

10A SiC Schottky Diode

### Main Product Characteristics

I <sub>F(AV)</sub>	10A, T <sub>c</sub> =76°C			
$V_{RRM}$	600V			
T <sub>J</sub>	175°C			
V <sub>F(Typ)</sub> 25°C	1.5V			

■ Maximum ratings and electrical characteristics

#### ■ Features

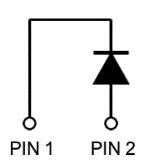
- Low Conduction and Switching Loss
- Positive Temperature Coefficient on V<sub>F</sub>
- Temperature Independent Switching Behavior
- Fast Reverse Recovery
- High Surge Current Capability
- Pb-free lead plating

#### ■ Benefits

- Higher System Efficiency
- Parallel Device Convenience
- High Temperature Application
- High Frequency Operation
- Hard Switching & High Reliability
- Environmental Protection

#### ■ Outline





Package ITO-220AC

Inner Circuit

# Applications

- SMPS
- PFC
- Solar/Wind Renewable Energy
- Power Inverters
- Motor Drives

#### ability

	0 1111			0101000			
Parameter	Conditions	Symbol			UNIT		
Peak Repetitive Reverse Voltage	T <sub>J</sub> =25°C	V <sub>RRM</sub>	600				
Peak Reverse Surge Voltage	T <sub>J</sub> =25°C	V <sub>RSM</sub>	600			V	
DC Blocking Voltage	T <sub>J</sub> =25°C	$V_{R}$	600				
Continuous Forward Current	T <sub>c</sub> =25°C		13			А	
	T <sub>c</sub> =80°C	I <sub>F</sub>	10				
	T <sub>c</sub> =135°C		5				
	T <sub>c</sub> =25°C,T <sub>p</sub> =10ms,Half Sine-Wave		76			А	
Non-Repetitive Peak Forward surge current	T <sub>c</sub> =125°C,T <sub>p</sub> =10ms,Half Sine-Wave	I <sub>FSM</sub>	65				
	T <sub>c</sub> =25°C,T <sub>p</sub> =10us,Pulse		371				
	T <sub>c</sub> =25°C,T <sub>p</sub> =10ms,Half Sine-Wave,D=0.1		57				
Repetitive Peak Forward surge current	T <sub>o</sub> =125°C,T <sub>p</sub> =10ms,Half Sine-Wave,D=0.1	I <sub>FRM</sub>		48	Α		
5 5	T <sub>c</sub> =25°C	_	27.5			W	
Power Dissipation	T <sub>c</sub> =125°C	P <sub>D</sub>	9				
		TJ	175		°C		
Operation Junction and Storage Temperature		T <sub>stg</sub>	-55 to 175				
Thermal Resistance Junction to Case		R <sub>eJC</sub>	5.45		°C/W		
Parameter	Conditions	Symbol MIN. TYP. MAX.		MAX.	UNIT		
DC Blocking Voltage	I <sub>R</sub> =100uA,T <sub>J</sub> =25°C	V <sub>DC</sub>		>650		V	
Forward Voltage	I <sub>F</sub> =10A,T <sub>J</sub> =25°C	.,		1.5	1.8	V	
	I <sub>F</sub> =10A,T <sub>J</sub> =175°C	V <sub>F</sub>		1.8	2.2		
Reverse Current	V <sub>R</sub> =600V,T <sub>J</sub> =25°C			<1	50	uA	
	V <sub>R</sub> =600V,T <sub>J</sub> =175°C	I <sub>R</sub>		15	160		
Total Capacitive Charge	$I_F=10A,dI/dt=300A/us, V_R=400V,T_J=25^{\circ}C$	Qc	Q <sub>c</sub> 19			nC	
	V <sub>R</sub> =1V,T <sub>J</sub> =25°C,f=1MHz			398			
Total Capacitive	V <sub>R</sub> =200V,T <sub>J</sub> =25°C,f=1MHz	С		53		pF	
	V <sub>R</sub> =400V,T <sub>J</sub> =25°C,f=1MHz	1		52			

Document ID : DS-21K028 Revised Date : 2016/09/14

Revision : C



10A SiC Schottky Diode

■ Rating and characteristic curves

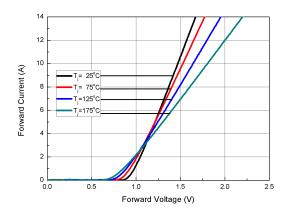


Fig. 1 Forward Characteristics

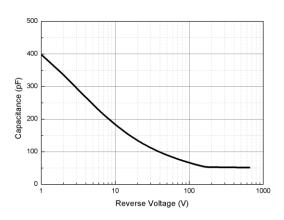


Fig. 3 Capacitance vs. Reverse Voltage

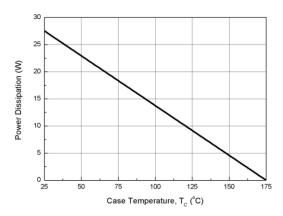


Fig. 5 Power Derating

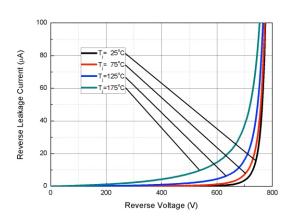


Fig. 2 Reverse Characteristics

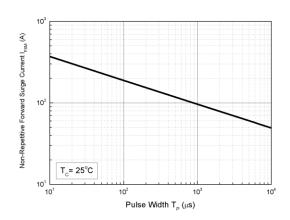


Fig. 4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

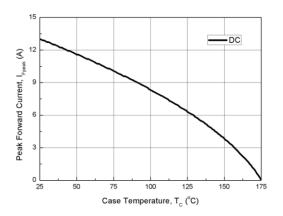


Fig. 6 Current Derating

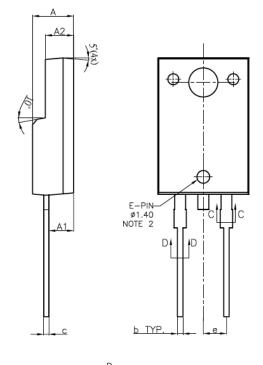
Document ID : DS-21K028 Revised Date : 2016/09/14

Revision : C



10A SiC Schottky Diode

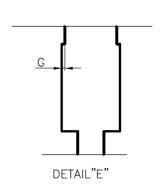
# ■ Outline

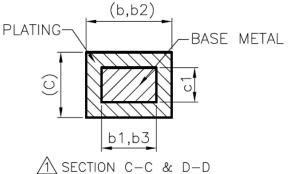


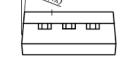
0,4,00,0	DIMENSIONS IN MILLIMETERS				DIMENSIONS IN INCHES			
SYMBOLS	MIN.	NOM.	MAX.		MIN.	NOM.	MAX.	
А	4.20	4.50	4.80		0.165	0.177	0.189	
A1	2.50		2.90		0.098		0.114	
A2	2.90	3.10	3.30		0.114	0.122	0.130	
b	0.30		0.93		0.012		0.037	
b1	0.30	0.60	0.90		0.012	0.024	0.035	
b2	1.00		1.43		0.039		0.056	
b3	1.00	1.20	1.40		0.039	0.047	0.055	
С	0.50		0.73		0.020		0.029	
c1	0.50	0.60	0.70		0.020	0.024	0.028	
D	9.90	10.00	10.10		0.390	0.394	0.398	
E	14.80	15.10	15.40		0.583	0.594	0.606	
E1	8.40	8.50	8.60		0.331	0.335	0.339	
е		2.55 BSC				0.100 BSC		
e1		5.10 BSC				0.200 BSC		
F	2.55	2.70	2.85		0.100	0.106	0.112	
G	0.00		0.127		0.000		0.005	
L	13.00	13.40	13.80		0.512	0.528	0.543	
L1	3.45	3.60	3.75		0.136	0.142	0.148	
L2			1.60				0.063	
øΡ	2.90	3.20	3.50		0.114	0.126	0.138	



1.All dimension are in mm[inch]. 2.Tolerance: ±0.004inch.





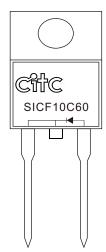


Document ID: DS-21K028 Revised Date: 2016/09/14 Revision: C



10A SiC Schottky Diode

## ■ Marking information



SICF10C60: Product type marking code

CTTC Logo

## ■ Ordering/Packing infirmation

	Part number	Case	Q'TY/Tube (PCS)	Q'TY Box(PCS)	Q'TY/Carton(PCS)
Halogen Free	SICF10C60	ITO-220AC	50	4,000	8,000

Notes: 1. For packaging details, please reference our website at http://www.citcorp.com.tw/tchinese/products/index.php

- CITC reserves the right to make changes to this document and its products and specifications at any time without notice.
- Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
- CITC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does CITC assume any liability for application assistance or customer product design.
- CITC does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.
- No license is granted by implication or otherwise under any intellectual property rights of CITC.
- CITC products are not authorized for use as critical components in life support devices or systems without express written approval of CITC.

http://www.citcorp.com.tw/

Tel:886-3-5600628

Fax:886-3-5600636

Add:Rm. 3, 2F., No.32, Taiyuan St., Zhubei City, Hsinchu County 302, Taiwan (R.O.C.)

Document ID : DS-21K028 Revised Date : 2016/09/14

Revision : C