

# EDJ120S30R1L

## ev™ Silicon Carbide Schottky Diode 1200V, 30A

### 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

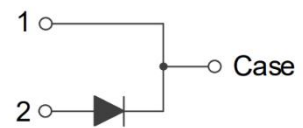
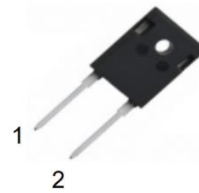
### Benefits

- 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	30A	175°C	180nC



### Ordering Information

Part Number	Package	Shipping	Quantity
EDJ120S30R1L	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	$T_C=150^\circ C$	30	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current	$T_C=25^\circ C, t_p=10ms$	180	A
		$T_C=150^\circ C, t_p=10ms$	155	
$I_{F,Max}$	Non-Repetitive Peak Forward Current	$T_C=25^\circ C, t_p=10\mu s$	1350	A
		$T_C=150^\circ C, t_p=10\mu s$	1150	
$I^2dt$ value	$\int I^2t$	$T_C=25^\circ C, t_p=10ms$	162	$A^2s$
		$T_C=150^\circ C, t_p=10ms$	120	$A^2s$
$P_{tot}$	Power Dissipation	$T_C=25^\circ C$	429	W
$T_J, T_{STG}$	Operating and Storage Temperature Range		-55 to 175	°C

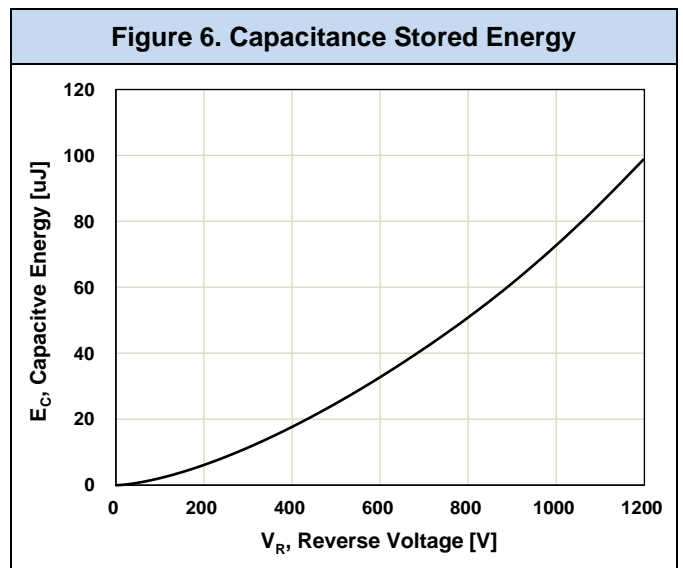
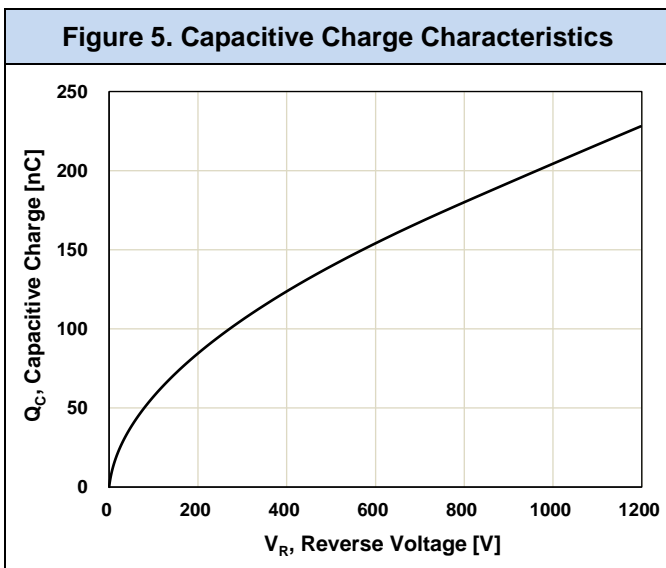
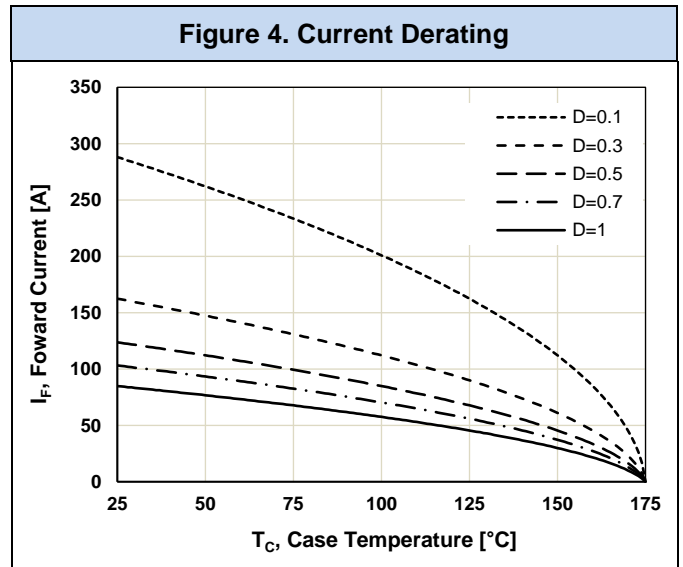
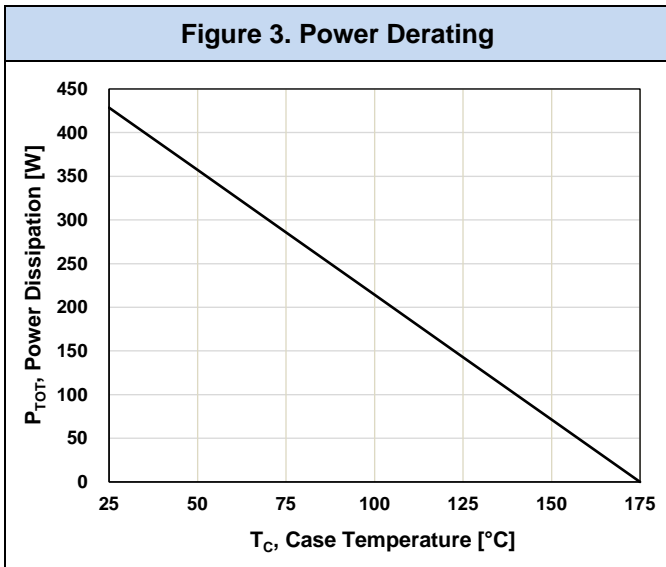
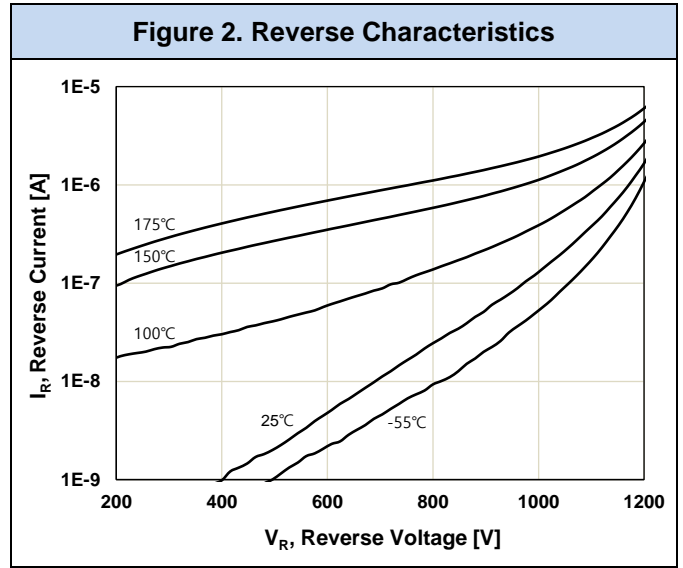
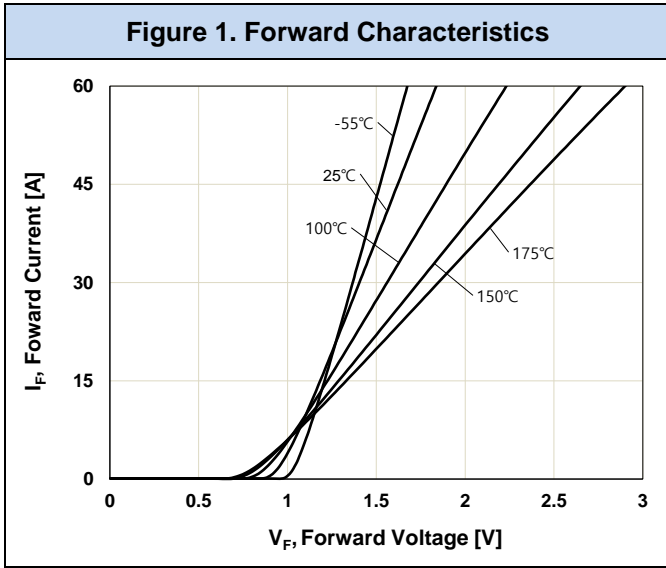
## ■ Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	0.35	°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	$I_F=30\text{A}$ , $T_J=25^\circ\text{C}$		1.39	1.70	V
		$I_F=30\text{A}$ , $T_J=175^\circ\text{C}$		1.80		
$I_R$	Reverse Current	$V_R=1200\text{V}$ , $T_J=25^\circ\text{C}$			100	$\mu\text{A}$
		$V_R=1200\text{V}$ , $T_J=175^\circ\text{C}$			300	
$Q_C$	Total Capacitive Charge	$V_R=800\text{V}$ , $T_J=25^\circ\text{C}$		180		nC
C	Total Capacitance	$V_R=1\text{V}$ , $f=1\text{MHz}$		2010		pF
		$V_R=800\text{V}$ , $f=1\text{MHz}$		120		
$E_C$	Capacitance Stored Energy	$V_R=800\text{V}$		50		$\mu\text{J}$

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



■ Typical Characteristics

Figure 7. Capacitive Characteristics

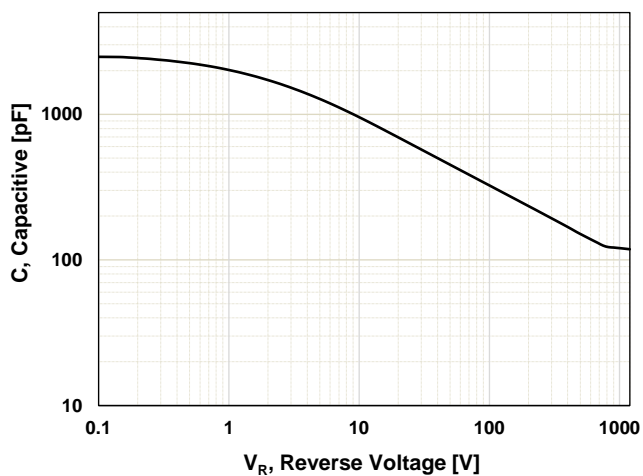
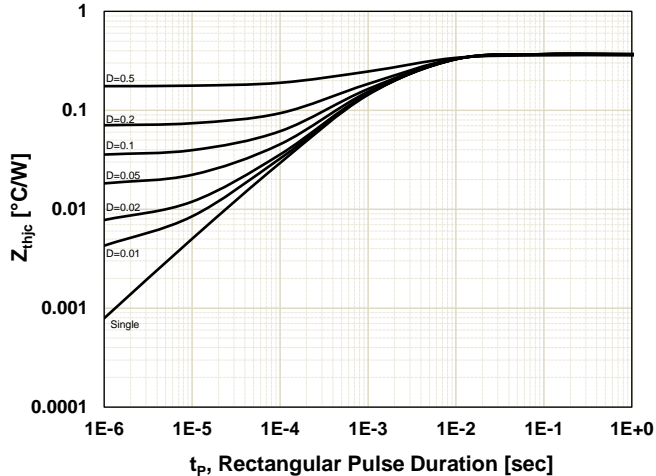
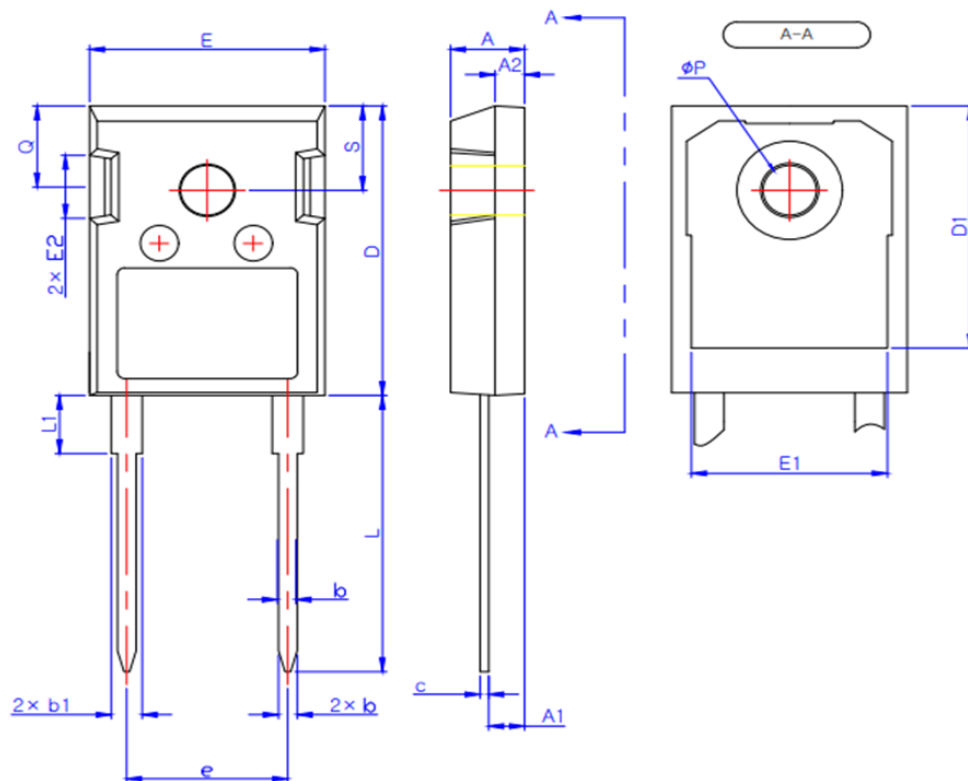


Figure 8. Transient Capacitive Characteristics



## 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
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	10.90 BSC	
L	19.85	20.25
L1	-	4.49
$\phi P$	3.55	3.65
Q	5.59	6.19
S	6.15 BSC	

\* Dimensions in millimeters

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