |
| J | 11.68 | 12.22 | 0.460 | 0.481 |
| K | 8.92 | 9.60 | 0.351 | 0.378 |
| L | 0.74 | 0.84 | 0.029 | 0.033 |
| M | 12.50 | 13.10 | 0.492 | 0.516 |
| N | 25.15 | 25.42 | 0.990 | 1.001 |
| O | 1.95 | 2.13 | 0.077 | 0.084 |
| P | 4.95 | 6.20 | 0.195 | 0.244 |
| Q | 26.54 | 26.90 | 1.045 | 1.059 |
| R | 3.94 | 4.42 | 0.155 | 0.167 |
| S | 4.55 | 4.85 | 0.179 | 0.191 |
| T | 24.59 | 25.25 | 0.968 | 0.994 |
| U | -0.05 | 0.10 | -0.002 | 0.004 |
| V | 3.20 | 5.50 | 0.126 | 0.217 |
| W | 19.81 | 21.08 | 0.780 | 0.830 |
| Z | 2.50 | 2.70 | 0.098 | 0.106 |

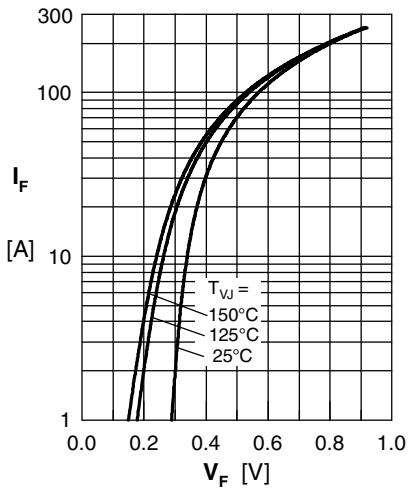


Fig. 1 Maximum forward voltage drop characteristics

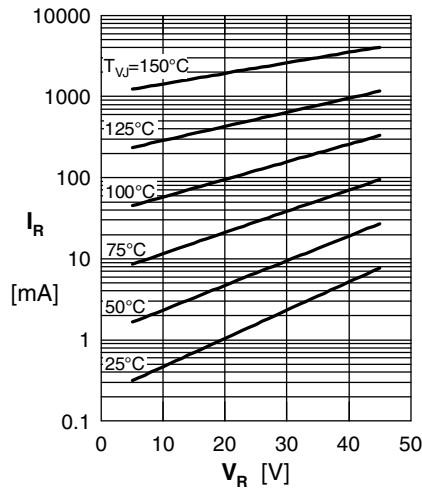


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

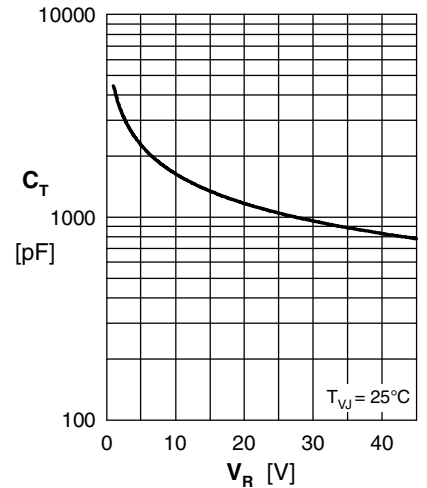


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

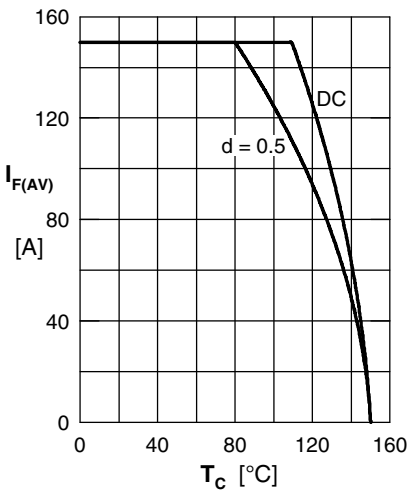


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

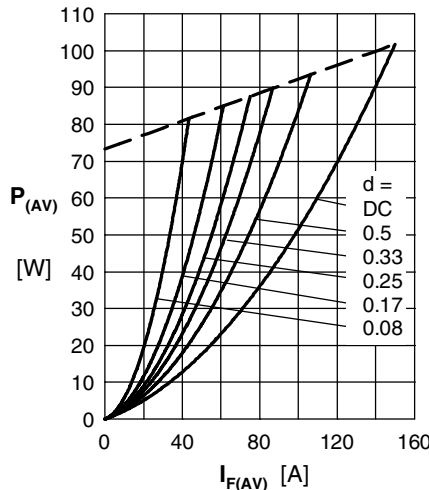


Fig. 5 Forward power loss characteristics

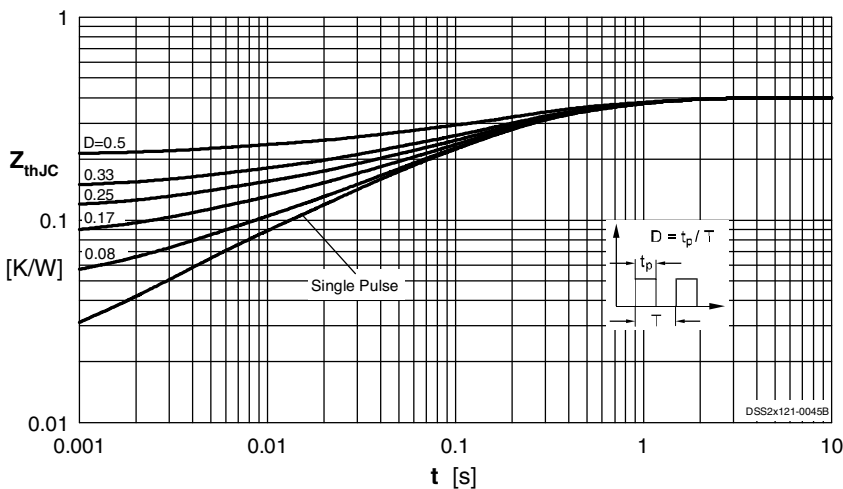


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

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