Silicon Carbide PiN Diode
ASCPDA00210KF

V_{RRM}	=	10 kV
I_F	=	2 A
V_F	=	3.8 V

Features

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

Applications

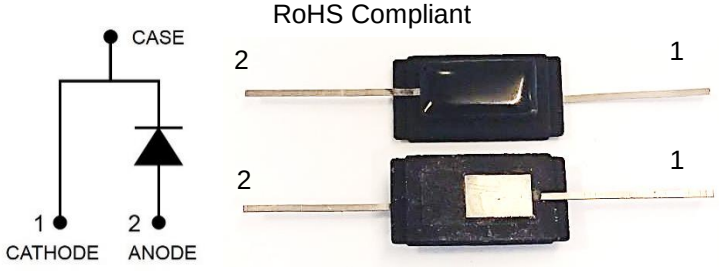
- General purpose
- Voltage multiplier
- Electrostatic systems
- X-Ray systems

Advantages

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

Package

RoHS Compliant



Absolute Maximum Ratings

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

Electrical Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	I_F = 2 A, T_C = 25°C I_F = 2 A, T_C = 125°C I_F = 2 A, T_C = 175°C		3.8 3.6 3.45		V
V_{BR}	Breakdown voltage	T_C = 25°C	11	13.5	14.5	kV
I_R	Reverse Current	V_R = 10 kV, T_C = 25°C			10	nA
Q_{rr}	Reverse Recovery Charge	I_F = 2 A, V_R = 200 V, dI/dt = 20 A/µs, T_C = 25°C		62		nC
t_{rr}	Reverse recovery time	I_F = 2 A, di/dt = 20 A/µs		158		ns
C	Total Capacitance	V_R = 1 V, f = 200 kHz V_R = 10 V, f = 200 kHz V_R = 200 V, f = 200 kHz		52 29 8		pF

Thermal Characteristics

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

Typical Performance

Fig. 1. Forward Characteristics

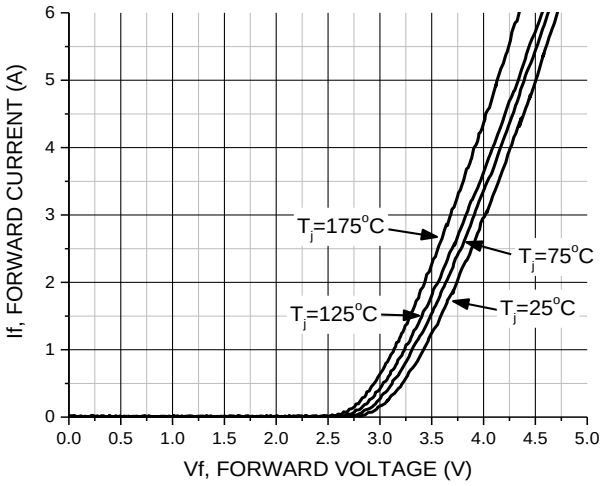


Fig. 2. Reverse Characteristics at 25°C

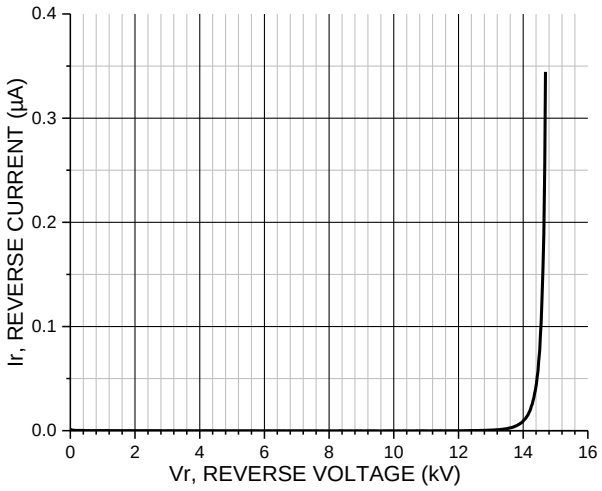


Fig. 3. Typical Turn Off Characteristics

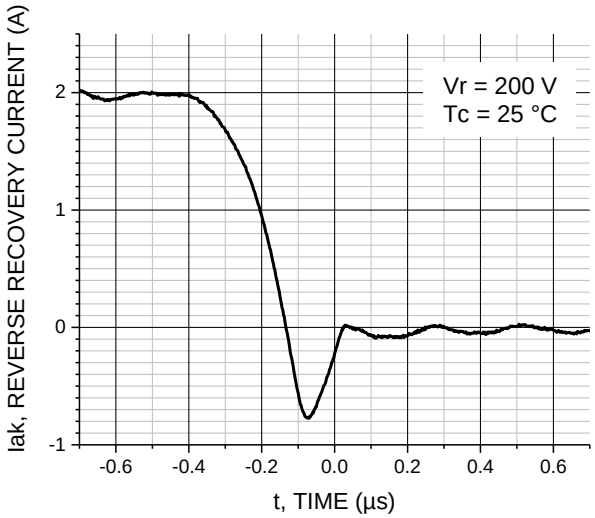


Fig. 4. Reverse Recovery Charge vs. Current

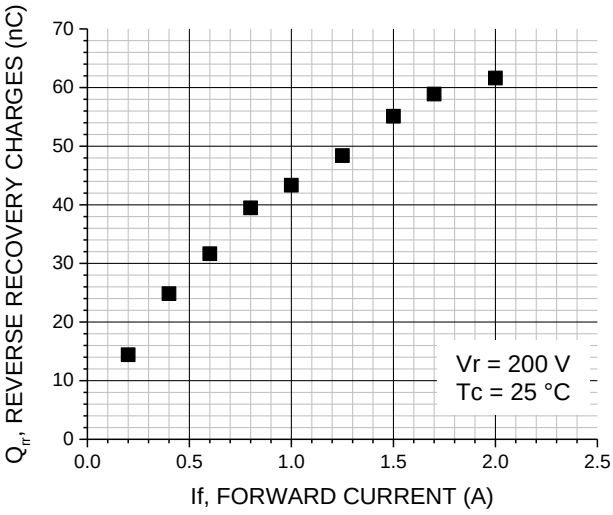
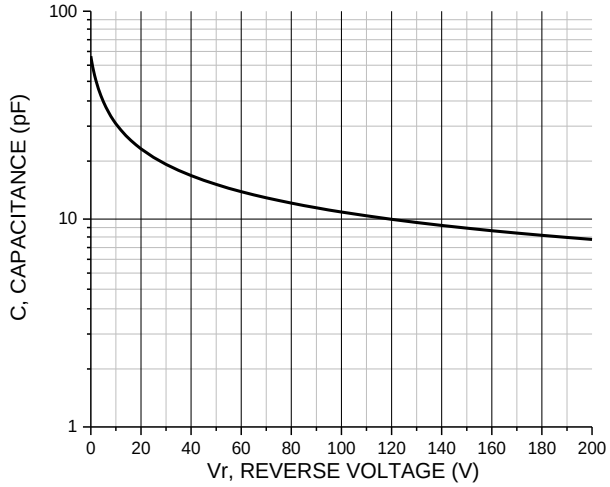
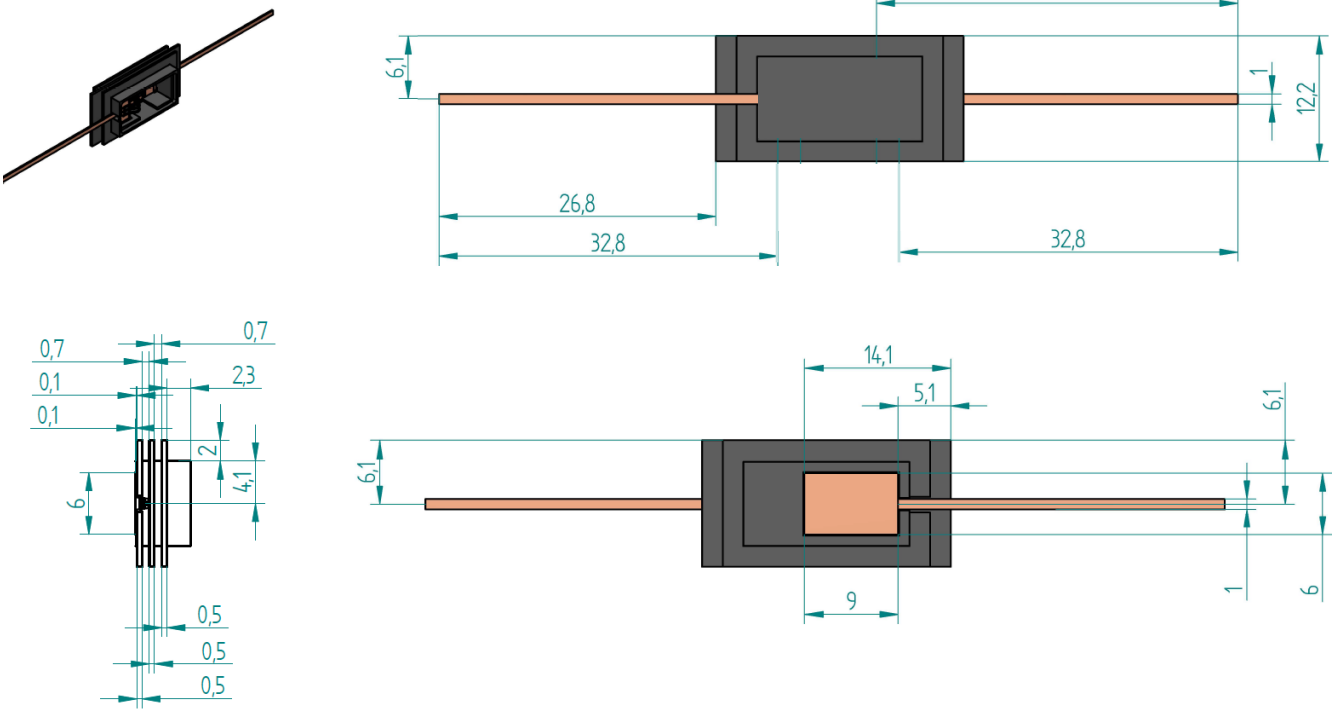


Fig. 5. Capacitance vs. Reverse Voltage



Package Dimensions



Dimensions in millimeters

Information

For further information on technology, delivery terms and conditions and prices, please contact Ascatron AB sales office.

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