

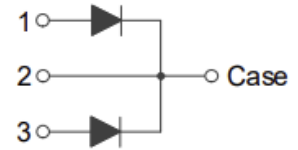
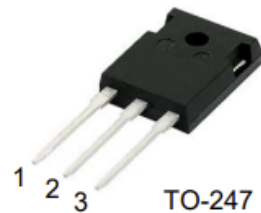
# EDH120D20R1V

## ev™ Automotive Grade Silicon Carbide Schottky Diode 1200V, 20A

### Features

- Zero Reverse Recovery Current
- Low Forward Voltage
- High Surge Current Capability
- Independent of Temperature Switching Behavior
- Positive Temperature Coefficient
- Max Junction Temperature 175 °C
- Pb-free, Halogen Free, and RoHS Compliant
- Qualified to AEC-Q101

$V_{RRM}$	$I_F, T_C=25^\circ C$	$T_{J, Max}$	$Q_C, Typ$
1200V	10/20A	175°C	60nC



### Benefits

- Higher Efficiency
- Ease of Paralleling
- Increased Power Density
- Reduced Cooling Requirements



### Applications

- On-board Charger / PFC
- DC-DC Converter
- Auxiliary Inverter

### Ordering Information

Part Number	Package	Shipping	Quantity
EDH120D20R1V	TO-247-3L	Tube	30 units

### Absolute Maximum Ratings ( $T_C=25^\circ C$ , unless otherwise specified)

Symbol	Parameter	Value	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage	1200	V
$I_F$	Forward Current (Per leg/Device)	$T_C=150^\circ C$ 10/20	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current (Per leg)	$T_C=25^\circ C, t_p=10ms$	80
		$T_C=150^\circ C, t_p=10ms$	70
$I_{F,Max}$	Non-Repetitive Peak Forward Current (Per leg)	$T_C=25^\circ C, t_p=10\mu s$	810
		$T_C=150^\circ C, t_p=10\mu s$	700
$I^2dt$ value	$\int I^2t$ (Per leg)	$T_C=25^\circ C, t_p=10ms$	32
		$T_C=150^\circ C, t_p=10ms$	24.5
$P_{tot}$	Power Dissipation (Per leg)	$T_C=25^\circ C$ 147	W
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to 175	°C

## ■ Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (Per leg/Device)	1.02/0.45	°C/W

## ■ Electrical Characteristics ( $T_C=25^\circ\text{C}$ , unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_F$	Forward Voltage (Per leg)	$I_F=10\text{A}$ , $T_J=25^\circ\text{C}$		1.39	1.70	V
		$I_F=10\text{A}$ , $T_J=175^\circ\text{C}$		1.80		
$I_R$	Reverse Current (Per leg)	$V_R=1200\text{V}$ , $T_J=25^\circ\text{C}$			100	$\mu\text{A}$
		$V_R=1200\text{V}$ , $T_J=175^\circ\text{C}$			300	
$Q_C$	Total Capacitive Charge (Per leg)	$V_R=800\text{V}$ , $T_J=25^\circ\text{C}$		60		nC
C	Total Capacitance (Per leg)	$V_R=1\text{V}$ , $f=1\text{MHz}$		695		pF
		$V_R=800\text{V}$ , $f=1\text{MHz}$		44		
$E_C$	Capacitance Stored Energy (Per leg)	$V_R=800\text{V}$		18		$\mu\text{J}$

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