

# HCO120S40D1

## SiC Silicon Carbide Schottky Diode

1200V, 40A

### Description

The 1200V SiC is an advanced Power Master Semiconductor's silicon carbide diode family. This technology combines the benefits of excellent low forward voltage and robustness. Consequently, the SiC family is suitable for application requiring high power efficiency.

### Applications

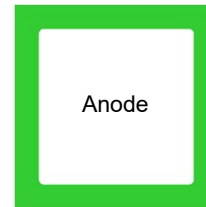
- Solar inverter, UPS
- EV charging station
- Power Factor Correction

### Features

| $V_{RRM}$ | $I_F$ | $T_{J,max}$ | $Q_C$  |
|-----------|-------|-------------|--------|
| 1200 V    | 40 A  | 175 °C      | 241 nC |

- No reverse recovery current
- Low forward voltage
- 175°C Max junction temperature
- High surge current capability
- Switching behavior independent of temperature

### Die Configuration



\*Cathode : Bottom

### Die Mechanical Parameters

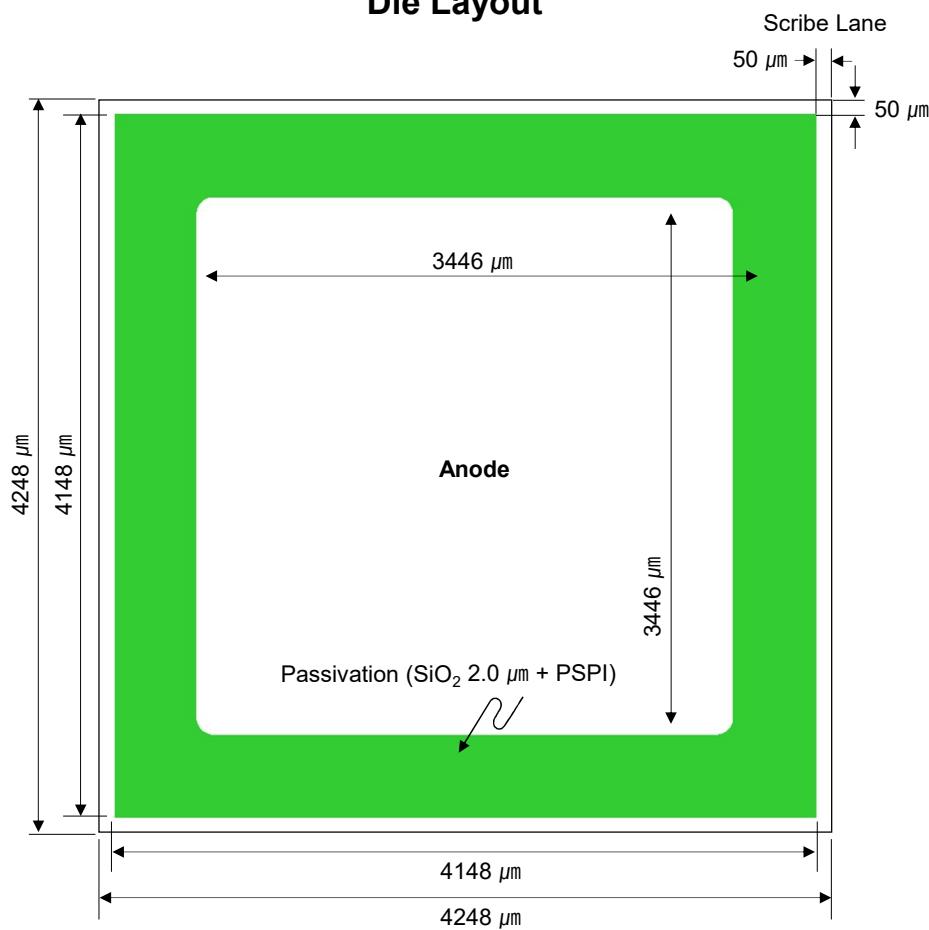
| Parameter                               | Typical Value     | Unit |
|-----------------------------------------|-------------------|------|
| Wafer Diameter                          | 6                 | inch |
| Die Dimensions (W x L x T)              | 4248 x 4248 x 200 | μm   |
| Anode Metallization (AlCu)              | 4                 | μm   |
| Bottom Cathode Metallization (Ti/Ni/Ag) | 0.5               | μm   |
| Recommended Source Bond Wire            | Al 20mils x 3     | ea   |
| Gross Die (Single chip of wafer)        | 840               | ea   |

### Electrical Characteristics ( $T_J = 25^{\circ}\text{C}$ ) (Note1)

| Symbol | Parameter       | Test Conditions                                    | Min | Typ  | Max  | Unit |
|--------|-----------------|----------------------------------------------------|-----|------|------|------|
| $V_F$  | Forward Voltage | $I_F = 40\text{ A}$ , $T_C = 25^{\circ}\text{C}$   |     | 1.39 | 1.70 | V    |
| $I_R$  | Reverse Current | $V_R = 1200\text{ V}$ , $T_C = 25^{\circ}\text{C}$ |     | -    | 100  | μA   |

1. Base on TO247 package.

Die Layout



Wafer Sawing Information

