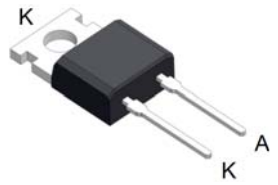
CSR010-065C3

SiC SCHOTTKY DIODE TYPE 10A

Features

- Low conduction and switching loss
- Zero reverse recovery
- High surge current capability
- Positive temperature coefficient device
- RoHS compliant and halogen free
- Temperature independent switching behavior
- Suitable for high power application
- V_{DC} 650 V
- I_F (T_C=25 / 158 °C) 34A/10A

TO-220-2L Package



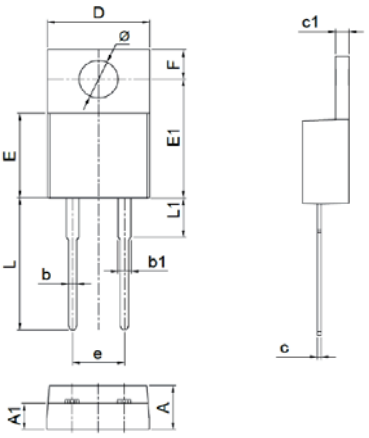
Benefits

- Increase parallel device convenience
- Enable high temperature application
- Realize compact and lightweight systems
- Allow high frequency operation
- Higher system efficiency
- High reliability

Applications

- Switching mode power supply
- PFC
- UPS
- Motor drives
- Flywheel diode in power inverters
- Solar/Wind renewable energy

Package Dimensions



Maximum Ratings

Operating Junction Temperature : -55℃ to +175℃

Storage Temperature : -55℃ to +150℃

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSR010-065C3	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	34	A
		T_C=125 °C	20	
		T_C=158°C	10	
Non-repetitive forward surge current	I_{FSM}	T_C=25 °C	80	
Power Dissipation	P_D	T_C=25 °C	93	W

Unit : mm

Symbol	Min	Max
A	4.30	4.70
A1	2.52	2.82
b	0.71	0.91
b1	1.17	1.37
c	0.30	0.50
c1	1.17	1.37
D	9.90	10.20
E	8.50	8.90
E1	12.00	12.50
e	4.88	5.26
F	2.60	2.80
L	13.00	14.00
L1	3.80	4.20
Φ	3.75	3.95

Electrical Characteristics, at T_C =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 =10A, T_C =25°C	-	1.3	1.5	
		I_F =10A, T_C =175°C	-	1.5	-	
Reverse current	I_R	V_R =650V, T_C =25°C	-	5	50	μA
		V_R =650V, T_C =175°C	-	38	200	

AC Characteristics

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_C	V_R=400V	-	27	-	nC
Total capacitance	C	V_R=0V, f=1 MHz	-	561	-	pF
		V_R=400V, f=1 MHz	-	43	-	

Thermal Characteristics

Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	1.6	°C/W

Typical Device Performance

Fig.1 Typical Forward Characteristics

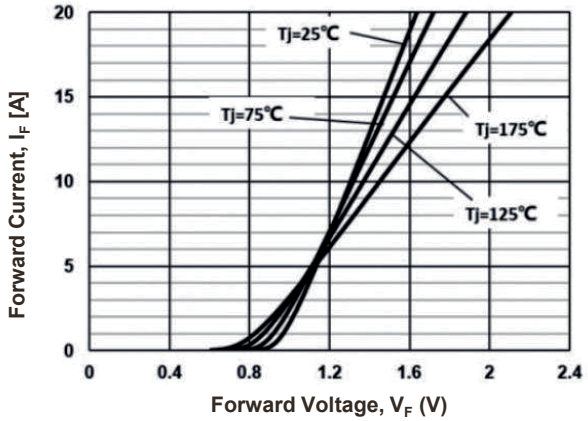


Fig.2 Typical Reverse Characteristics

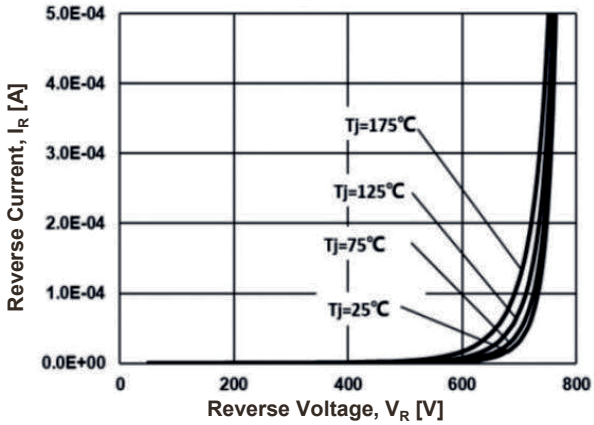


Fig.3 Typical Junction Capacitance vs. Reverse Voltage

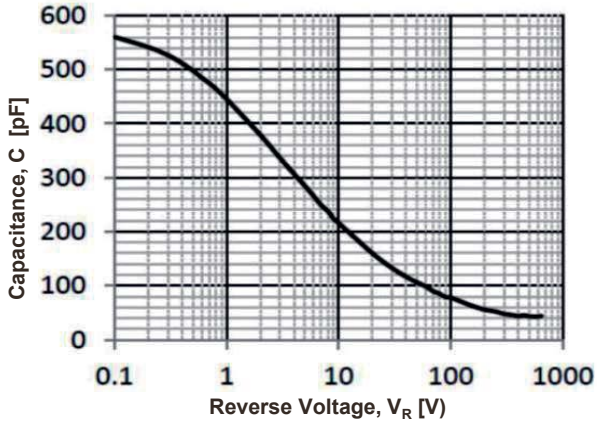


Fig.4 Diode Forward Current as Function of Temperature

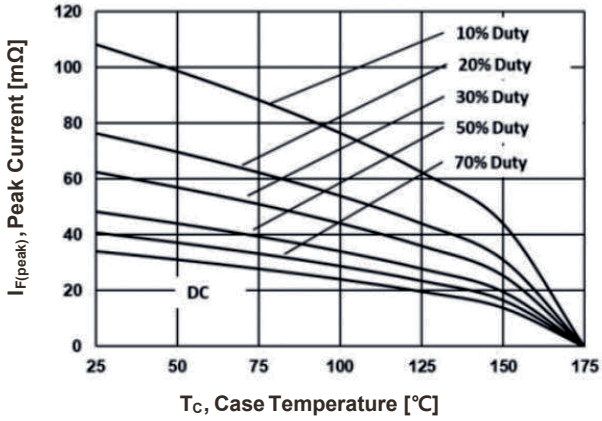


Fig.5 Typical Reverse Charge as Function of Reverse Voltage

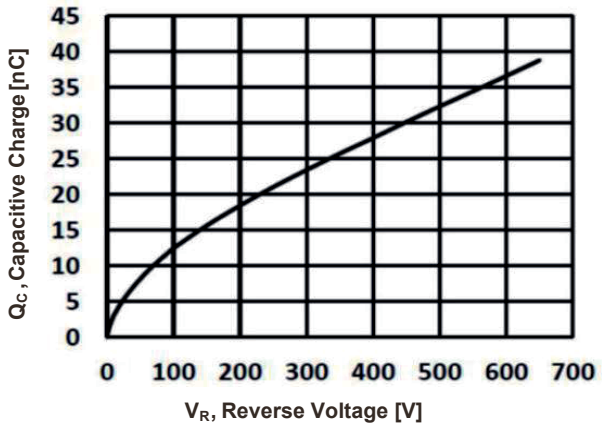
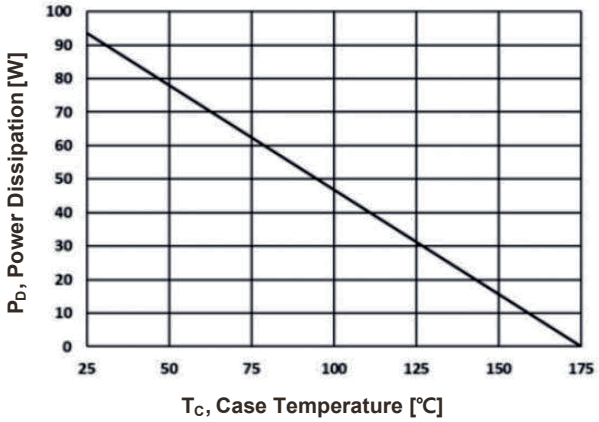
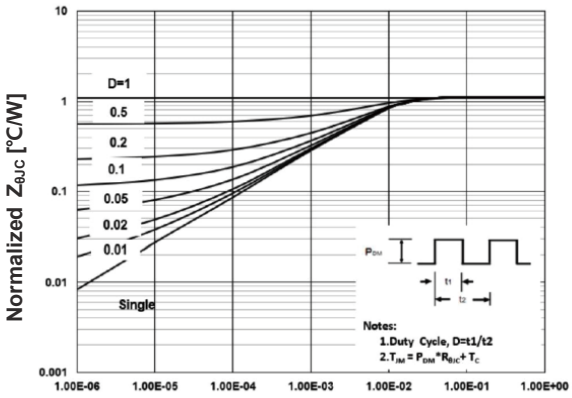


Fig.6 Power Dissipation as Function of Case Temperature



Typical Device Performance

Fig.7 Transient Thermal impedance



t_P, Rectangular Pulse Duration [sec]

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