# SiC06A065T

## SILICON CARBIDE SCHOTTKY DIODE

| Voltage | 650 V | Current | 6 A |
|---|---|---|---|

### Features

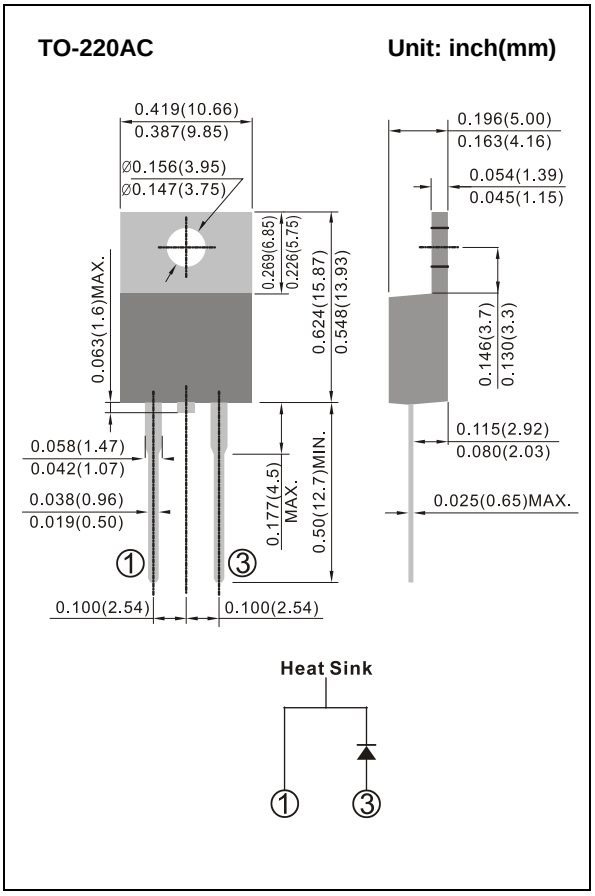
- Temperature Independent Switching Behavior
- Low Conduction and Switching Loss
- High Surge Current Capability
- Positive Temperature Coefficient on $V_F$
- Fast Reverse Recovery

### Mechanical Data

- Case: Molded plastic, TO-220AC
- Marking: 06A065T

### 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 | 18 | A |
| | | $T_C$=125°C | 8 | A |
| | | $T_C$=150°C | 6 | A |
| Repetitive Peak Forward Surge Current ($T_P$=10mS, Half Sine Wave, D=0.1) | $I_{FRM}$ | $T_C$=25°C | 42 | A |
| | | $T_C$=125°C | 37 | 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 | 50 | A |
| | | $T_C$=125°C | 44 | A |
| Non-Repetitive Peak Forward Surge Current ($T_P$=10uS, Pulse) | | $T_C$=25°C | 210 | A |
| Power Dissipation | $P_D$ | $T_C$=25°C | 88 | W |
| | | $T_C$=125°C | 29 | W |
| Operating Junction Temperature | $T_J$ | | 175 | °C |
| Storage Temperature | $T_{STG}$ | | -55 to 175 | °C |
| Thermal Resistance Junction to Case | $R_{\theta JC}$ | | 1.7 | °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 | $V_F$ | $I_F$ =6A, $T_J$=25°C | - | 1.5 | 1.8 | V |
| | | $I_F$ =6A, $T_J$=175°C | - | 1.9 | 2.2 | V |
| Reverse Current | $I_R$ | $V_R$ =650V, $T_J$=25°C | - | 3 | 50 | uA |
| | | $V_R$ =650V, $T_J$=175°C | - | 17 | 190 | uA |
| Total Capacitive Charge | $Q_C$ | $I_F$ =6A, di/dt=300A/uS, $V_R$ =400V, $T_J$=25°C | - | 12 | - | nC |
| Total Capacitance | C | $V_R$ =1V, $T_J$=25°C, f=1MHz | - | 234 | - | pF |
| | | $V_R$ =200V, $T_J$=25°C, f=1MHz | - | 36 | - | pF |
| | | $V_R$ =400V, $T_J$=25°C, f=1MHz | - | 36 | - | pF |

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## TYPICAL CHARACTERISTIC CURVES

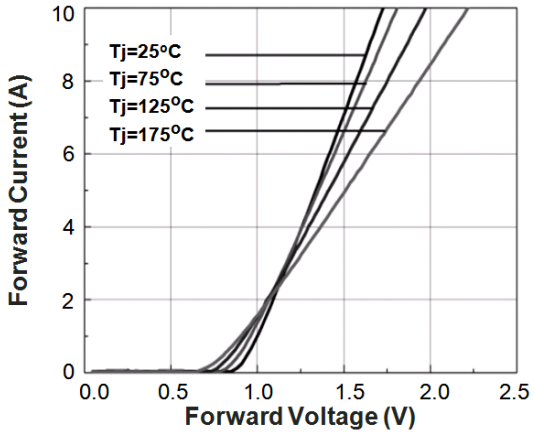


Fig.1 Forward Characteristics

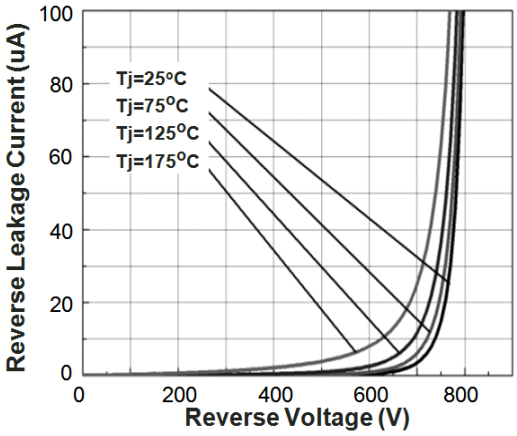


Fig.2 Reverse Characteristics

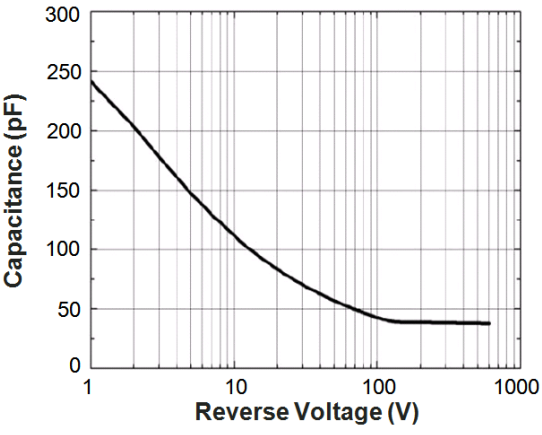


Fig.3 Capacitance vs. Reverse Voltage

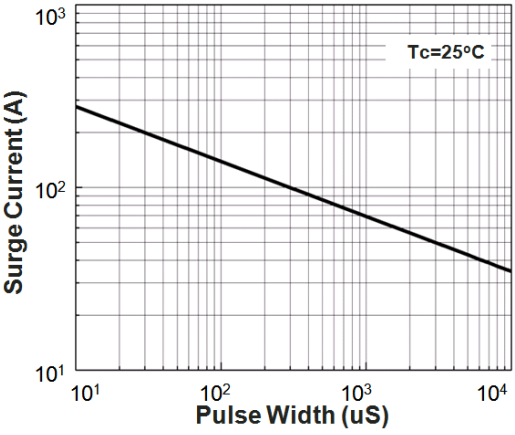


Fig.4 Non-Repetitive Peak Forward Surge Current
(Pulse Mode)

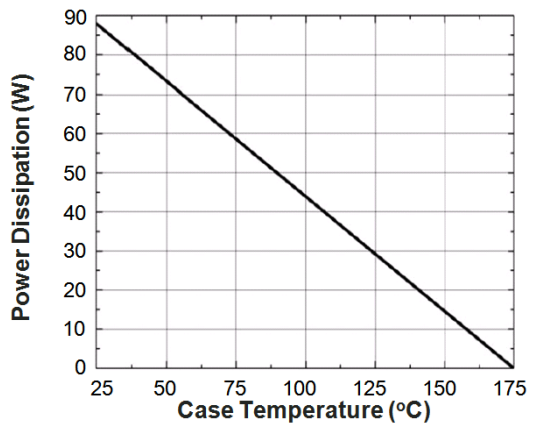


Fig.5 Power Derating

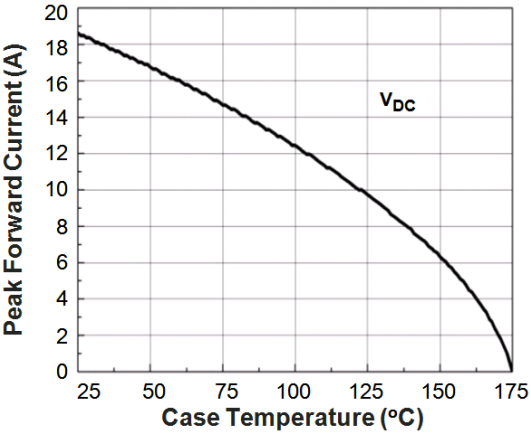


Fig.6 Current Derating

# SiC06A065T

## Part No Packing Code Version

| Part No Packing Code | Package Type | Packing type | Marking | Version |
|---|---|---|---|---|
| SIC06A065T_T0_00001 | TO-220AC | 50pcs / Tube | 06A065T | Halogen free |

# SiC06A065T

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