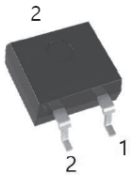
CSR020-065X3

SiC SCHOTTKY DIODE TYPE 20A

Features

- Low reverse current
- Good surge current capability
- No reverse recovery current
- Halogen Free, and RoHS Compliant
- System efficiency improvement over Si diodes
- Suitable for high power application
- V_{DC} 650 V
- I_F (T_C=25 / 147 °C) 50A/20A

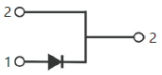
TO-263-2L

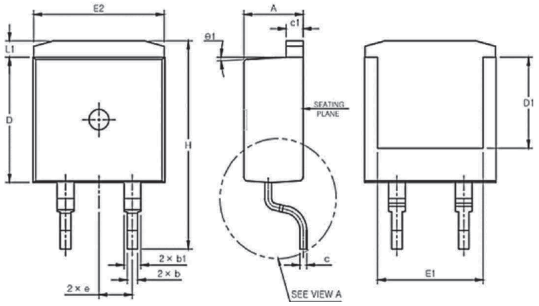


Package Dimensions

Benefits

- Higher system level efficiency
- Increase system power density
- Reduction of heat sink requirements
- Parallel devices without thermal runaway





Applications

- Switch mode power supplies (SMPS)
- Server/telecom power supplies
- Industrial power supplies
- Solar
- UPS

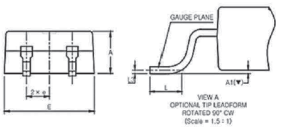
Maximum Ratings

Operating Junction Temperature : -55℃ to +175℃

Storage Temperature : -55℃ to +150℃

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSR020-065X3	650V	650V

Maximum Rating	Symbol	Conditions	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	T_J=25 °C	650	V
Continuous forward current	I_F	T_C=25 °C	50	A
		T_C=138 °C	20	
Non-repetitive forward surge current	I_{FSM}	T_C=25 °C	97	
Power Dissipation	P_D	T_C=25 °C	150	W



Unit : mm

Symbol	Min	Max
A	4.30	4.70
A1(▼)	0.00	0.25
b	0.70	0.90
b1	1.17	1.37
c	0.45	0.60
c1	1.25	1.40
D	9.00	9.40
D1	9.00	9.40
E	9.80	10.20
E1	7.80	8.20
E2	9.70	10.10
e	2.54 BSC	
H	15.00	15.60
L	2.00	2.60
L1	1.00	1.40
L3	0.254 BSC	
θ1	(3°)	

NOTE
1. THESE DIMENSIONS DO NOT INCLUDE PROTRUSIONS OF TH
2. THE "( )" MARK IS THE REFERENCE
3. COPLANARITY : MAX 0.10mm

Electrical Characteristics, at T_J =25 °C, unless otherwise specified.

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		650	-	-	V
Diode forward voltage	V_F	I_F =20A, T_J =25°C	-	1.3	1.6	
		I_F =20A, T_J =175°C	-	1.45	-	
Reverse current	I_R	V_R =650V, T_J =25°C	-	-	100	μA
		V_R =650V, T_J =175°C	-	-	300	

AC Characteristics

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_C	V_R=400V	-	77	-	nC
Total capacitance	C	V_R=1V, f=100 kHz	-	1208	-	pF
		V_R=400V, f=100 kHz	-	113	-	

Thermal Characteristics

Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	1.0	°C/W

Typical Device Performance

Fig.1 Typical Forward Characteristics

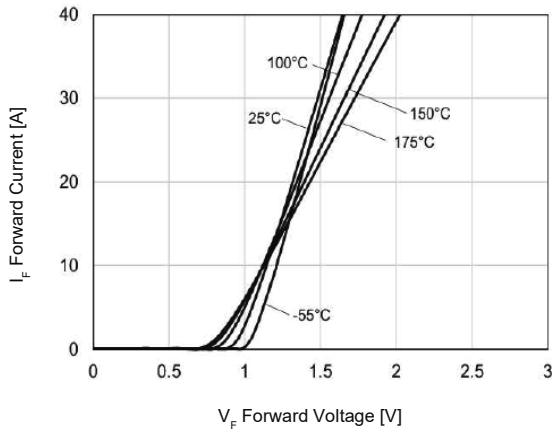


Fig.2 Typical Reverse Current as Function of Reverse Voltage

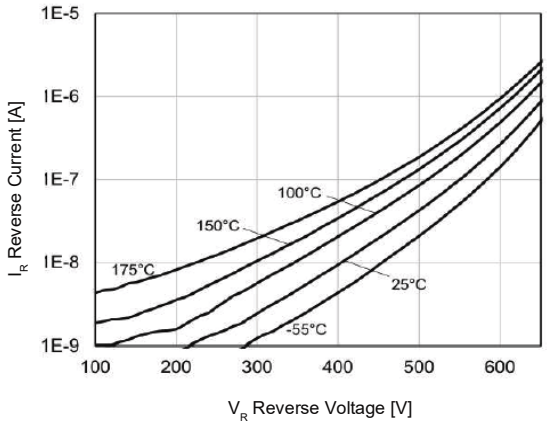


Fig.3 Diode Forward Current as Function of Temperature

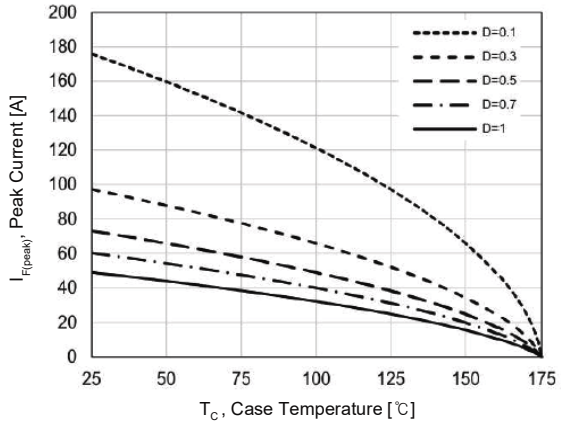


Fig.4 Typical Capacitance as Function of Reverse Voltage

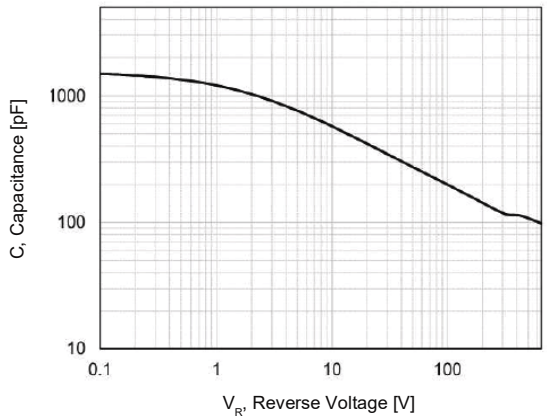


Fig.5 Typical capacitive charge

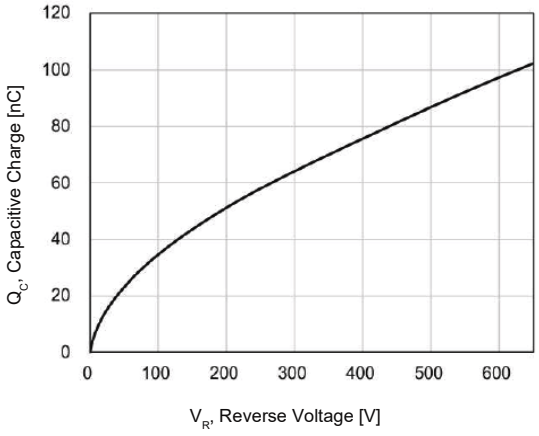
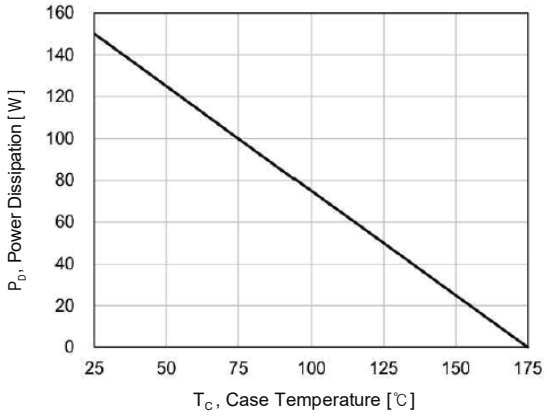
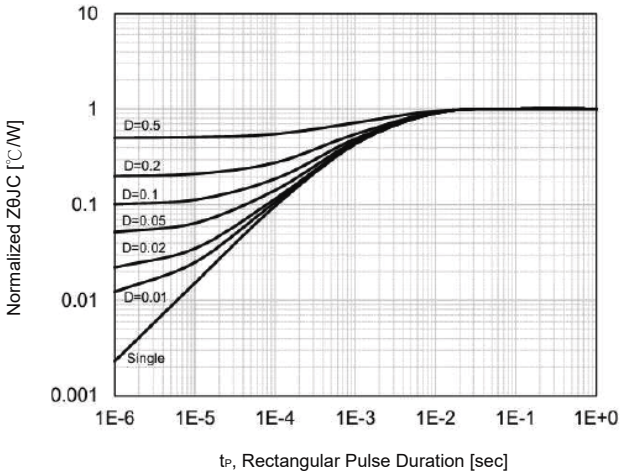


Fig.6 Power Dissipation as Function of Case Temperature



Typical Device Performance

Fig.7 Transient Thermal impedance



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