

# FDCY18S120

## SiC Schottky Barrier Diode

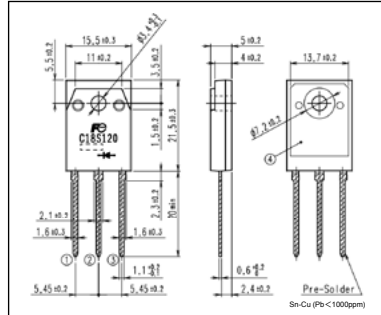
### Features

- Ultra Low IR
- Low  $V_F$
- $T_J$  MAX = 175°C
- High reliability at higher temperatures

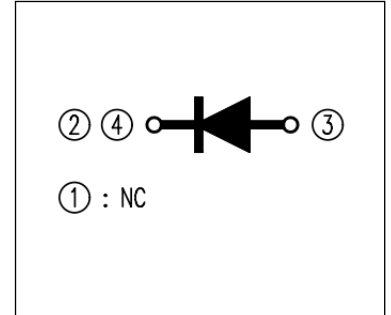
### Applications

- High frequency operation
- DC-DC converters
- AC adapter

### Outline Drawings [mm]



### Connection diagram



### Maximum Ratings and Characteristics

#### Maximum ratings (at $T_a=25^\circ\text{C}$ Unless otherwise specified)

| Item                                 | Symbols   | Conditions                   | Ratings     | Units            |
|--------------------------------------|-----------|------------------------------|-------------|------------------|
| Repetitive peak reverse voltage      | $V_{RRM}$ |                              | 1200        | V                |
| Continuous forward current           | $I_F$     | $D=1, T_c<117^\circ\text{C}$ | 18          | A                |
| Non-repetitive forward surge current | $I_{FSM}$ | Sine wave, 10ms 1shot        | 90          | A                |
| Operating junction temperature       | $T_J$     |                              | 175         | $^\circ\text{C}$ |
| Storage temperature                  | $T_{stg}$ |                              | -55 to +150 | $^\circ\text{C}$ |

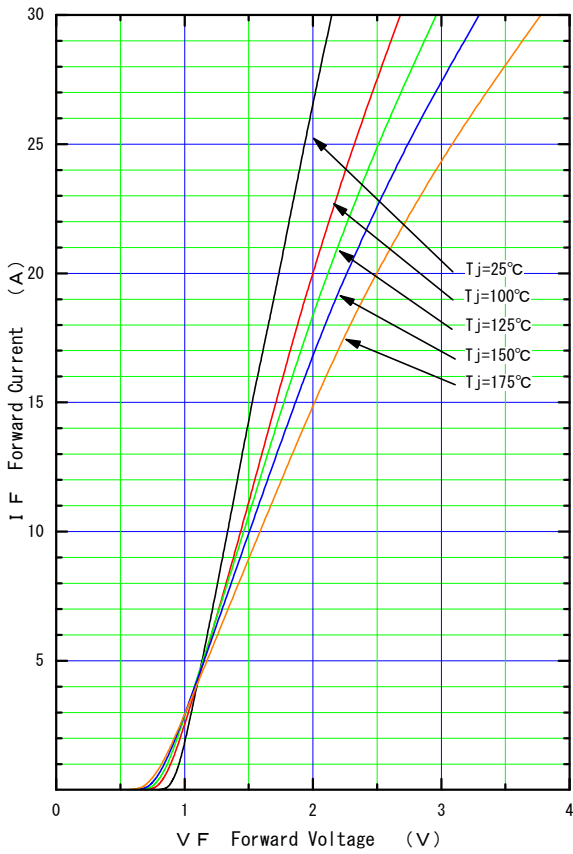
#### Electrical characteristics (at $T_a=25^\circ\text{C}$ Unless otherwise specified)

| Item                    | Symbols       | Conditions                                                                             | Min. | Max. | Units                     |
|-------------------------|---------------|----------------------------------------------------------------------------------------|------|------|---------------------------|
| Forward voltage         | $V_F$         | $I_F = 18\text{A}$                                                                     | 1.10 | 1.80 | V                         |
| Reverse current         | $I_R$         | $V_R = V_{RRM}$                                                                        | -    | 10   | $\mu\text{A}$             |
| Total Capacitive Charge | $Q_C$         | $V_R=160\text{V}, I_F=18\text{A}, di/dt=100\text{A}/\mu\text{s}, T_J=25^\circ\text{C}$ | 42   | 51   | nC                        |
| Switching time          | $T_C$         |                                                                                        | 50   | 55   | ns                        |
| Total Capacitance       | C             | $V_R=0\text{V}, T_J=25^\circ\text{C}, f=1\text{MHz}$                                   | 1330 | 1490 | pF                        |
|                         |               | $V_R=400\text{V}, T_J=25^\circ\text{C}, f=1\text{MHz}$                                 | 100  | 115  |                           |
|                         |               | $V_R=1200\text{V}, T_J=25^\circ\text{C}, f=1\text{MHz}$                                | 75   | 85   |                           |
| Thermal resistance      | $R_{th(j-c)}$ | Junction to case                                                                       | -    | 1.3  | $^\circ\text{C}/\text{W}$ |

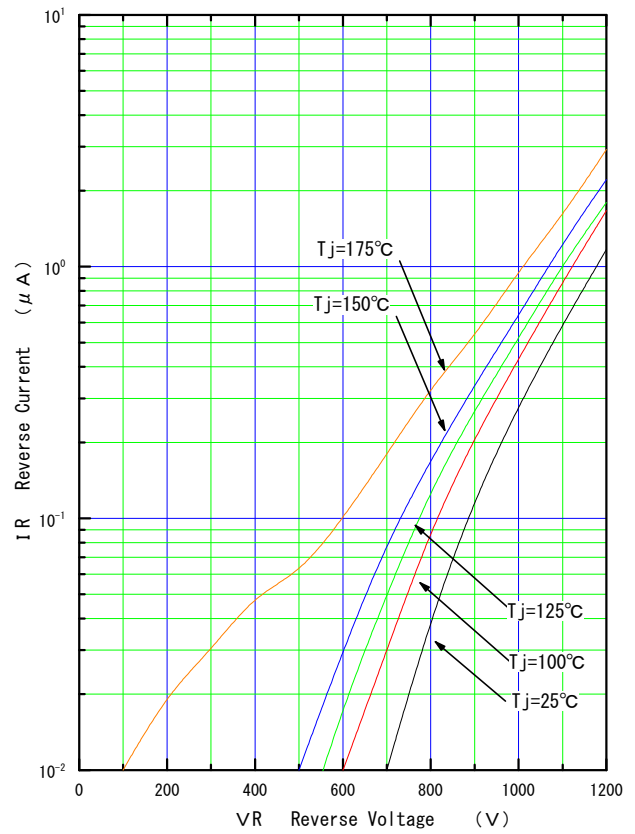
#### Mechanical characteristics

| Item             | Conditions         | Ratings    | Units |
|------------------|--------------------|------------|-------|
| Mounting torque  | Recommended torque | 0.4 to 0.6 | N·m   |
| Approximate mass |                    | 2.0        | g     |

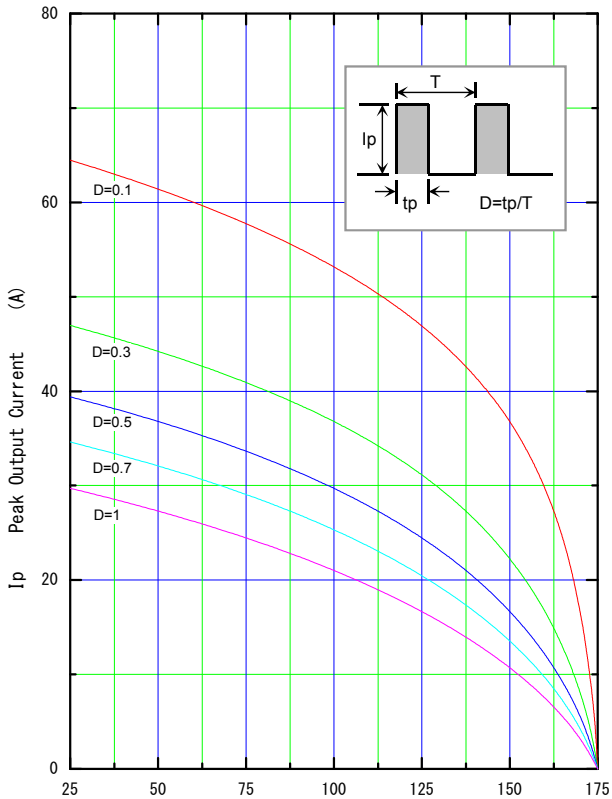
Forward Characteristic (typ.)



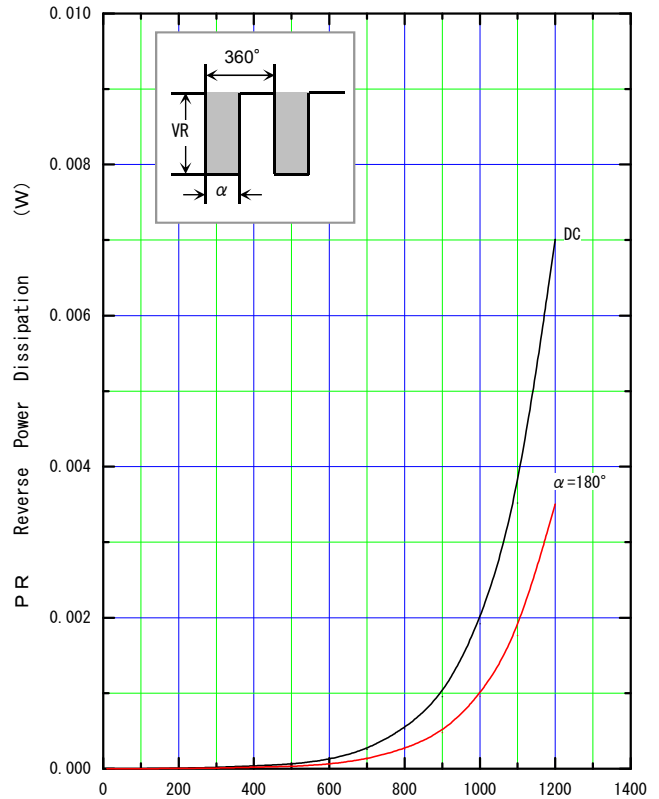
Reverse Characteristic (typ.)

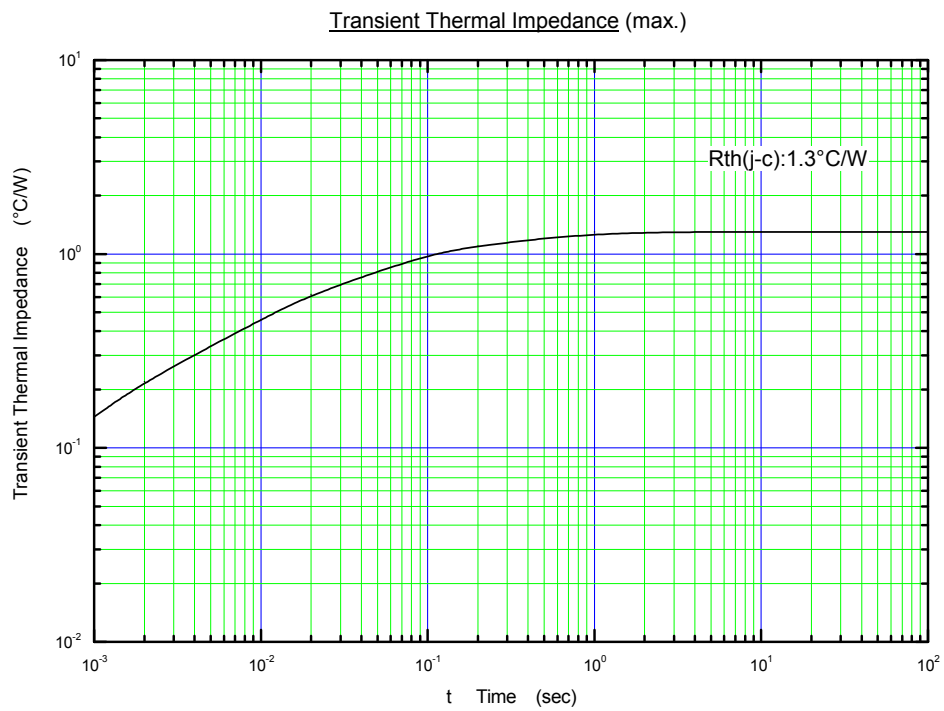
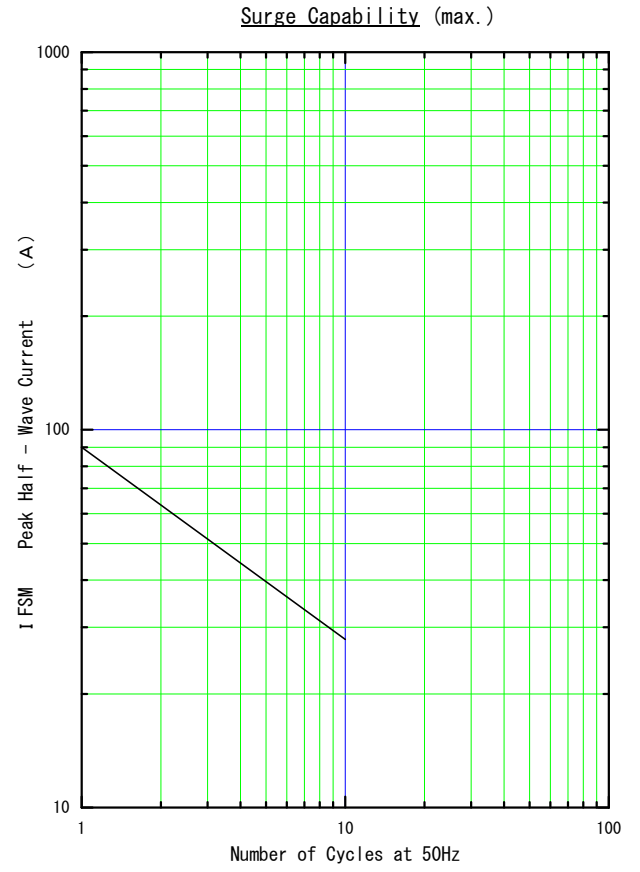
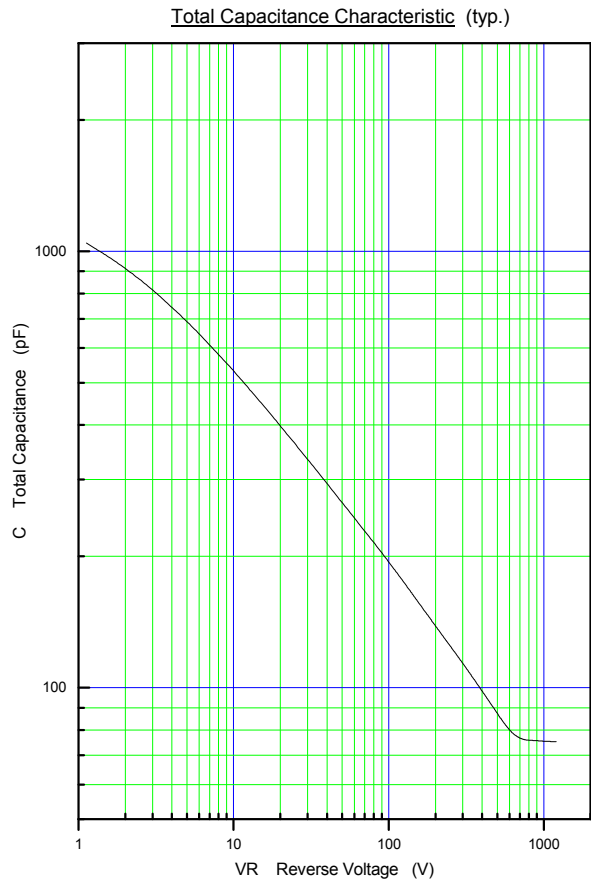


Current Derating (Ip-Tc) (max.)



Reverse Power Dissipation (max.)





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