

Silicon Carbide (SiC)
Schottky Diode – EliteSiC,
 10 A, 1700 V, D1, TO-247-2L

NDSH10170A

Description

Silicon Carbide (SiC) Schottky Diodes use a completely new technology that provides superior switching performance and higher reliability compared to Silicon. No reverse recovery current, temperature independent switching characteristics, and excellent thermal performance sets Silicon Carbide as the next generation of power semiconductor. System benefits include highest efficiency, faster operating frequency, increased power density, reduced EMI, and reduced system size and cost.

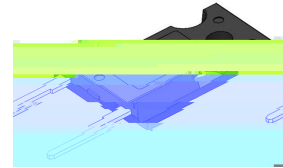
Features

- Max Junction Temperature 175 C
- Avalanche Rated 156 mJ
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery / No Forward Recovery
- These Devices are Halogen Free/BFR Free and are RoHS Compliant

Applications

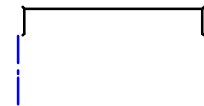
- SMPS, Solar Inverter, UPS
- Power Switching Circuits

Schottky Diode



TO-247-2LD
 CASE 340DA

MARKING DIAGRAM



- | | |
|------------|---------------------------|
| NDSH10170A | = Specific Device Code |
| A | = Assembly Plant Code |
| YWW | = Date Code (Year & Week) |
| ZZ | = Lot Code |

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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ABSOLUTE MAXIMUM RATINGS (T_J = 25 C unless otherwise noted)

| Symbol | Parameter | Value | Unit | |
|-----------------------------------|---|--|------|---|
| V _{RRM} | Peak Repetitive Reverse Voltage | 1700 | V | |
| E _{AS} | Single Pulse Avalanche Energy (Note 1) | 156 | mJ | |
| I _F | Continuous Rectified Forward Current @ T _C < 157 C | 10 | A | |
| | Continuous Rectified Forward Current @ T _C < 135 C | 16 | | |
| I _{F, Max} | Non-Repetitive Peak Forward Surge Current | T _C = 25 C, 10 μs | 868 | A |
| | | T _C = 150 C, 10 μs | 798 | A |
| I _{F, SM} | Non-Repetitive Forward Surge Current | Half-Sine Pulse, t _p = 8.3 ms | 105 | A |
| I _{F, RM} | Repetitive Forward Surge Current | Half-Sine Pulse, t _p = 8.3 ms | 25 | A |
| P _{tot} | Power Dissipation | T _C = 25 C | 185 | W |
| | | T _C = 150 C | 31 | W |
| T _J , T _{STG} | Operating and Storage Temperature Range | -55 to +175 | C | |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. E_{AS}

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TYPICAL CHARACTERISTICS ($T_J = 25\text{ C}$ UNLESS OTHERWISE NOTED)

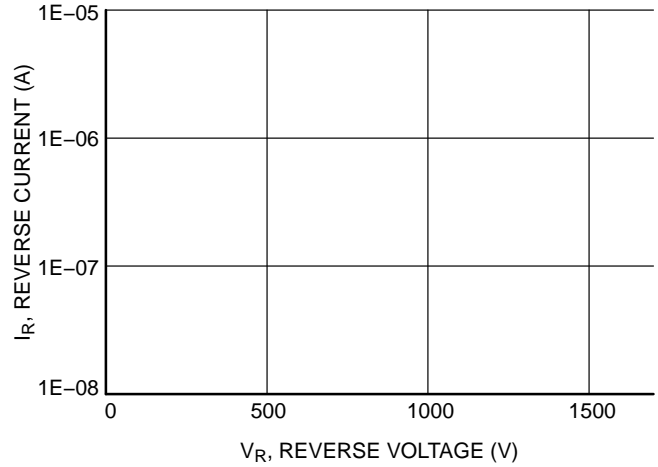


Figure 2. Reverse Characteristics

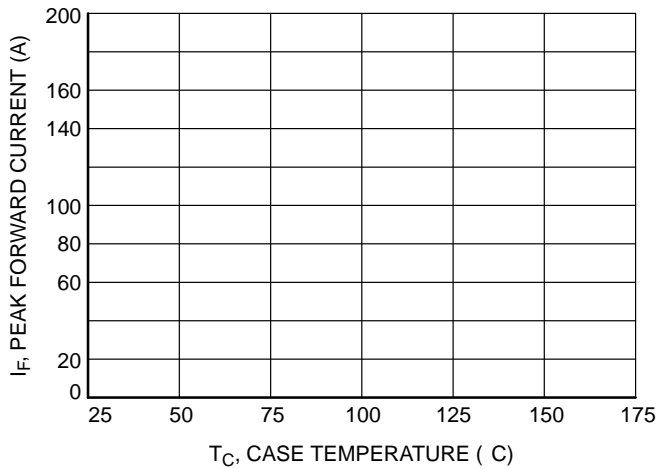


Figure 1. Forward Characteristics

Figure 3. Current Derating

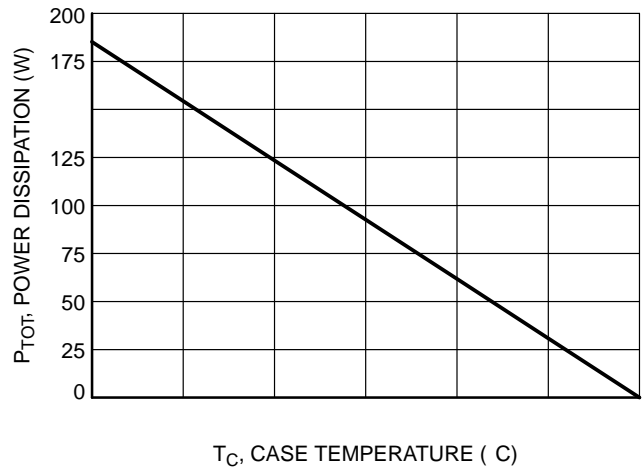


Figure 4. Power Derating

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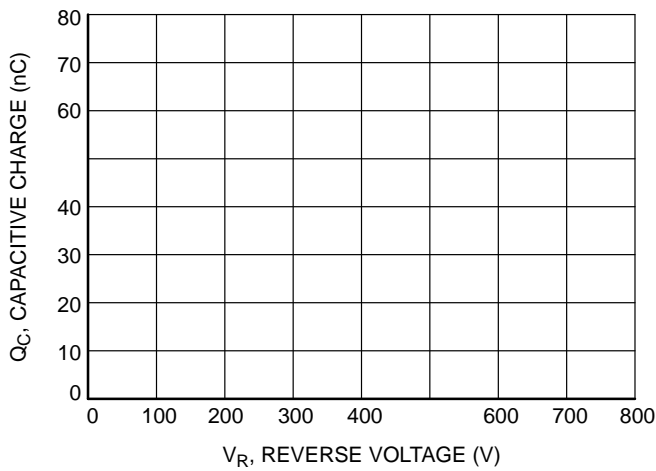


Figure 5. Capacitive Charge vs. Reverse Voltage

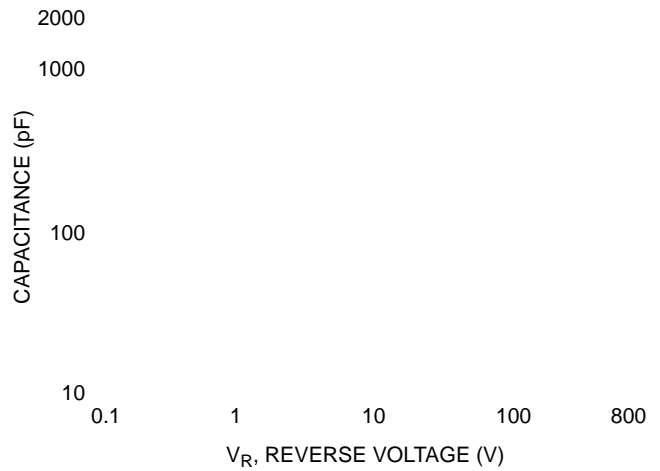


Figure 6. Capacitive vs. Reverse Voltage

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TYPICAL CHARACTERISTICS ($T_J = 25$

**TO-247-2LD
CASE 340DA
ISSUE A**

DATE 27 FEB 2019

**GENERIC
MARKING DIAGRAM***

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