

## SiC SCHOTTKY DIODE TYPE 10A

### Features

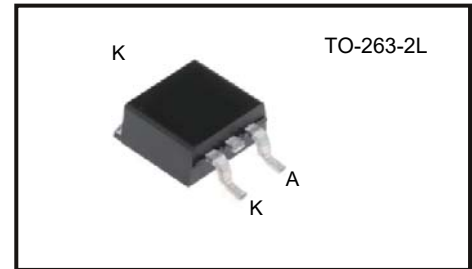
- Low conduction and switching loss
- Zero reverse recovery
- High surge current capability
- Positive temperature coefficient device
- RoHS compliant and halogen free
- Temperature independent switching behavior
- Suitable for high power application
- $V_{DC}$  650 V
- $I_F$  ( $T_C=135/158\text{ }^\circ\text{C}$ ) 19A/10A

### Benefits

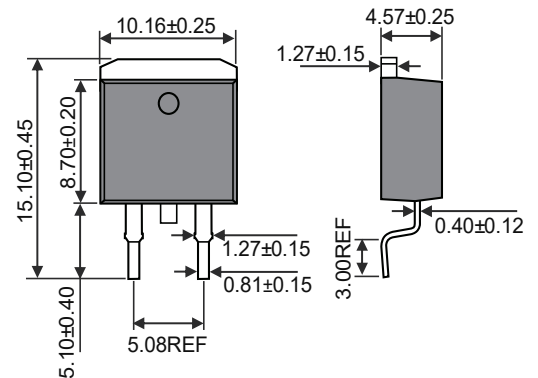
- Increase parallel device convenience
- Enable high temperature application
- Realize compact and lightweight systems
- Allow high frequency operation
- Higher system efficiency
- High reliability

### Applications

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



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
CSR010-065T2	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	$I_F$	$T_C=25\text{ }^\circ\text{C}$	38	A
		$T_C=135\text{ }^\circ\text{C}$	19	
		$T_C=158\text{ }^\circ\text{C}$	10	
Non-repetitive forward surge current	$I_{FSM}$	$T_C=25\text{ }^\circ\text{C}$ , $t_p=8.3\text{ ms}$ Half sine pulse	80	
Power Dissipation	$P_D$	$T_C=25\text{ }^\circ\text{C}$	150	W

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

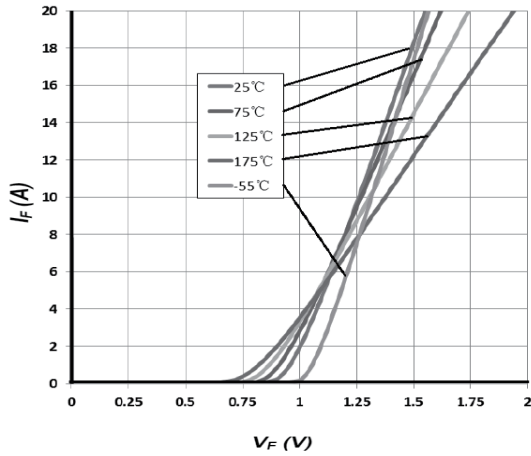
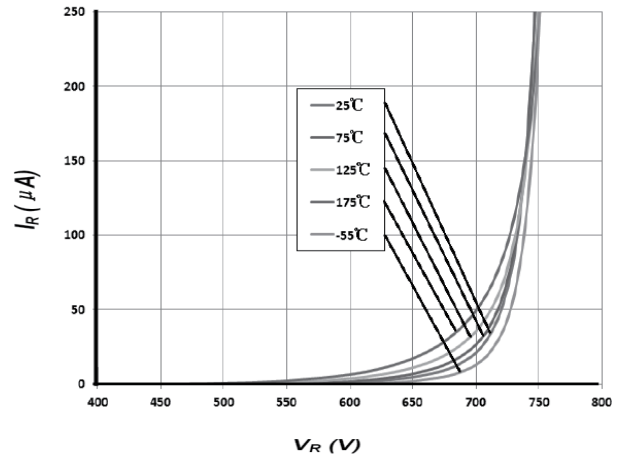
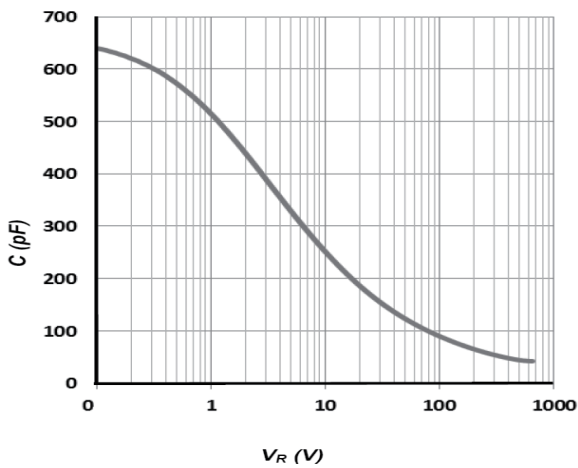
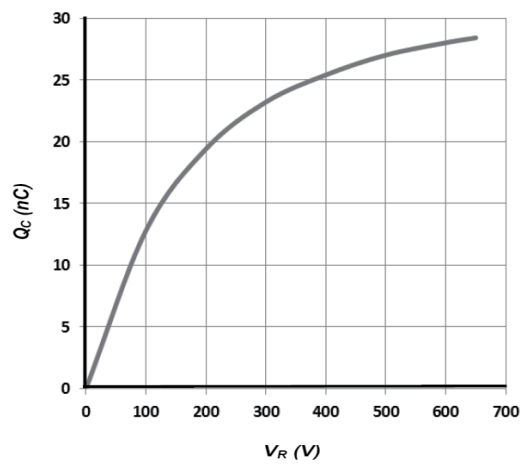
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	$V_{DC}$		650	-	-	V
Diode forward voltage	$V_F$	$I_F = 10\text{A}, T_C = 25^\circ\text{C}$	-	1.27	1.50	
		$I_F = 10\text{A}, T_C = 175^\circ\text{C}$	-	1.38	-	
Reverse current	$I_R$	$V_R = 650\text{V}, T_C = 25^\circ\text{C}$	-	6	50	$\mu\text{A}$
		$V_R = 650\text{V}, T_C = 175^\circ\text{C}$	-	25	-	

### AC Characteristics

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	$Q_C$	$I_F = 10\text{A}, dI/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_C = 25^\circ\text{C}$	-	25	-	nC
Total capacitance	C	$V_R = 1\text{V}, f = 1\text{ MHz}, T_C = 25^\circ\text{C}$	-	510	-	pF
		$V_R = 200\text{V}, f = 1\text{ MHz}, T_C = 25^\circ\text{C}$	-	66	-	
		$V_R = 400\text{V}, f = 1\text{ MHz}, T_C = 25^\circ\text{C}$	-	48	-	

### Thermal Characteristics

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

**Typical Device Performance**
**Fig.1 Forward Characteristics**

**Fig.2 Reverse Characteristics**

**Fig.3 Capacitance vs. Reverse Voltage**

**Fig.4 Capacitance Charge vs. Reverse Voltage**


## Disclaimer

DACO Semiconductor reserves the right to make modifications, enhancements, improvements, corrections, or other changes to this document and any product described herein without prior notice. For the most up-to-date version, please visit our website.

DACO Semiconductor makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does DACO Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any liability, including without limitation special, consequential or incidental damages.

Purchasers are responsible for its products and applications using DACO Semiconductor products, including compliance with all laws, regulations, and safety requirements or standards, regardless of any support or application information provided by DACO Semiconductor. "Typical" parameters that may be provided in DACO Semiconductor datasheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typical" must be validated for each customer application by the customer's technical experts.

DACO Semiconductor products are not designed, authorized, or warranted to be suitable for use in life support, life-critical or safety-critical systems, or equipment, nor in applications where failure or malfunction of DACO Semiconductor's product can reasonably be expected to result in personal injury, death or severe property or environmental damage. DACO Semiconductor accepts no liability for the inclusion and/or use of DACO Semiconductor's products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Purchasers who buy or use DACO Semiconductor products for any unintended or unauthorized applications are required to indemnify and absolve DACO Semiconductor, its suppliers, and distributors from any claims, costs, damages, expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that DACO Semiconductor was negligent regarding the design or manufacture of the part.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage and retrieval system, or otherwise, without the prior written permission of DACO Semiconductor Co., Ltd.