

ProAsia Semiconductor Corporation

1200V/10A Silicon Carbide Schottky Diode

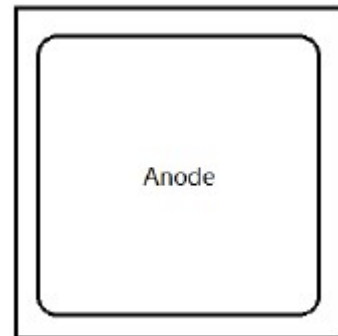
Features

- Zero or negligible reverse recovery
- Low forward voltage
- Positive temperature coefficient
- Extended surge current capability
- High junction temperature
- Temperature invariant switching behavior

V_{RRM}	1200V
I_F	10A
Q_c	55nC

Applications

- Solar inverters
- Motor drivers
- Power Factor Correction
- SMPS



Electrical Specifications

$T_C=25^{\circ}\text{C}$, unless otherwise specified.

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_R	Reverse Blocking Voltage	$I_R=250\mu\text{A}$	1200			V
I_R	Reverse Current	$V_R=1200\text{V}$ $T_J=25^{\circ}\text{C}$ $T_J=150^{\circ}\text{C}$		5 25	50 100	μA
V_F	Forward Voltage	$I_F=10\text{A}$ $T_J=25^{\circ}\text{C}$ $T_J=150^{\circ}\text{C}$		1.45 1.9	1.7 2.5	V

Absolute Maximum Ratings

$T_C=25^{\circ}\text{C}$, unless otherwise specified.

Symbol	Parameter	Rating
V_{RRM}	Repetitive Peak Reverse Voltage	1200 V
I_F	Continuous Forward Current $T_C=25\text{ }^{\circ}\text{C}$, $D=1$ $T_C=100\text{ }^{\circ}\text{C}$, $D=1$ $T_C=140\text{ }^{\circ}\text{C}$, $D=1$	32 A 18 A 10 A
I_{FSM}	Non-Repetitive Forward Surge Current $T_C=25\text{ }^{\circ}\text{C}$, $t_P=10\text{ms}$ $T_C=125\text{ }^{\circ}\text{C}$, $t_P=10\text{ms}$	70 A 58 A
I_{FRM}	Repetitive Forward Surge Current $T_C=25\text{ }^{\circ}\text{C}$, $t_P=10\text{ms}$ $T_C=125\text{ }^{\circ}\text{C}$, $t_P=10\text{ms}$	45 A 33 A
P_{TOT}	Power dissipation for $R_{th(j-c,max)}$, $T_C=25\text{ }^{\circ}\text{C}$	160 W
T_j, T_{stg}	Operating and Storage Temperature	-55°C to 175°C

Note: All characteristics are tested with the parts assembled in To-247-2L package, and exposure to absolute maximum ratings for prolonged time periods may affect device reliability.

Mechanical Parameters

Parameter	Typical Value	Unit
Wafer Size	150	mm
Die Thickness	175	um
Top Metallization (Al)	4.2	μm
Back Metallization (Ti/Ni/Ag)	1.4	μm
Frontside Passivation	Polyimide	
Cut line	100	um