

EDJ120S40R1L

ev™ Silicon Carbide Schottky Diode 1200V, 40A

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

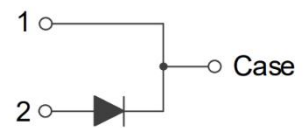
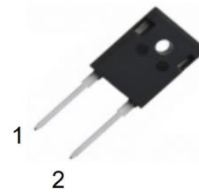
Benefits

- 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	40A	175°C	240nC



Ordering Information

Part Number	Package	Shipping	Quantity
EDJ120S40R1L	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	$T_C=150^\circ C$ 40	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current	$T_C=25^\circ C, t_p=10ms$	230
		$T_C=150^\circ C, t_p=10ms$	195
$I_{F,Max}$	Non-Repetitive Peak Forward Current	$T_C=25^\circ C, t_p=10\mu s$	1580
		$T_C=150^\circ C, t_p=10\mu s$	1350
I^2dt value	$\int I^2 dt$	$T_C=25^\circ C, t_p=10ms$	265
		$T_C=150^\circ C, t_p=10ms$	190
P_{tot}	Power Dissipation	$T_C=25^\circ C$ 600	W
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to 175	°C

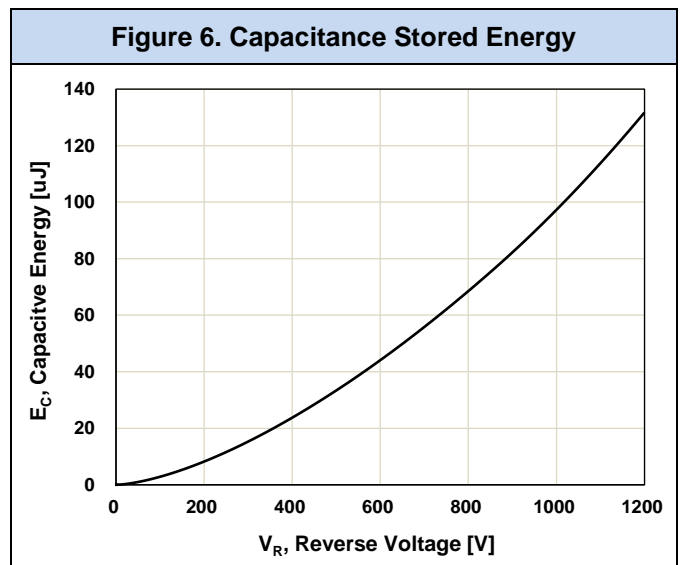
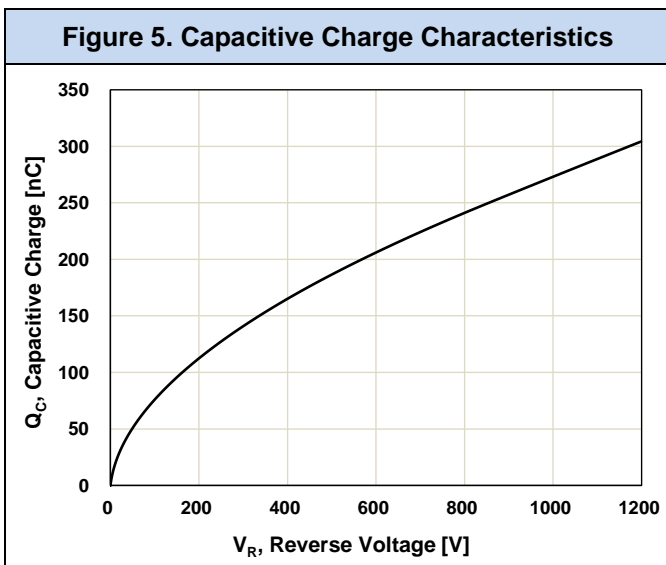
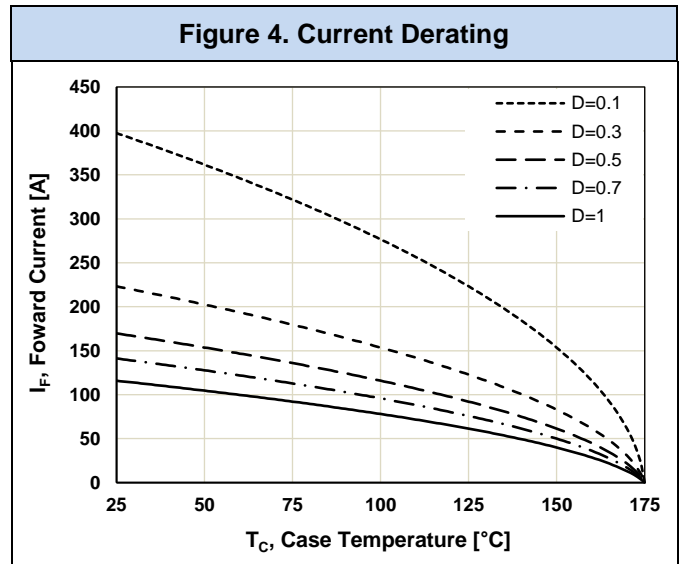
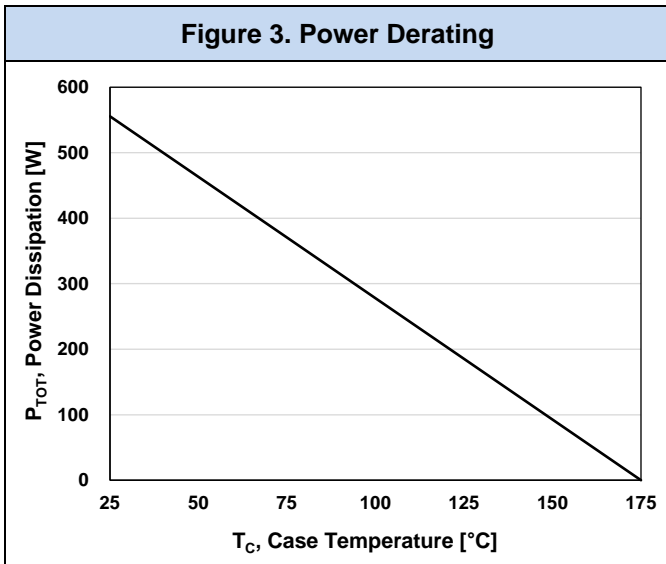
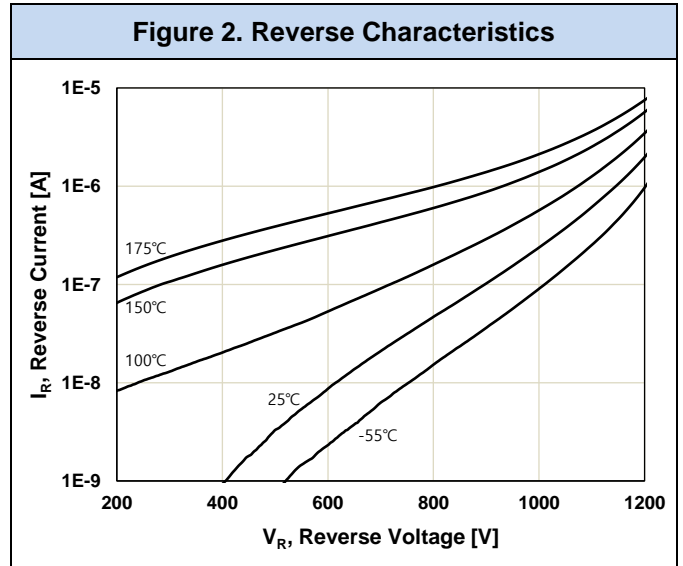
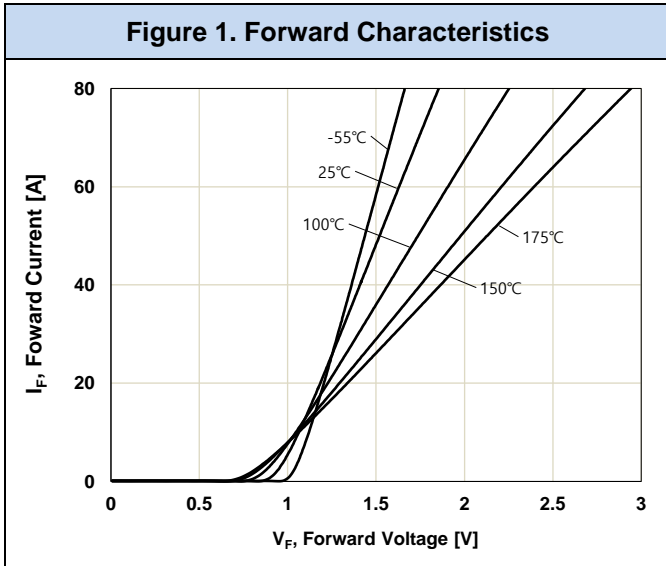
■ Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	0.25	°C/W

■ Electrical Characteristics (T_C=25°C, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	$I_F=40A, T_J=25^\circ C$		1.39	1.70	V
		$I_F=40A, T_J=175^\circ C$		1.80		
I_R	Reverse Current	$V_R=1200V, T_J=25^\circ C$			100	μA
		$V_R=1200V, T_J=175^\circ C$			300	
Q_C	Total Capacitive Charge	$V_R=800V, T_J=25^\circ C$		240		nC
C	Total Capacitance	$V_R=1V, f=1MHz$		2630		pF
		$V_R=800V, f=1MHz$		165		
E_C	Capacitance Stored Energy	$V_R=800V$		67		μJ

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



■ Typical Characteristics

Figure 7. Capacitive Characteristics

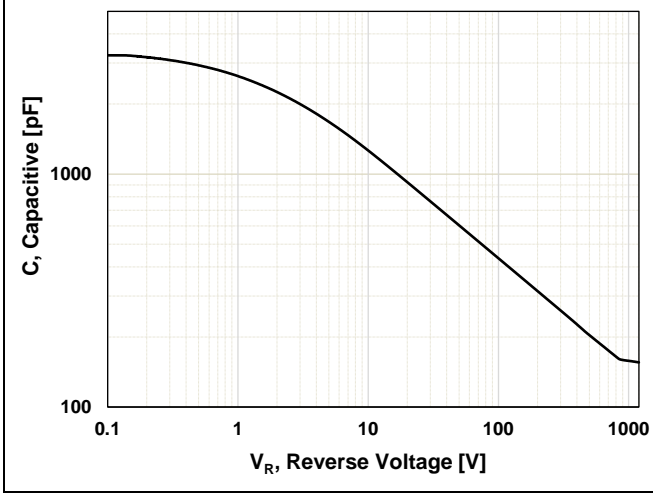
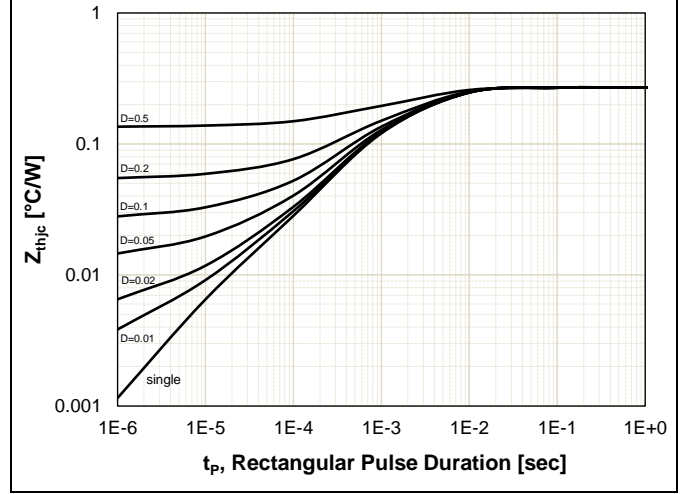
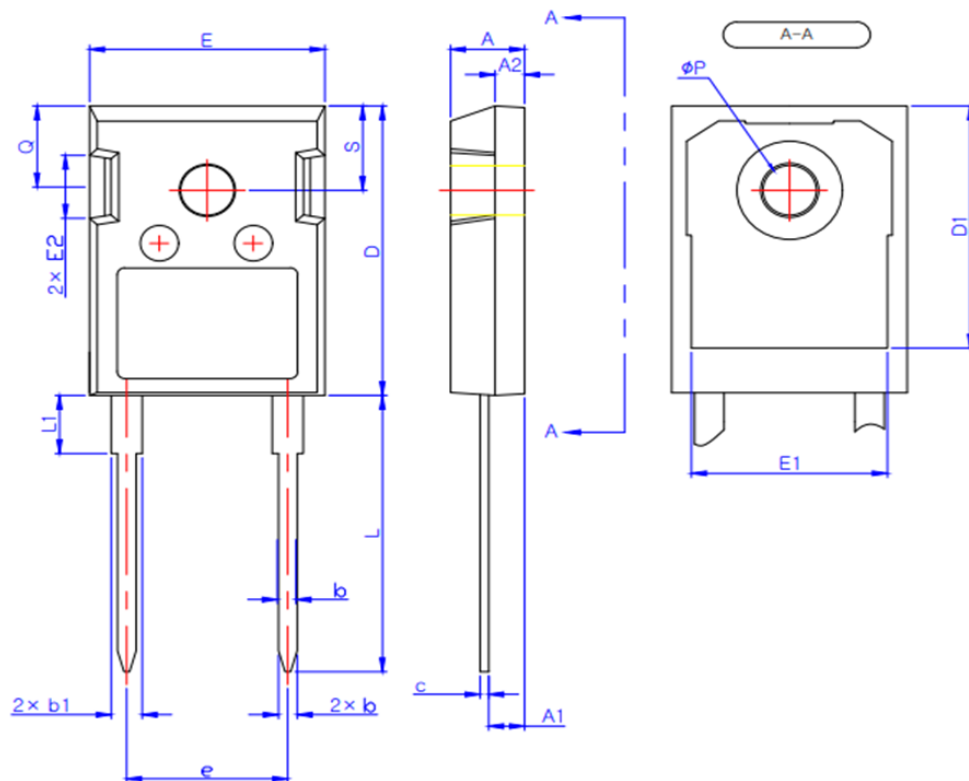


Figure 8. Transient Capacitive Characteristics



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
ϕP	3.55	3.65
Q	5.59	6.19
S	6.15 BSC	

* Dimensions in millimeters

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