

# EDJ120S10R1L

## 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

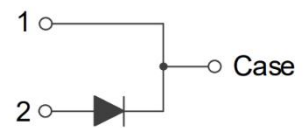
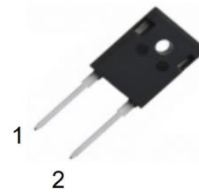
### Benefits

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

### Applications

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

$V_{RRM}$	$I_F, T_C=25^\circ C$	$T_{J, Max}$	$Q_C, Typ$
1200V	10A	175°C	63nC



### Ordering Information

Part Number	Package	Shipping	Quantity
EDJ120S10R1L	TO-247-2L	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	$T_C=152^\circ C$	10	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current	$T_C=25^\circ C, t_p=10ms$	80	A
		$T_C=150^\circ C, t_p=10ms$	67	
$I_{F,Max}$	Non-Repetitive Peak Forward Current	$T_C=25^\circ C, t_p=10\mu s$	810	A
		$T_C=150^\circ C, t_p=10\mu s$	690	
$I^2dt$ value	$\int I^2 dt$	$T_C=25^\circ C, t_p=10ms$	32	$A^2s$
		$T_C=150^\circ C, t_p=10ms$	22.4	$A^2s$
$P_{tot}$	Power Dissipation	$T_C=25^\circ C$	153	W
$T_J, T_{STG}$	Operating and Storage Temperature Range		-55 to 175	°C

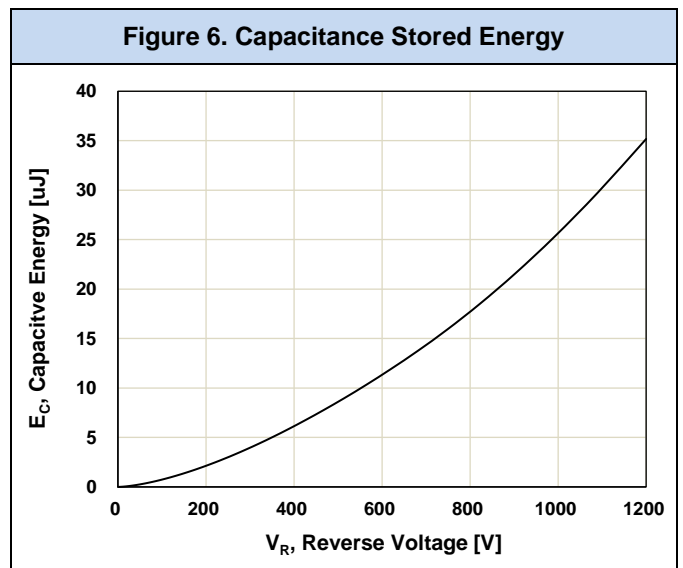
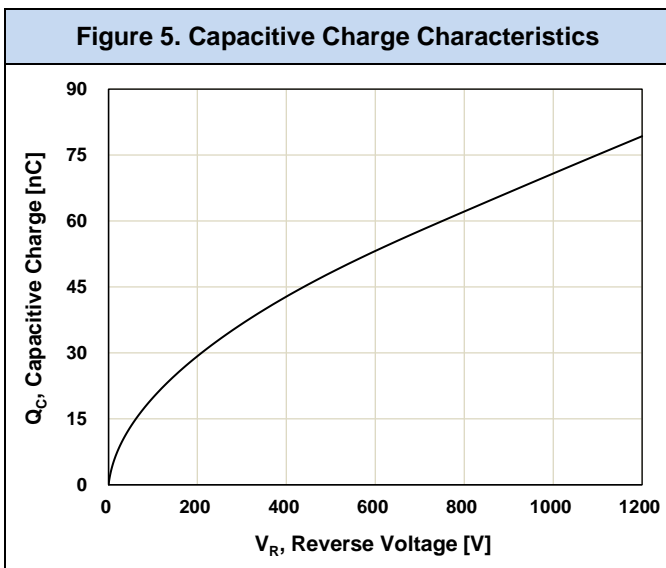
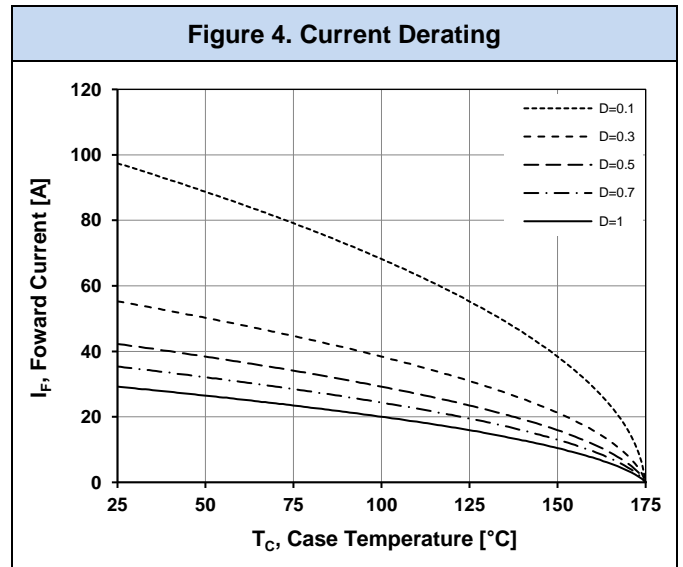
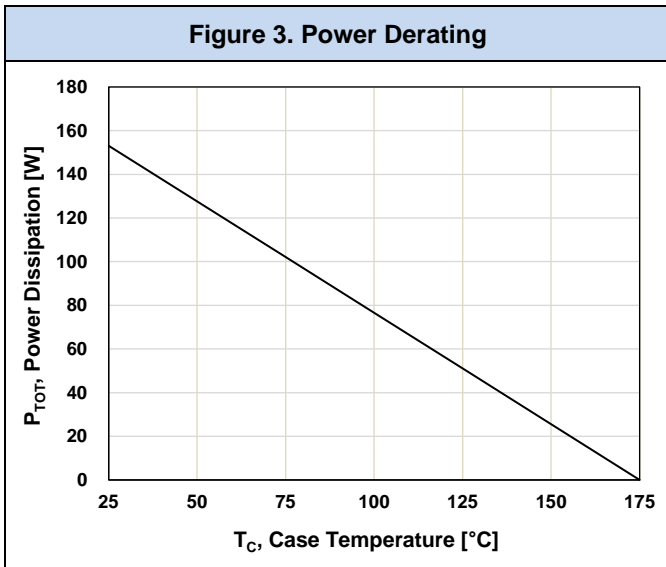
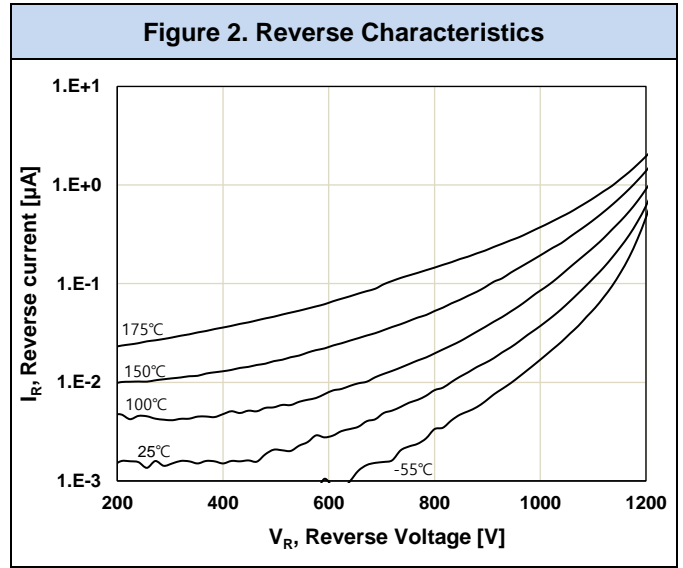
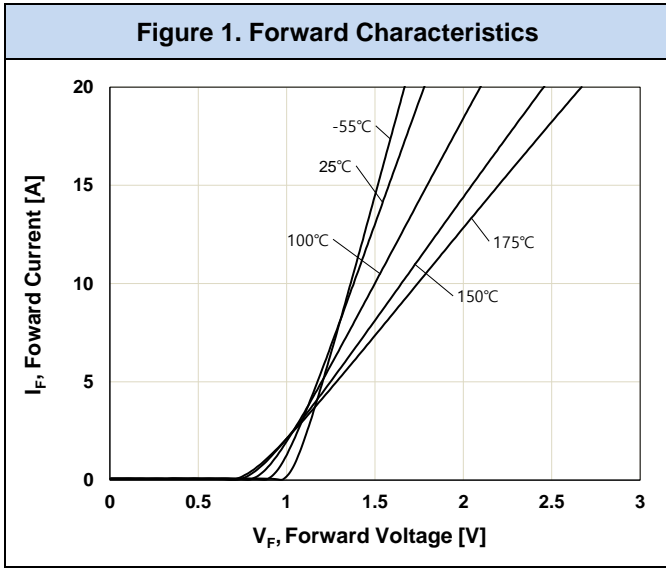
## ■ Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	0.98	°C/W

## ■ Electrical Characteristics (T<sub>C</sub>=25°C, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_F$	Forward Voltage	$I_F=10A, T_J=25^\circ C$		1.39	1.70	V
		$I_F=10A, T_J=175^\circ C$		1.80		
$I_R$	Reverse Current	$V_R=1200V, T_J=25^\circ C$			100	$\mu A$
		$V_R=1200V, T_J=175^\circ C$			300	
$Q_C$	Total Capacitive Charge	$V_R=800V, T_J=25^\circ C$		63		nC
C	Total Capacitance	$V_R=1V, f=100kHz$		695		pF
		$V_R=800V, f=100kHz$		44		
$E_C$	Capacitance Stored Energy	$V_R=800V$		18		$\mu J$

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



■ Typical Characteristics

Figure 7. Capacitive Characteristics

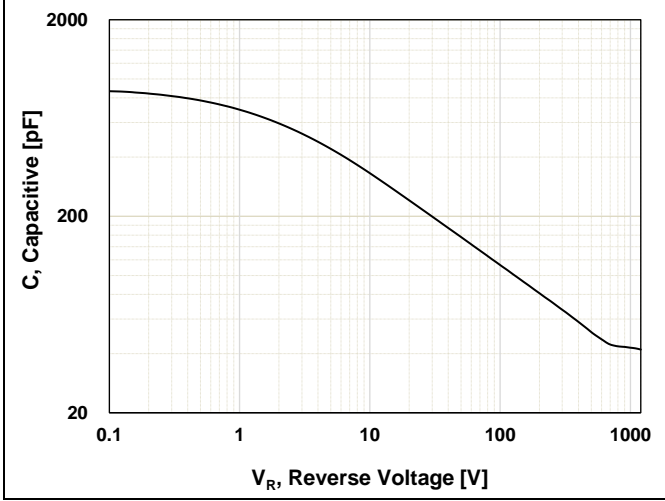
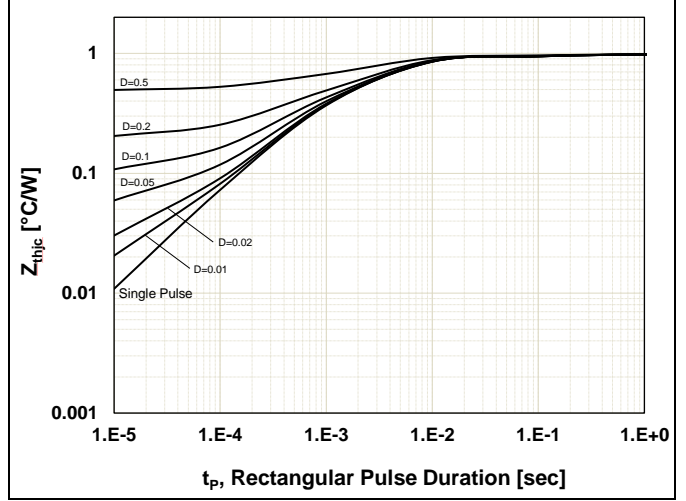
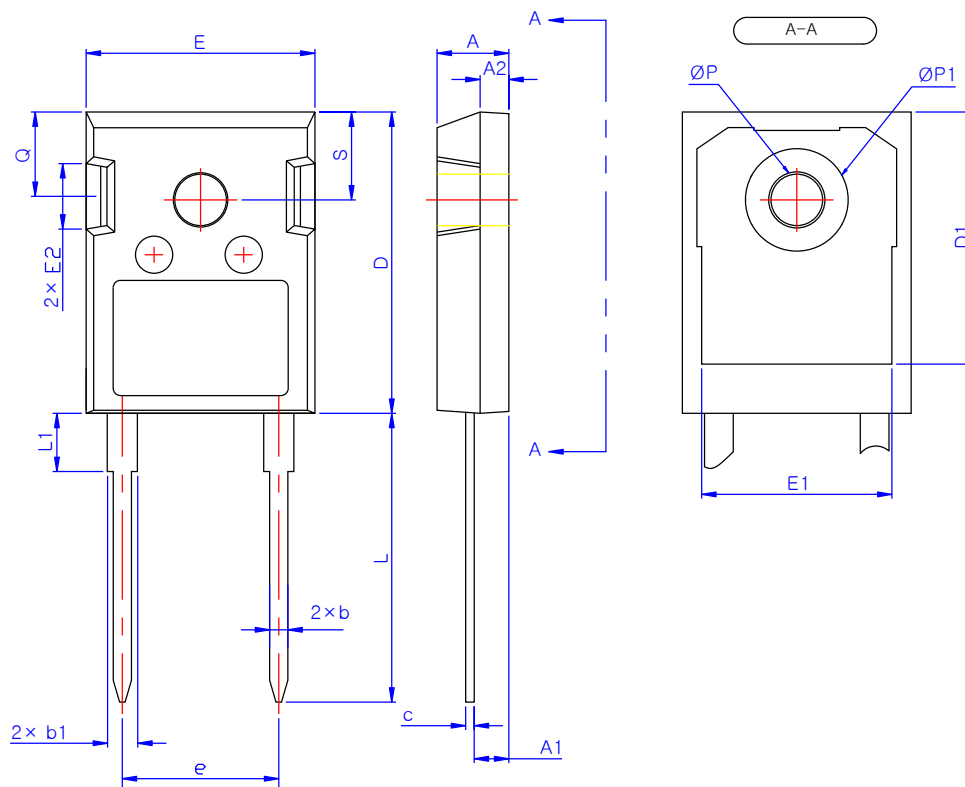


Figure 8. Transient Thermal Response Curve



## Package Outlines

### TO-247-2L



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	10.92 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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