# SiC10A065ND

## SILICON CARBIDE SCHOTTKY DIODE

| Voltage | 650 V | Current | 10 A |
|---|---|---|---|

### Features

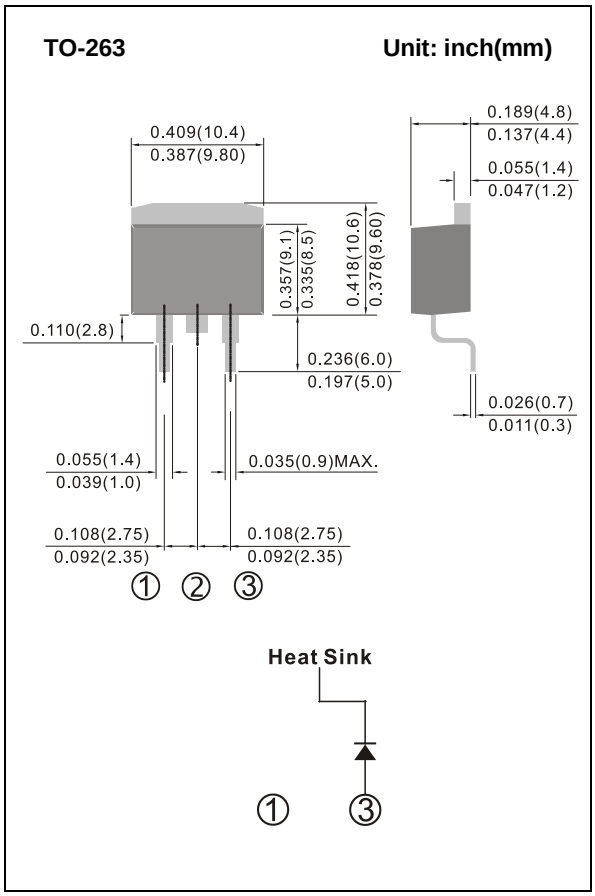
- Temperature Independent Switching Behavior
- Low Conduction and Switching Loss
- High Surge Current Capability
- Positive Temperature Coefficient on $V_F$
- Fast Reverse Recovery

### Mechanical Data

- Case: Molded plastic, TO-263
- Marking: 10A065ND

### Benefits

- High Frequency Operation
- Higher System Efficiency
- Environmental Protection
- Parallel Device Convenience
- Hard Switching & High Reliability
- High Temperature Application




### Maximum Ratings

| PARAMETER | SYMBOL | TEST CONDITIONS | VALUE | UNITS |
|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | $T_J$=25°C | 650 | V |
| Maximum RMS Voltage | $V_{RSM}$ | $T_J$=25°C | 650 | V |
| Maximum DC Blocking Voltage | $V_R$ | $T_J$=25°C | 650 | V |
| Continuous Forward Current | $I_{F(AV)}$ | $T_C$=25°C | 25 | A |
| | | $T_C$=125°C | 14 | A |
| | | $T_C$=150°C | 10 | A |
| Repetitive Peak Forward Surge Current ($T_P$=10mS, Half Sine Wave, D=0.1) | $I_{FRM}$ | $T_C$=25°C | 59 | A |
| | | $T_C$=125°C | 50 | A |

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## Maximum Ratings

| PARAMETER | SYMBOL | TEST CONDITIONS | VALUE | UNITS |
|---|---|---|---|---|
| Non-Repetitive Peak Forward Surge Current ($T_P$=10mS, Half Sine Wave) | $I_{FSM}$ | $T_C$=25°C | 69 | A |
| | | $T_C$=125°C | 63 | A |
| Non-Repetitive Peak Forward Surge Current ($T_P$=10uS, Pulse) | | $T_C$=25°C | 400 | A |
| Power Dissipation | $P_D$ | $T_C$=25°C | 93 | W |
| | | $T_C$=125°C | 31 | W |
| Operating Junction Temperature | $T_J$ | | 175 | °C |
| Storage Temperature | $T_{STG}$ | | -55 to 175 | °C |
| Thermal Resistance Junction to Case | $R_{\theta JC}$ | | 1.6 | °C/W |

## Electrical Characteristics

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|
| DC Blacking Voltage | $V_{DC}$ | $I_R$ =100uA, $T_J$=25°C | 650 | 770 | - | V |
| Forward Voltage | $V_F$ | $I_F$ =10A, $T_J$=25°C | - | 1.5 | 1.8 | V |
| | | $I_F$ =10A, $T_J$=175°C | - | 1.9 | 2.2 | V |
| Reverse Current | $I_R$ | $V_R$ =650V, $T_J$=25°C | - | 5 | 70 | uA |
| | | $V_R$ =650V, $T_J$=175°C | - | 20 | 190 | uA |
| Total Capacitive Charge | $Q_C$ | $I_F$ =10A, di/dt=300A/uS, $V_R$ =400V, $T_J$=25°C | - | 18 | - | nC |
| Total Capacitance | C | $V_R$ =1V, $T_J$=25°C, f=1MHz | - | 398 | - | pF |
| | | $V_R$ =200V, $T_J$=25°C, f=1MHz | - | 55 | - | pF |
| | | $V_R$ =400V, $T_J$=25°C, f=1MHz | - | 54 | - | pF |

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## TYPICAL CHARACTERISTIC CURVES

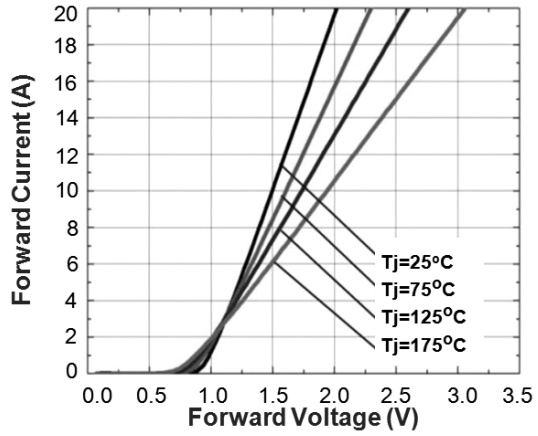



Fig.1 Forward Characteristics

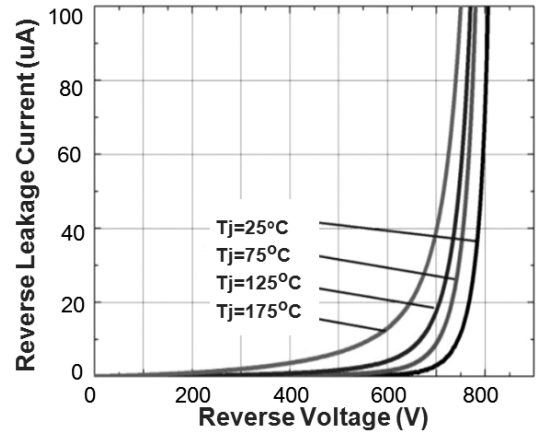



Fig.2 Reverse Characteristics

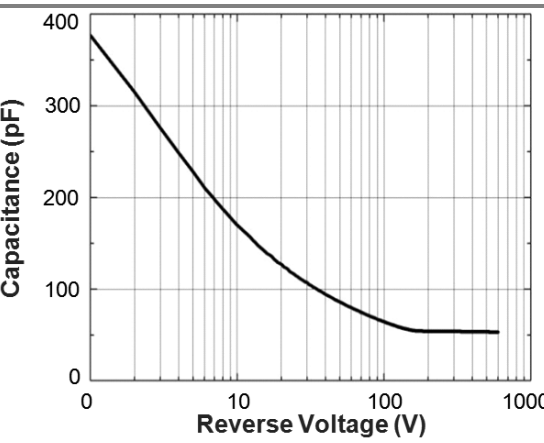



Fig.3 Capacitance vs. Reverse Voltage

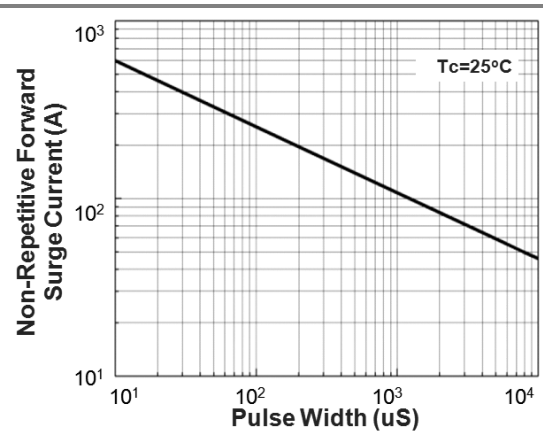



Fig.4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

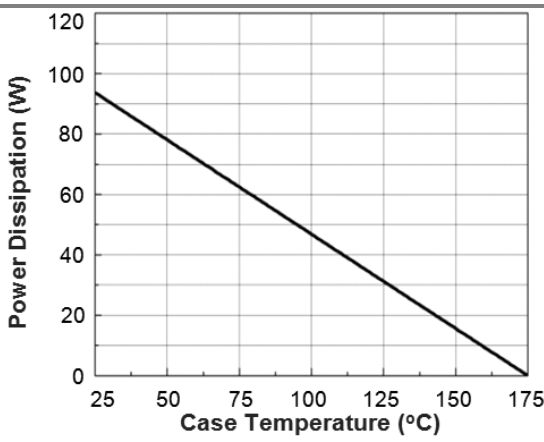



Fig.5 Power Derating

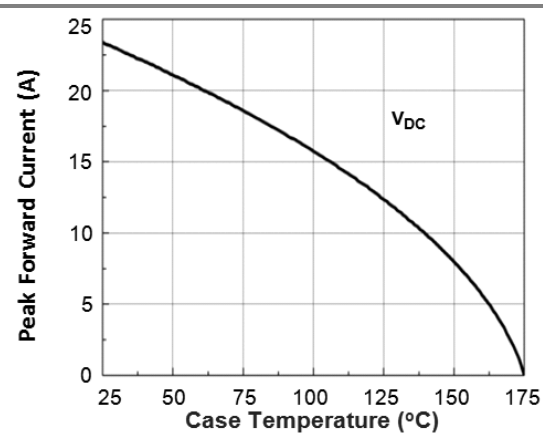


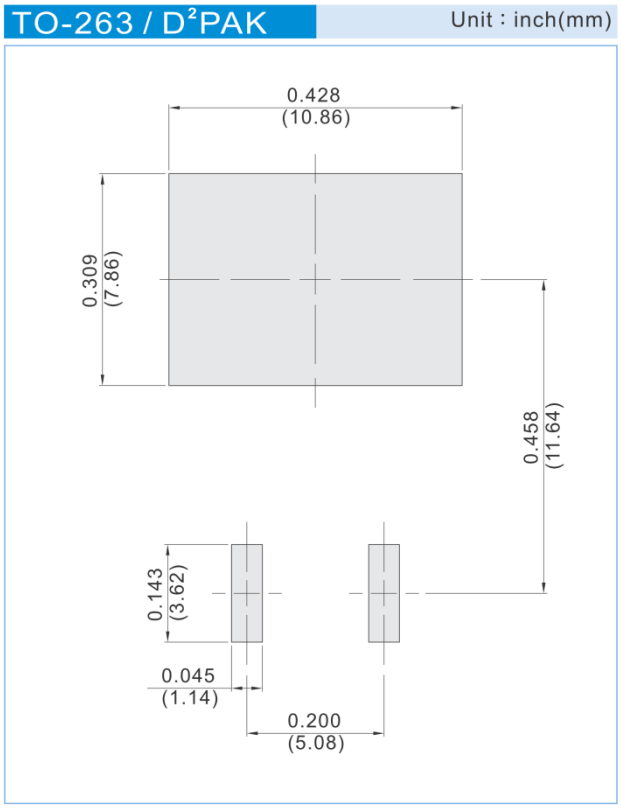

Fig.6 Current Derating

# SiC10A065ND

## Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|---|---|---|---|---|
| SIC10A065ND_R2_00001 | TO-263 | 800pcs / 13” reel | 10A065ND | Halogen free |

## Mounting Pad Layout



# SiC10A065ND

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