

**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
- $I_F$  ( $T_C=25 / 158\text{ }^\circ\text{C}$ ) 34A/10A

**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

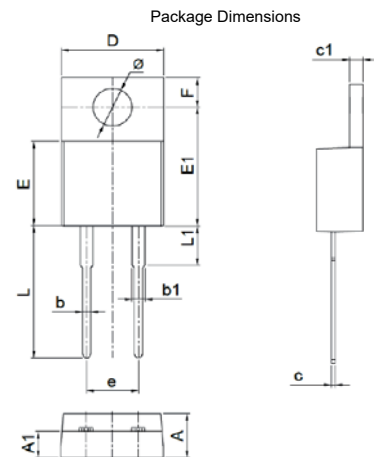
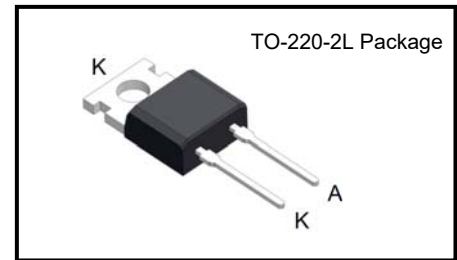
**Maximum Ratings**

Operating Junction Temperature :  $-55\text{ }^\circ\text{C}$  to  $+175\text{ }^\circ\text{C}$

Storage Temperature :  $-55\text{ }^\circ\text{C}$  to  $+150\text{ }^\circ\text{C}$

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	$V_{RRM}$	$T_J=25\text{ }^\circ\text{C}$	650	V
Continuous forward current	$I_F$	$T_C=25\text{ }^\circ\text{C}$	34	A
		$T_C=125\text{ }^\circ\text{C}$	20	
		$T_C=158\text{ }^\circ\text{C}$	10	
Non-repetitive forward surge current	$I_{FSM}$	$T_C=25\text{ }^\circ\text{C}$	80	
Power Dissipation	$P_D$	$T_C=25\text{ }^\circ\text{C}$	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
$\Phi$	3.75	3.95

**Electrical Characteristics**, at  $T_C=25\text{ }^\circ\text{C}$ , unless otherwise specified.

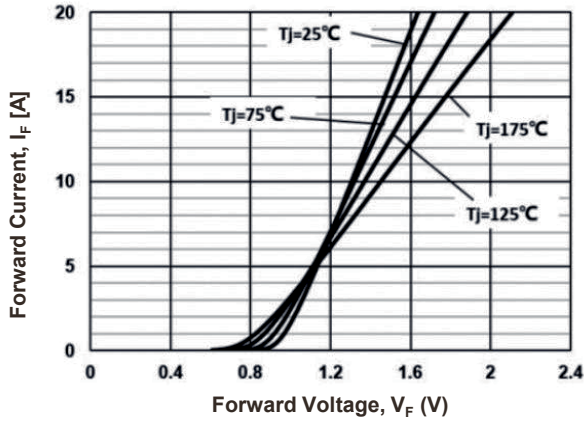
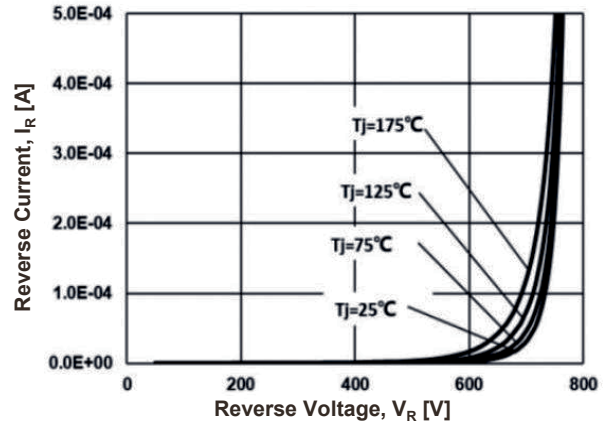
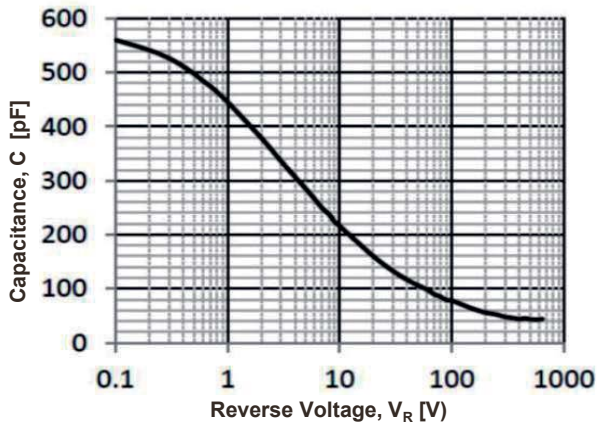
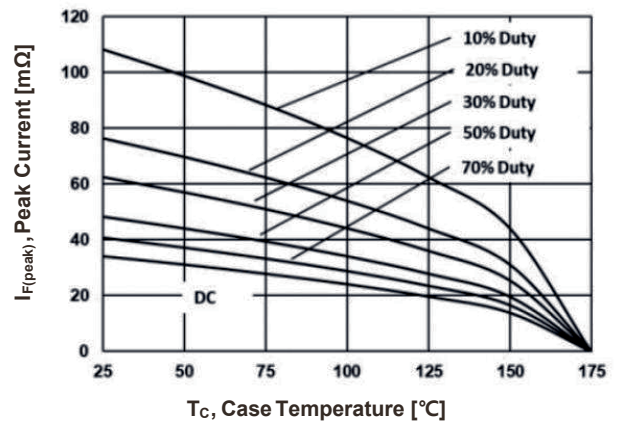
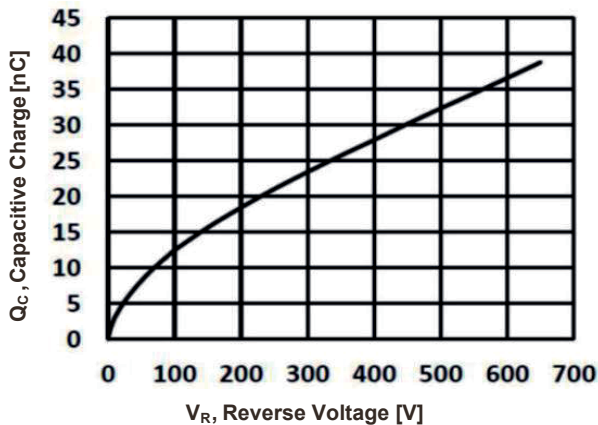
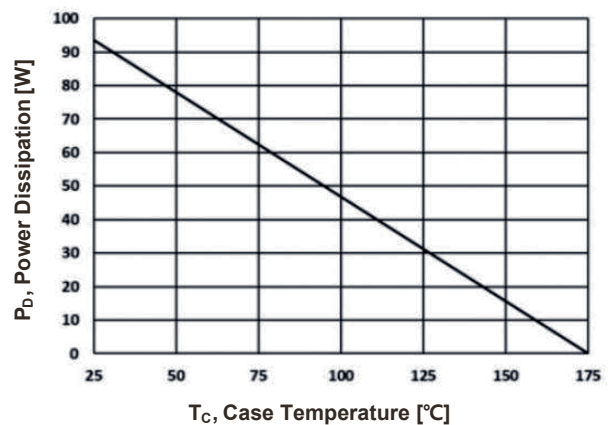
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	$V_{DC}$		650	-	-	V
Diode forward voltage	$V_F$	$I_F=10\text{A}, T_J=25^\circ\text{C}$	-	1.3	1.5	
		$I_F=10\text{A}, T_J=175^\circ\text{C}$	-	1.5	-	
Reverse current	$I_R$	$V_R=650\text{V}, T_J=25^\circ\text{C}$	-	5	50	$\mu\text{A}$
		$V_R=650\text{V}, T_J=175^\circ\text{C}$	-	38	200	

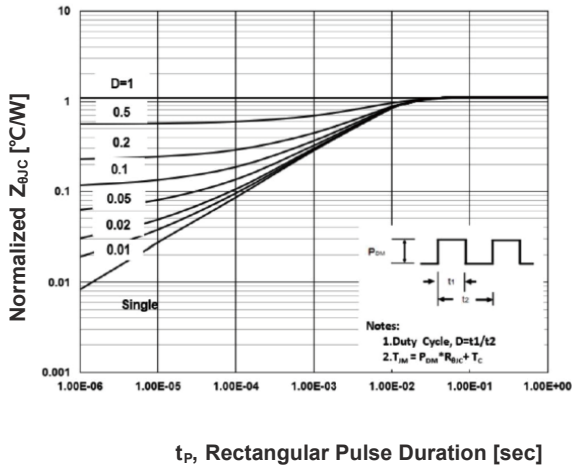
**AC Characteristics**

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

**Thermal Characteristics**

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

**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**


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