



preliminary

Schottky Diode Gen²

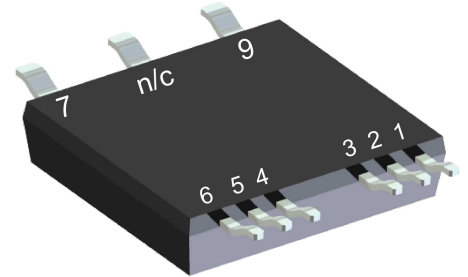
| | | |
|-----------|------|--------|
| V_{RRM} | = | 200 V |
| I_{FAV} | = 2x | 65 A |
| V_F | = | 0.82 V |

High Performance Schottky Diode
Low Loss and Soft Recovery
Parallel legs

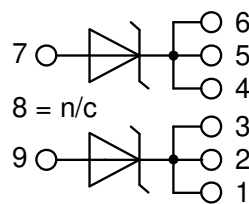
Part number

DSA120X200LB

Marking on Product: *DSA120X200LB*



Backside: isolated



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: SMPD

- Isolation Voltage: 3000 V~
- Industry convenient outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

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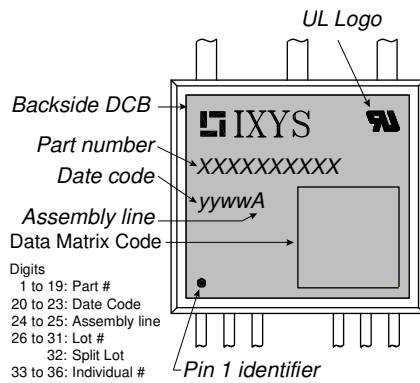


| Schottky | | | | Ratings | | | |
|------------|--|--|--------------------|------------------------------|------|------|------|
| Symbol | Definition | Conditions | | min. | typ. | max. | Unit |
| V_{RSM} | max. non-repetitive reverse blocking voltage | | | | | 200 | V |
| V_{RRM} | max. repetitive reverse blocking voltage | | | | | 200 | V |
| I_R | reverse current, drain current | $V_R = 200\text{ V}$ | | $T_{VJ} = 25^\circ\text{C}$ | | 1 | mA |
| | | $V_R = 200\text{ V}$ | | $T_{VJ} = 125^\circ\text{C}$ | | 5 | mA |
| V_F | forward voltage drop | $I_F = 60\text{ A}$ | | $T_{VJ} = 25^\circ\text{C}$ | | 0.98 | V |
| | | $I_F = 120\text{ A}$ | | | | 1.22 | V |
| | | $I_F = 60\text{ A}$ | | $T_{VJ} = 150^\circ\text{C}$ | | 0.82 | V |
| | | $I_F = 120\text{ A}$ | | | | 1.10 | V |
| I_{FAV} | average forward current | $T_C = 130^\circ\text{C}$ | rectangular | $T_{VJ} = 175^\circ\text{C}$ | | 65 | A |
| V_{F0} | threshold voltage | } for power loss calculation only | | $T_{VJ} = 175^\circ\text{C}$ | | 0.51 | V |
| r_F | slope resistance | | | | | 2.7 | mΩ |
| R_{thJC} | thermal resistance junction to case | | | | | 0.8 | K/W |
| R_{thCH} | thermal resistance case to heatsink | | | | 0.40 | | K/W |
| P_{tot} | total power dissipation | | | $T_C = 25^\circ\text{C}$ | | 185 | W |
| I_{FSM} | max. forward surge current | $t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$ | | $T_{VJ} = 45^\circ\text{C}$ | | 700 | A |
| C_J | junction capacitance | $V_R = 24\text{ V}$ | $f = 1\text{ MHz}$ | $T_{VJ} = 25^\circ\text{C}$ | | 394 | pF |



preliminary

| Package SMPD | | Ratings | | | | |
|----------------|--|----------------------|------|------|------|------|
| Symbol | Definition | Conditions | min. | typ. | max. | Unit |
| I_{RMS} | RMS current | per terminal | | | 100 | A |
| T_{VJ} | virtual junction temperature | | -55 | | 175 | °C |
| T_{op} | operation temperature | | -55 | | 150 | °C |
| T_{stg} | storage temperature | | -55 | | 150 | °C |
| Weight | | | | 8.5 | | g |
| F_C | mounting force with clip | | 40 | | 130 | N |
| $d_{Spp/ App}$ | creepage distance on surface striking distance through air | terminal to terminal | 1.6 | | | mm |
| $d_{Spb/ Apb}$ | | terminal to backside | 4.0 | | | mm |
| V_{ISOL} | isolation voltage | t = 1 second | 3000 | | | V |
| | | t = 1 minute | 2500 | | | V |



Part description

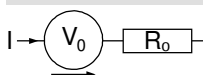
- D = Diode
- S = Schottky Diode
- A = low VF
- 120 = Current Rating [A]
- X = Parallel legs
- 200 = Reverse Voltage [V]
- LB = SMPD-B

| Ordering | Ordering Number | Marking on Product | Delivery Mode | Quantity | Code No. |
|-------------|------------------|--------------------|---------------|----------|----------|
| Standard | DSA120X200LB-TUB | DSA120X200LB | Tube | 20 | 524773 |
| Alternative | DSA120X200LB-TRR | DSA120X200LB | Tape & Reel | 200 | 523115 |

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 175\text{ °C}$



Schottky

| | | | |
|--------------|--------------------|------|----|
| $V_{0\ max}$ | threshold voltage | 0.51 | V |
| $R_{0\ max}$ | slope resistance * | 2.7 | mΩ |

