

# EDH120D10R1L

## ev™ Silicon Carbide Schottky Diode 1200V, 10A

### 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

$V_{RRM}$	$I_F, T_C=25^\circ C$	$T_{J, Max}$	$Q_C, Typ$
1200V	5 / 10A	175°C	30nC

### Benefits

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



### Applications

- Solar Inverters
- Power Factor Correction
- Industrial Power Supply
- EV Charging Station

### Ordering Information

Part Number	Package	Shipping	Quantity
EDH120D10R1L	TO-247-3L	Tube	30 units

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

Symbol	Parameter	Value	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage	1200	V
$I_F$	Forward Current (Per leg / Device)	$T_C=154^\circ C$ 5 / 10	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current (Per leg)	$T_C=25^\circ C, t_p=10ms$	40
		$T_C=150^\circ C, t_p=10ms$	35
$I_{F,Max}$	Non-Repetitive Peak Forward Current (Per leg)	$T_C=25^\circ C, t_p=10\mu s$	450
		$T_C=150^\circ C, t_p=10\mu s$	370
$I^2dt$ value	$\int I^2t$ (Per leg)	$T_C=25^\circ C, t_p=10ms$	8
		$T_C=150^\circ C, t_p=10ms$	6
$P_{tot}$	Power Dissipation (Per leg)	$T_C=25^\circ C$ 87	W
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to 175	°C

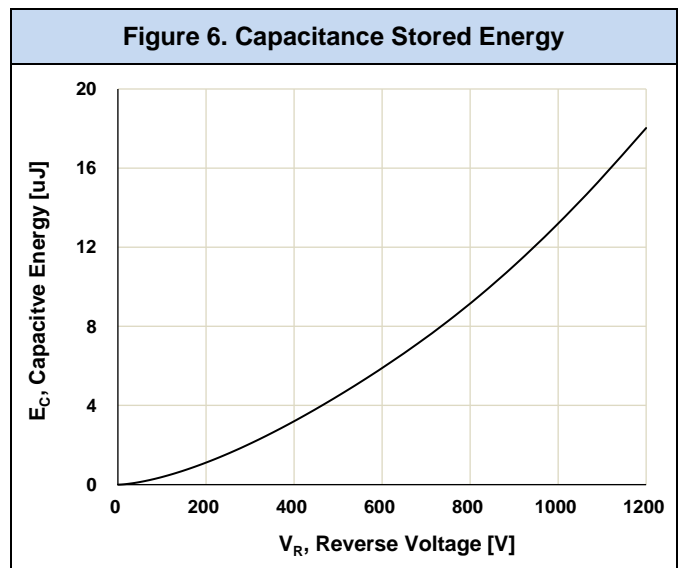
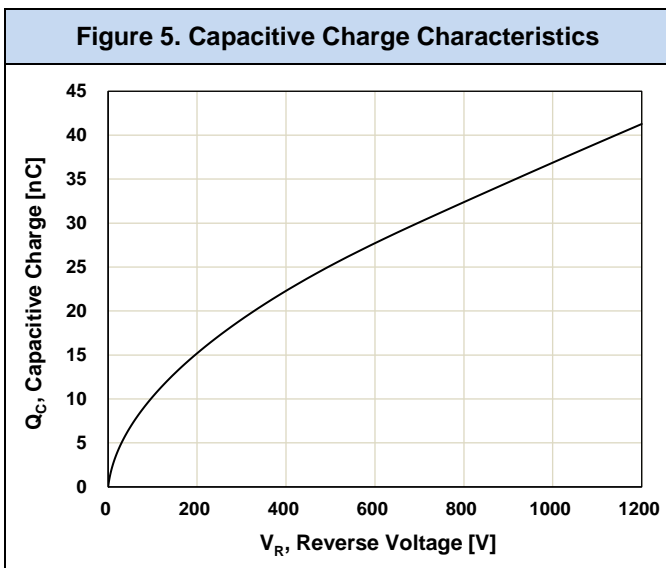
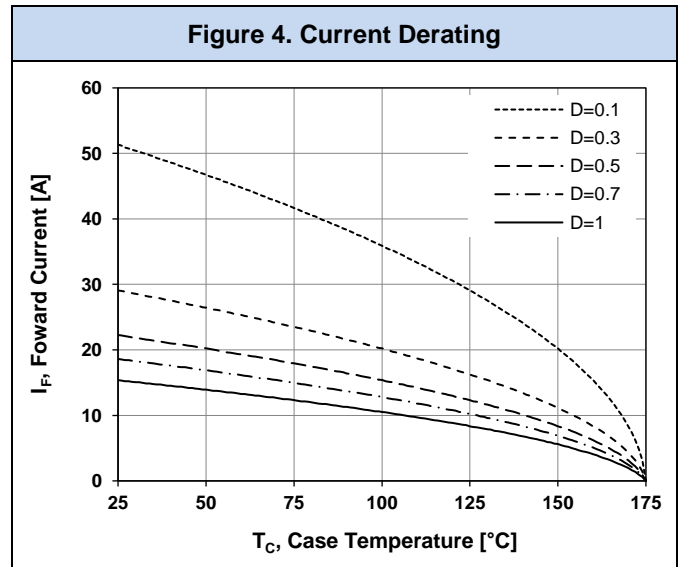
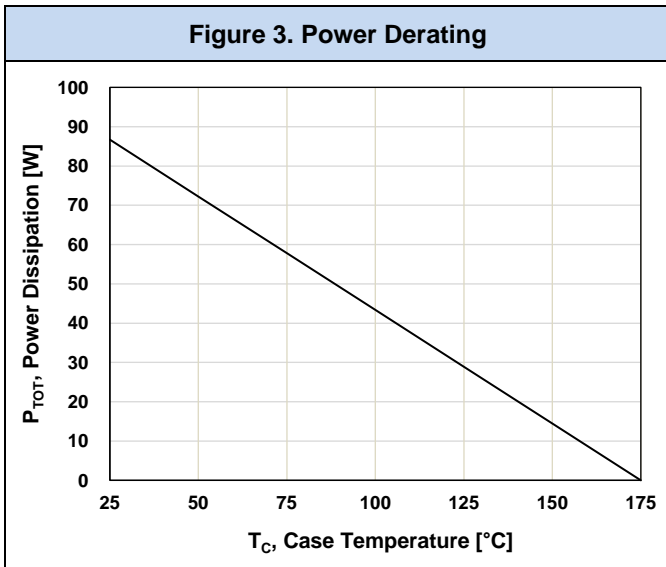
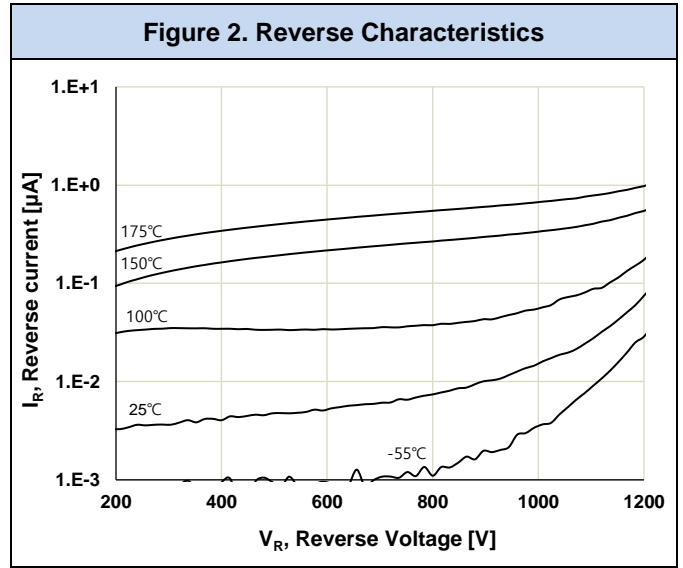
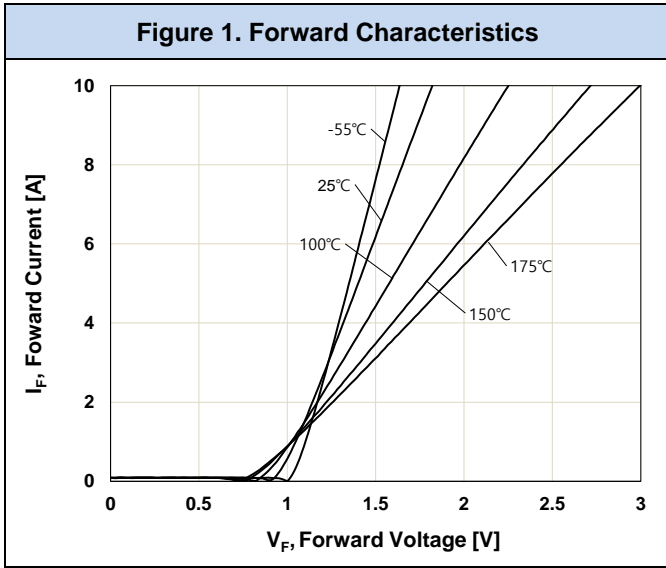
## ■ Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (Per leg / Device)	1.73 / 0.67	°C/W

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

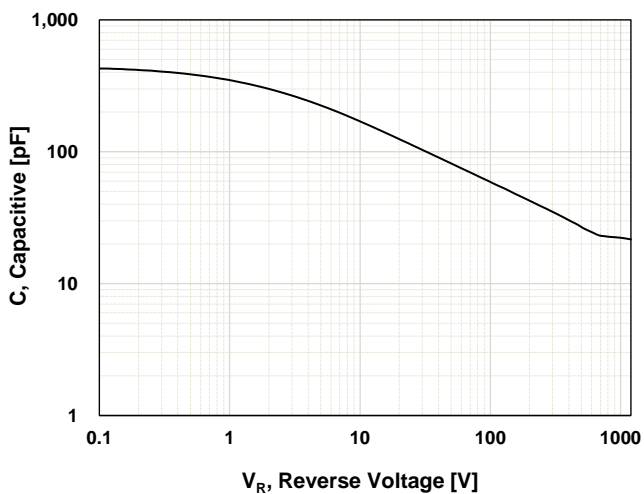
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_F$	Forward Voltage (Per leg)	$I_F=5\text{A}$ , $T_J=25^\circ\text{C}$		1.39	1.70	V
		$I_F=5\text{A}$ , $T_J=175^\circ\text{C}$		1.80		
$I_R$	Reverse Current (Per leg)	$V_R=1200\text{V}$ , $T_J=25^\circ\text{C}$			100	$\mu\text{A}$
		$V_R=1200\text{V}$ , $T_J=175^\circ\text{C}$			300	
$Q_C$	Total Capacitive Charge (Per leg)	$V_R=800\text{V}$ , $T_J=25^\circ\text{C}$		30		nC
C	Total Capacitance (Per leg)	$V_R=1\text{V}$ , $f=100\text{kHz}$		345		pF
		$V_R=800\text{V}$ , $f=100\text{kHz}$		22		
$E_C$	Capacitance Stored Energy (Per leg)	$V_R=800\text{V}$		9		$\mu\text{J}$

■ **Typical Characteristics** (Per Lag /  $T_J=25^\circ\text{C}$  unless otherwise noted)

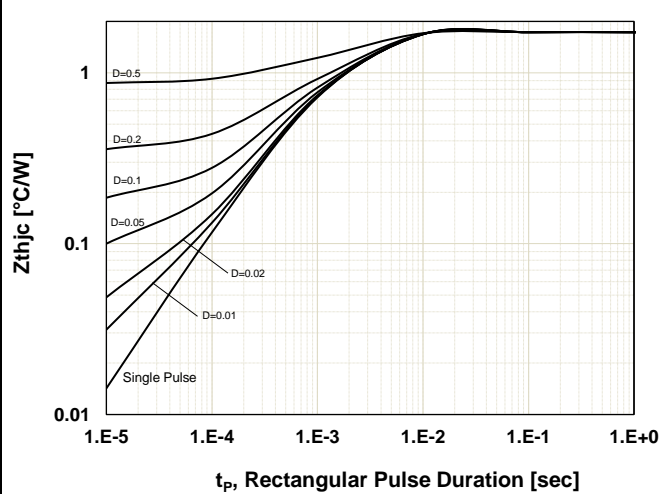


■ **Typical Characteristics** (Per Lag)

**Figure 7. Capacitive Characteristics**

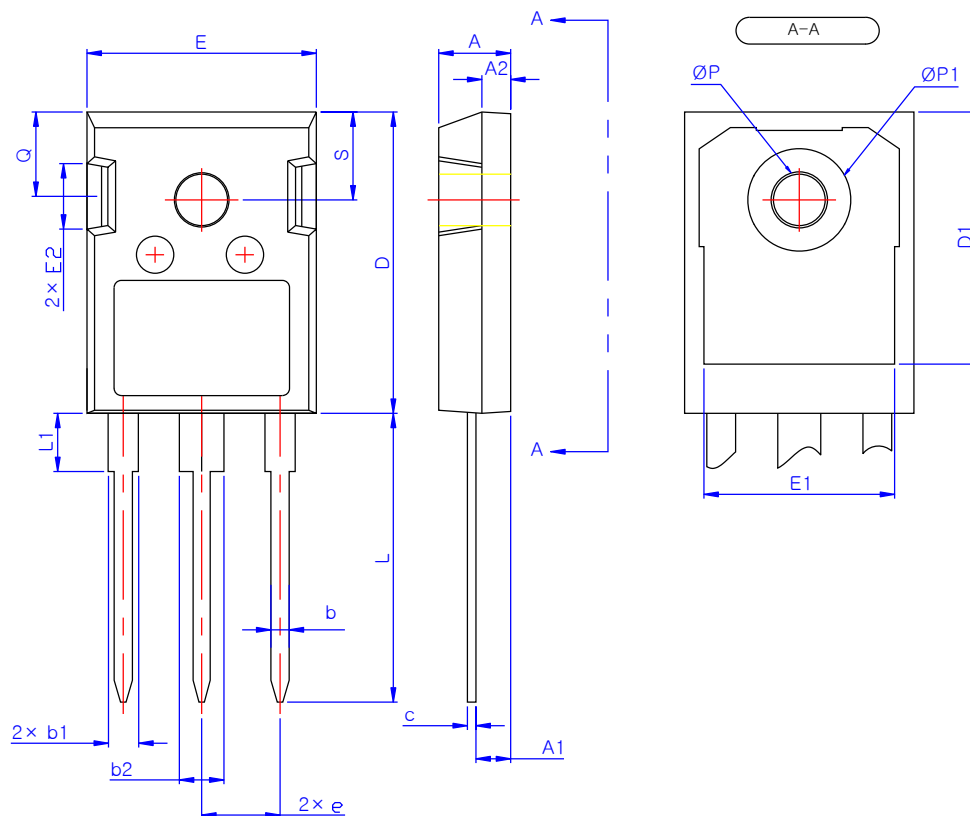


**Figure 8. Transient Thermal Response Curve**



## Package Outlines

### TO-247-3L



SYMBOL	MIN	MAX
A	4.80	5.20
A1	2.29	2.54
A2	1.90	2.10
b	1.10	1.30
b1	1.91	2.20
b2	2.92	3.20
c	0.50	0.70
D	20.80	21.34
D1	17.43	17.83
E	15.75	16.13
E1	13.06	13.46
E2	4.32	4.83
e	5.45 BSC	
L	19.85	20.25
L1	-	4.49
ØP	3.55	3.65
ØP1	7.08	7.28
Q	5.59	6.19
S	6.15 BSC	

\*Dimensions in millimeters

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