



# Silicon Carbide PiN Diode ASCPDA00210KF

$$V_{RRM} = 10 \text{ kV}$$

$$I_F = 2 \text{ A}$$

$$V_F = 3.8 \text{ V}$$

## Features

- 10kV blocking
- 3DSiC® technology
- Lowest on-state voltage
- Epitaxial emitter

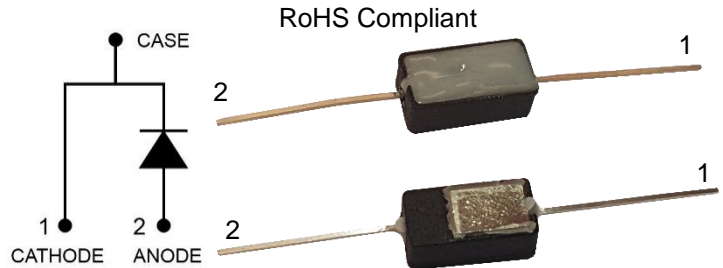
## Applications

- General purpose
- Voltage multiplier
- Electrostatic systems
- X-Ray systems

## Advantages

- Reduced stacking
- Fast switching
- Low reverse recovery
- Low losses
- Avalanche capability

## Package



## Absolute Maximum Ratings

Symbol	Parameter	Conditions	Values	Unit
$V_{RRM}$	Peak repetitive Reverse Voltage		10	kV
$I_F$	Continuous Forward Current	$T_C = 25^\circ\text{C}$ $T_C = 150^\circ\text{C}$	2	A
$I_{F,Max}$	Non-repetitive Peak Forward Current	$T_C = 25^\circ\text{C}$ , $t_p = 10\mu\text{s}$ , pulse $T_C = 150^\circ\text{C}$ , $t_p = 10\mu\text{s}$ , pulse		A
$I_{FSM}$	Non-repetitive Forward Surge Current	$T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , half sine pulse $T_C = 150^\circ\text{C}$ , $t_p = 10\text{ms}$ , half sine pulse		A
$P_{tot}$	Power Dissipation	$T_C = 25^\circ\text{C}$ $T_C = 150^\circ\text{C}$		W
$T_J$	Operating Junction Temperature Range		-55 to +175	$^\circ\text{C}$

## Electrical Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_F$	Forward Voltage	$I_F = 2 \text{ A}$ , $T_C = 25^\circ\text{C}$ $I_F = 2 \text{ A}$ , $T_C = 125^\circ\text{C}$ $I_F = 2 \text{ A}$ , $T_C = 175^\circ\text{C}$		3.8 3.6 3.45		V
$V_{BR}$	Breakdown voltage	$T_C = 25^\circ\text{C}$	11	13.5	14.5	kV
$I_R$	Reverse Current	$V_R = 10 \text{ kV}$ , $T_C = 25^\circ\text{C}$			10	nA
$Q_C$	Total Capacitive Charge	$V_R = 800 \text{ V}$ , $di/dt = 200 \text{ A}/\mu\text{s}$				nC
$t_{rr}$	Reverse recovery time	$I_F = 2 \text{ A}$ , $di/dt = 200 \text{ A}/\mu\text{s}$				ns
$C$	Total Capacitance	$V_R = 1 \text{ V}$ , $f = 200 \text{ kHz}$ $V_R = 10 \text{ V}$ , $f = 200 \text{ kHz}$ $V_R = 200 \text{ V}$ , $f = 200 \text{ kHz}$		52 29 8		pF

## Thermal Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case				$^\circ\text{C}/\text{W}$

### Typical Performance

Fig. 1. Forward Characteristics

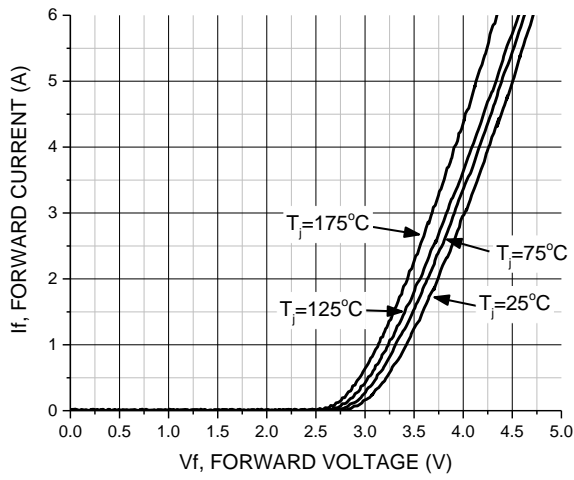


Fig. 2. Reverse Characteristics at 25°C

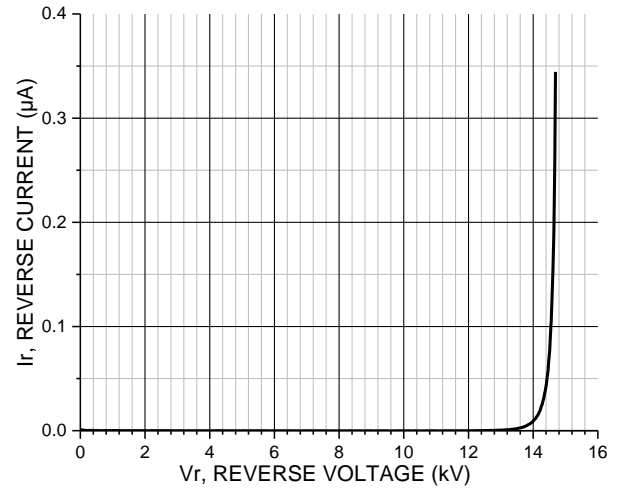
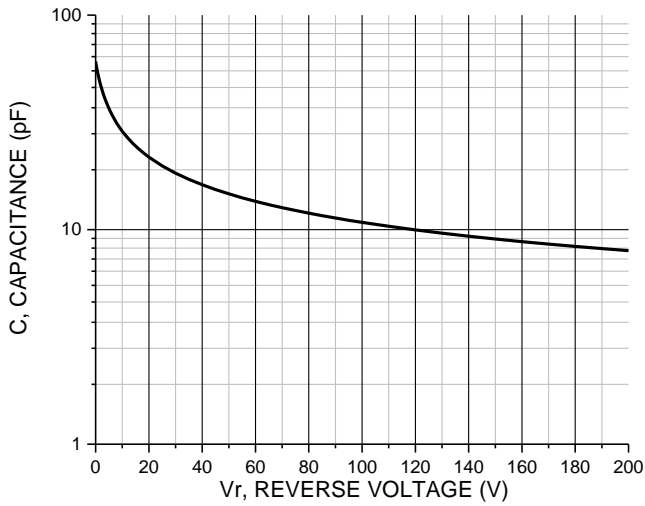
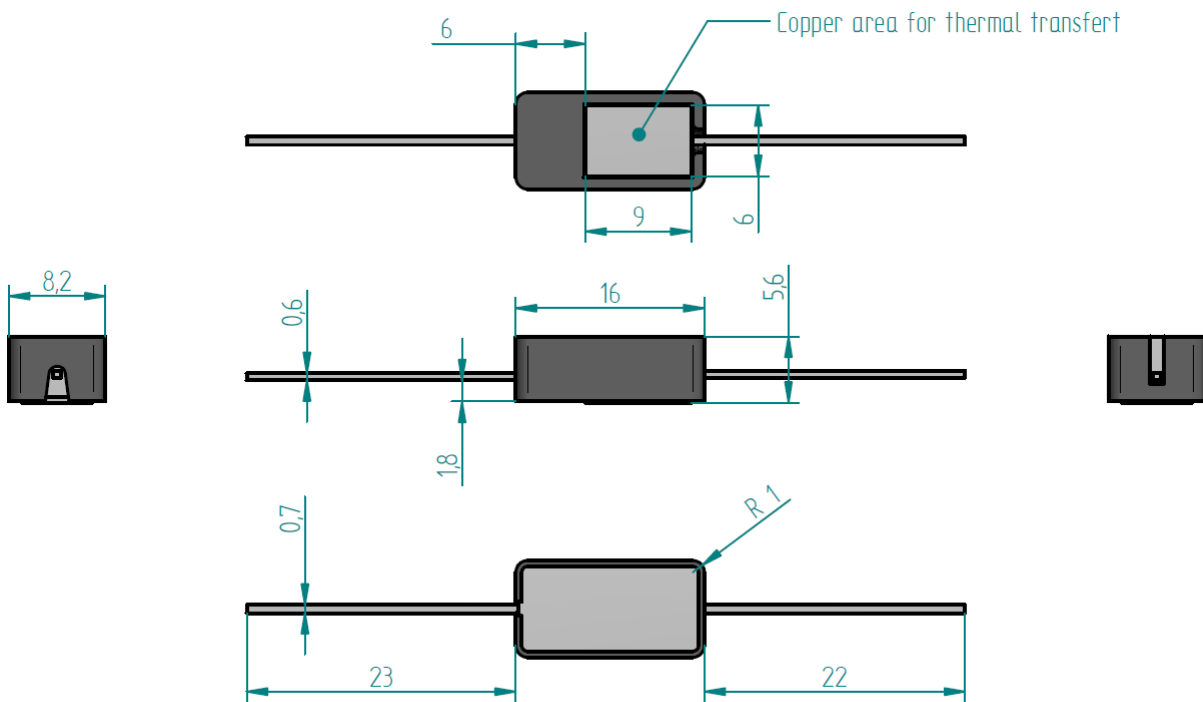


Fig. 3. Capacitance vs. Reverse Voltage



## Package Dimensions



Dimensions in millimeters

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### Information

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