

SiC SCHOTTKY DIODE TYPE 6A

Features

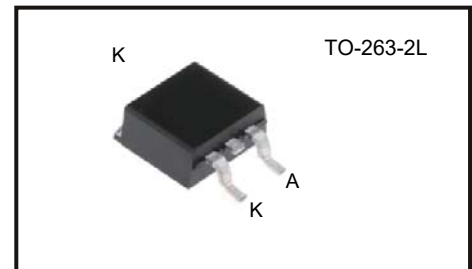
- Low conduction and switching loss
- Zero reverse recovery
- High surge current capability
- Positive temperature coefficient device
- RoHS compliant and halogen free
- Temperature independent switching behavior
- Suitable for high power application
- V_{DC} 650 V
- I_F ($T_C=135/156\text{ }^\circ\text{C}$) 11A/6A

Benefits

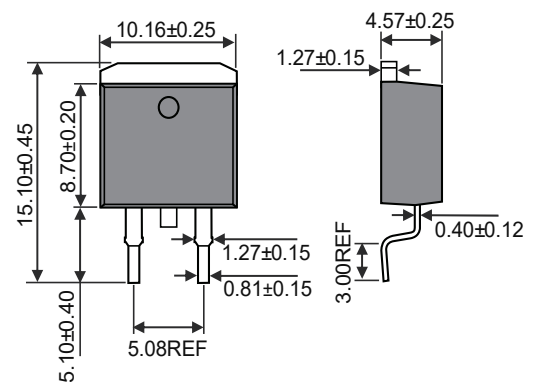
- Increase parallel device convenience
- Enable high temperature application
- Realize compact and lightweight systems
- Allow high frequency operation
- Higher system efficiency
- High reliability

Applications

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



Package Dimensions



Unit:mm

Maximum Ratings

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

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

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSR006-065T2	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	$T_C=25\text{ }^\circ\text{C}$	25	A
		$T_C=135\text{ }^\circ\text{C}$	11	
		$T_C=156\text{ }^\circ\text{C}$	6	
Non-repetitive forward surge current	I_{FSM}	$T_C=25\text{ }^\circ\text{C}$, $t_p=8.3\text{ ms}$ Half sine pulse	45	
Power Dissipation	P_D	$T_C=25\text{ }^\circ\text{C}$	83	W

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

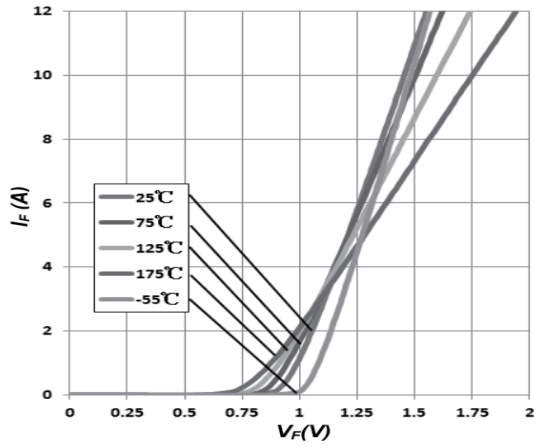
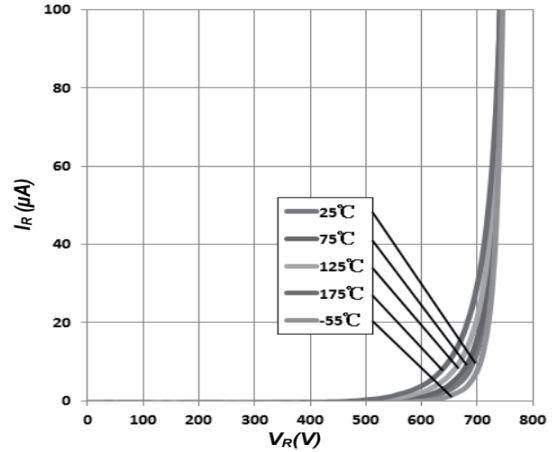
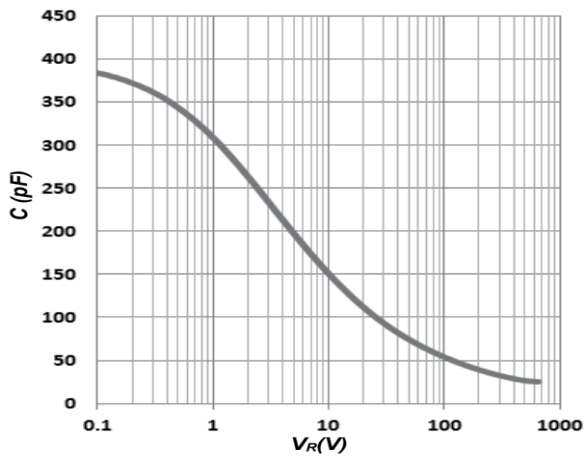
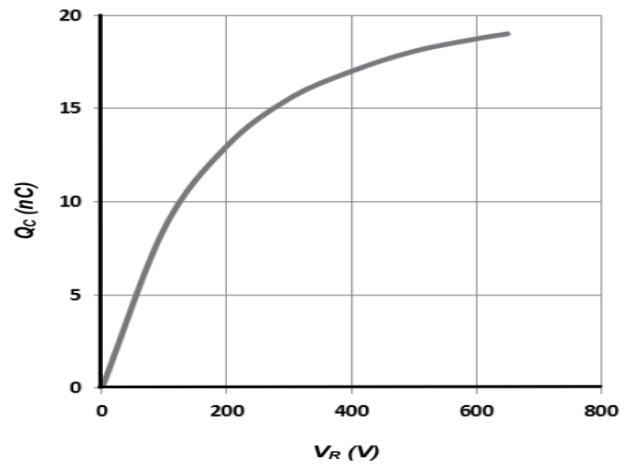
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		650	-	-	V
Diode forward voltage	V_F	$I_F = 6\text{A}, T_C = 25^\circ\text{C}$	-	1.3	1.5	
		$I_F = 6\text{A}, T_C = 175^\circ\text{C}$	-	1.38	-	
Reverse current	I_R	$V_R = 650\text{V}, T_C = 25^\circ\text{C}$	-	4	50	μA
		$V_R = 650\text{V}, T_C = 175^\circ\text{C}$	-	20	-	

AC Characteristics

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_C	$I_F = 6\text{A}, dI/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_C = 25^\circ\text{C}$	-	17	-	nC
Total capacitance	C	$V_R = 1\text{V}, f = 1\text{ MHz}, T_C = 25^\circ\text{C}$	-	305	-	pF
		$V_R = 200\text{V}, f = 1\text{ MHz}, T_C = 25^\circ\text{C}$	-	39	-	
		$V_R = 400\text{V}, f = 1\text{ MHz}, T_C = 25^\circ\text{C}$	-	28	-	

Thermal Characteristics

Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	1.8	$^\circ\text{C}/\text{W}$

Typical Device Performance
Fig.1 Forward Characteristics

Fig.2 Reverse Characteristics

Fig.3 Capacitance vs. Reverse Voltage

Fig.4 Capacitance Charge vs. Reverse Voltage


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