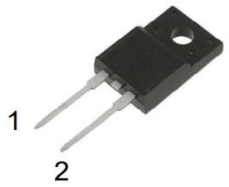
EDF65S06R1L

ev™ Silicon Carbide Schottky Diode
650V, 6A

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}	$I_{F,\ Tc=25℃}$	$T_{J,\ Max}$	$Q_{C,\ Typ}$
650V	6A	175°C	17nC



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
EDF65S06R1L	TO-220F-2L	Tube	50 units

■ Absolute Maximum Ratings (T_C=25℃, unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		650	V
I_F	Forward Current	T_C=110℃	6	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current	T_C=25℃, t_p=10ms	26	A
		T_C=150℃, t_p=10ms	22	
$I_{F,Max}$	Non-Repetitive Peak Forward Current	T_C=25℃, t_p=10µs	290	A
		T_C=150℃, t_p=10µs	247	
I^2dt value	$\int I^2t$	T_C=25℃, t_p=10ms	3.3	A^2s
		T_C=150℃, t_p=10ms	2.4	A^2s
P_{tot}	Power Dissipation	T_C=25℃	29	W
T_J , T_{STG}	Operating and Storage Temperature Range		-55 to 175	℃

■ Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	5.2	℃/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage	I_F=6A, T_J=25℃		1.50	1.80	V
		I_F=6A, T_J=175℃		1.65		
I_R	Reverse Current	V_R=650V, T_J=25℃			100	μA
		V_R=650V, T_J=175℃			300	
Q_C	Total Capacitive Charge	V_R=400V, T_J=25℃		17		nC
C	Total Capacitance	V_R=1V, f=100kHz		273		pF
		V_R=400V, f=100kHz		24		
E_C	Capacitance Stored Energy	V_R=400V		2.4		μJ

■ Typical Characteristics (T_J=25℃ unless otherwise noted)

Figure 1. Forward Characteristics

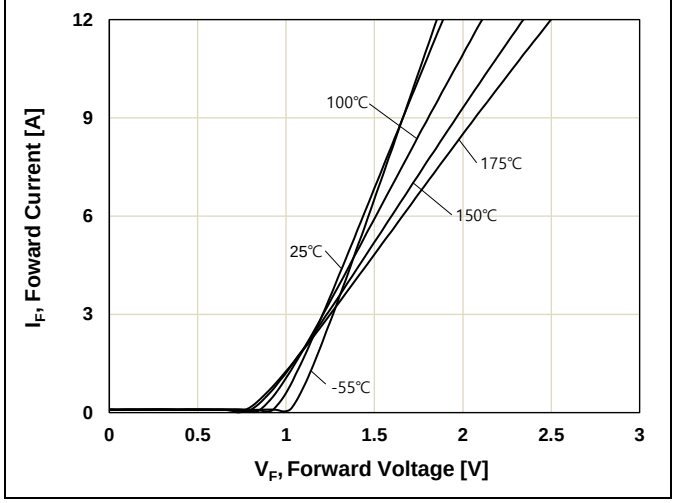


Figure 2. Reverse Characteristics

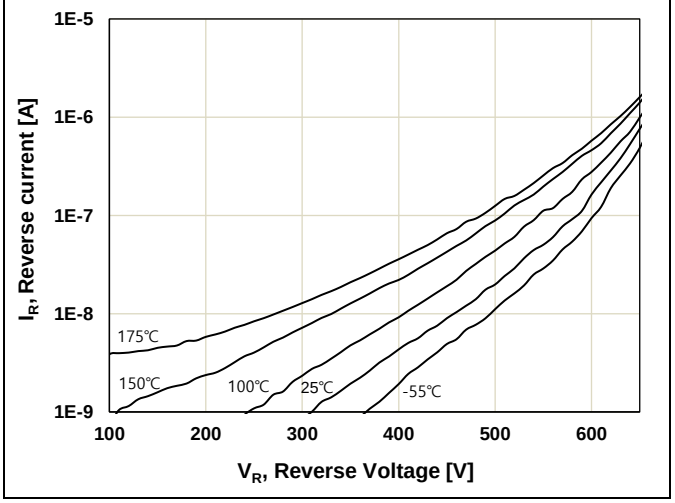


Figure 3. Power Derating

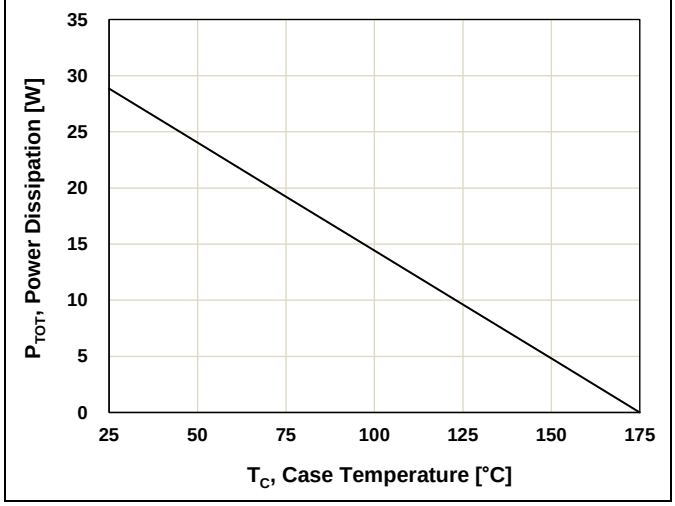


Figure 4. Current Derating

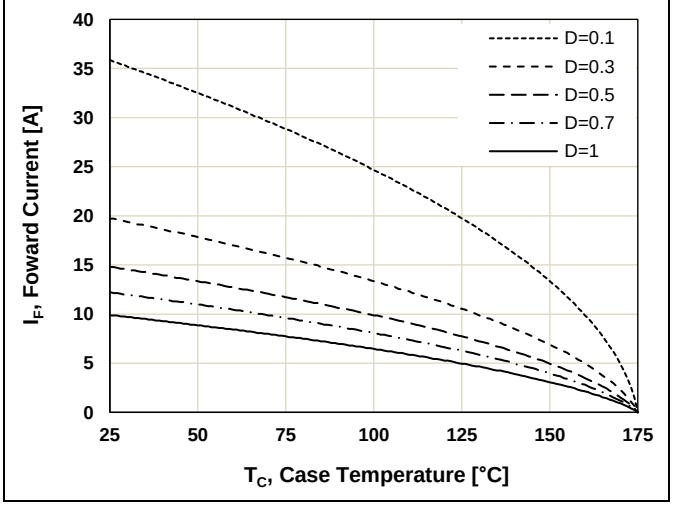


Figure 5. Capacitive Charge Characteristics

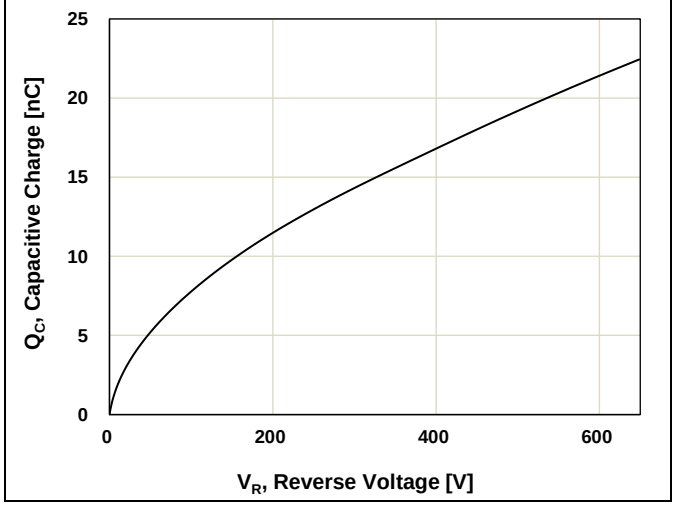
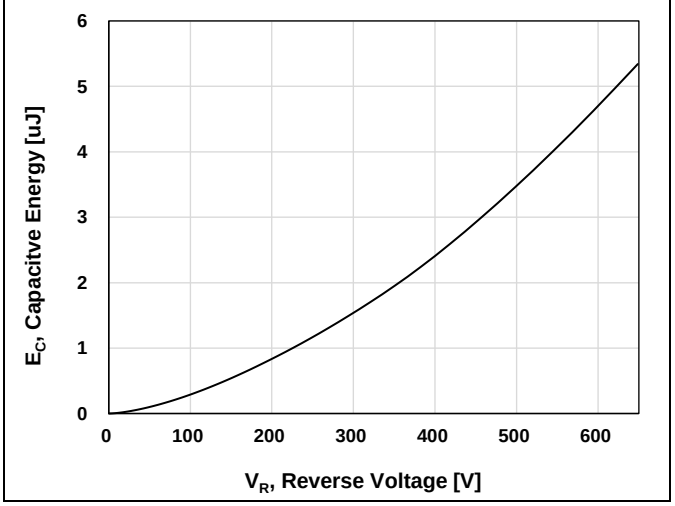


Figure 6. Capacitance Stored Energy



■ Typical Characteristics

Figure 7. Capacitive Characteristics

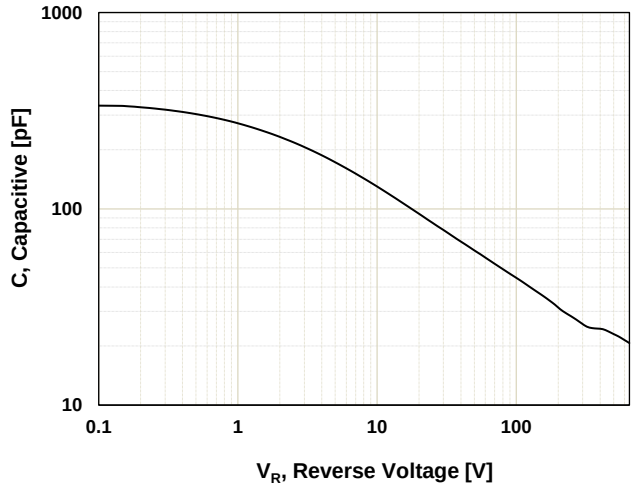
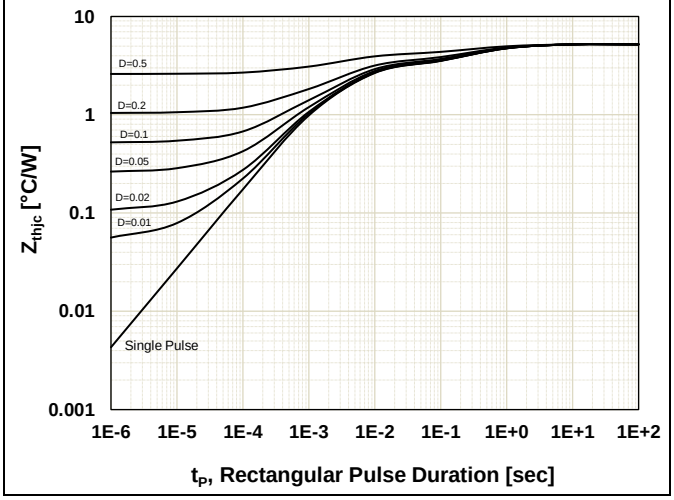
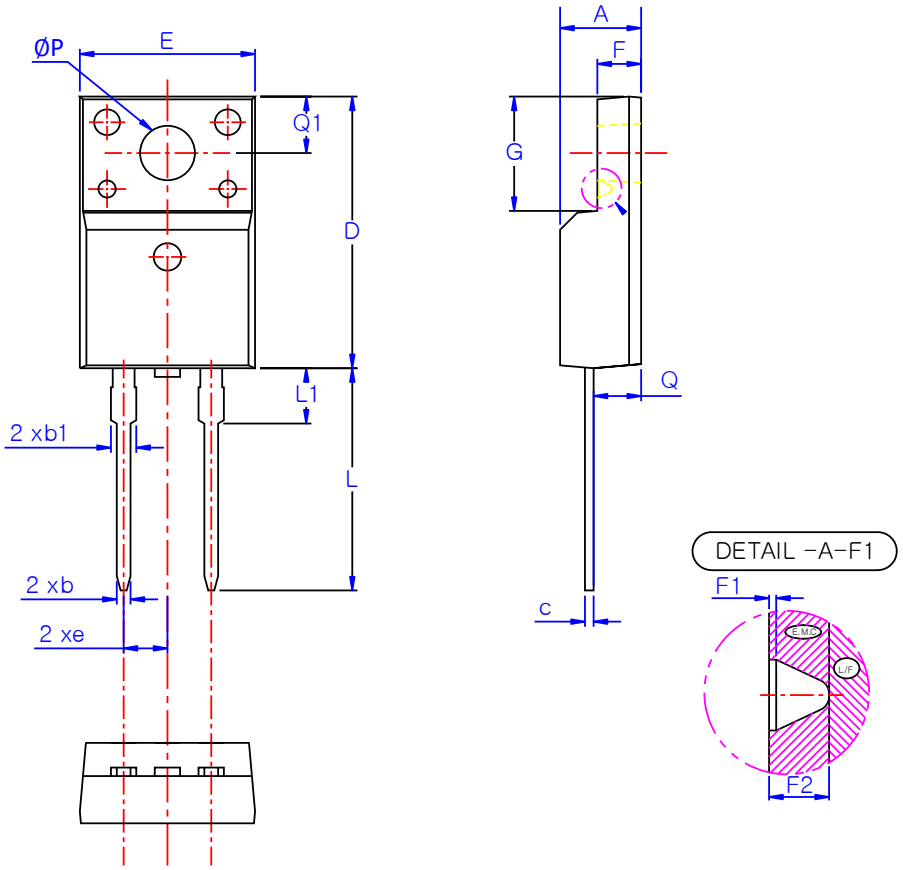


Figure 8. Transient Thermal Response Curve



Package Outlines
TO-220F-2L



SYMBOL	MIN	NOM	MAX
A	4.50	4.70	4.90
b	0.70	0.80	0.90
b1	1.33	1.40	1.47
c	0.45	0.50	0.60
D	15.67	15.87	16.07
E	9.96	10.16	10.36
e		2.54 BSC	
F	2.34	2.54	2.74
		(0.10)	
F2		(0.84)	
G	6.48	6.68	6.88
L	12.78	12.98	13.18
L1	3.03	3.23	3.43
Q	2.56	2.76	2.96
Q1	3.10	3.30	3.50
ØP	3.08	3.18	3.28

NOTE

1. THESE DIMENSIONS DO NOT INCLUDE PROTRUSIONS OF THE MOLD.
2. THE "( )" MARK IS THE REFERENCE.

Important Notice

Elevation reserves the right to modify, improve, and terminate its products, services, documentations, etc. without advance notice. Customers are encouraged to contact Elevation sales representatives to get the latest product information.

Without proper legal authorization, Elevation products shall not be used for medical or military applications. Elevation does not assume any liability of personal or property damages of any kind due to such applications.