

SiC05A120T

SILICON CARBIDE SCHOTTKY DIODE

Voltage **1200 V** **Current** **5 A**

Features

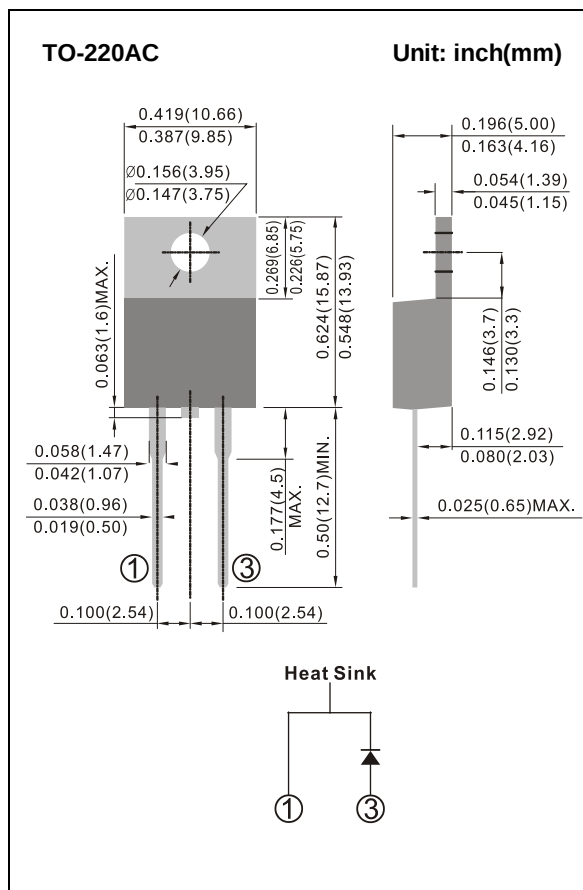
- Temperature Independent Switching Behavior
- Low Conduction and Switching Loss
- High Surge Current Capability
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery

Mechanical Data

- Case: Molded plastic, TO-220AC
- Marking: 05A120T

Benefits

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



Maximum Ratings

PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNITS
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	$T_J=25^{\circ}C$	1200	V
Maximum RMS Voltage	V_{RSM}	$T_J=25^{\circ}C$	1200	V
Maximum DC Blocking Voltage	V_R	$T_J=25^{\circ}C$	1200	V
Continuous Forward Current	$I_{F(AV)}$	$T_C=25^{\circ}C$	15	A
		$T_C=125^{\circ}C$	8	A
		$T_C=150^{\circ}C$	5	A
Repetitive Peak Forward Surge Current ($T_P=10mS$, Half Sine Wave, $D=0.1$)	I_{FRM}	$T_C=25^{\circ}C$	41	A
		$T_C=125^{\circ}C$	37	A



SiC05A120T

Maximum Ratings

PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNITS
Non-Repetitive Peak Forward Surge Current ($T_P=10\text{ms}$, Half Sine Wave)	I_{FSM}	$T_C=25^\circ\text{C}$	54	A
		$T_C=125^\circ\text{C}$	48	A
Non-Repetitive Peak Forward Surge Current ($T_P=10\mu\text{s}$, Pulse)		$T_C=25^\circ\text{C}$	330	A
Power Dissipation	P_D	$T_C=25^\circ\text{C}$	82	W
		$T_C=125^\circ\text{C}$	27	W
Operating Junction Temperature	T_J		175	$^\circ\text{C}$
Storage Temperature	T_{STG}		-55 to 175	$^\circ\text{C}$
Thermal Resistance Junction to Case	$R_{\theta JC}$		1.9	$^\circ\text{C/W}$

Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
DC Blocking Voltage	V_{DC}	$I_R=100\mu\text{A}$, $T_J=25^\circ\text{C}$	1200	-	-	V
Forward Voltage	V_F	$I_F=5\text{A}$, $T_J=25^\circ\text{C}$	-	1.6	1.8	V
		$I_F=5\text{A}$, $T_J=175^\circ\text{C}$	-	2.4	2.7	V
Reverse Current	I_R	$V_R=1200\text{V}$, $T_J=25^\circ\text{C}$	-	<1	100	μA
		$V_R=1200\text{V}$, $T_J=175^\circ\text{C}$	-	16	500	μA
Total Capacitive Charge	Q_C	$I_F=5\text{A}$, $di/dt=300\text{A}/\mu\text{s}$, $V_R=400\text{V}$, $T_J=25^\circ\text{C}$	-	14	-	nC
Total Capacitance	C	$V_R=1\text{V}$, $T_J=25^\circ\text{C}$, $f=1\text{MHz}$	-	250	-	pF
		$V_R=400\text{V}$, $T_J=25^\circ\text{C}$, $f=1\text{MHz}$	-	28	-	pF
		$V_R=800\text{V}$, $T_J=25^\circ\text{C}$, $f=1\text{MHz}$	-	24	-	pF

SiC05A120T

TYPICAL CHARACTERISTIC CURVES

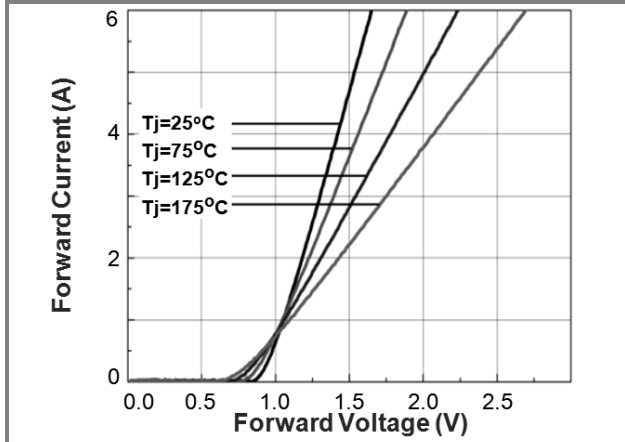


Fig.1 Forward Characteristics

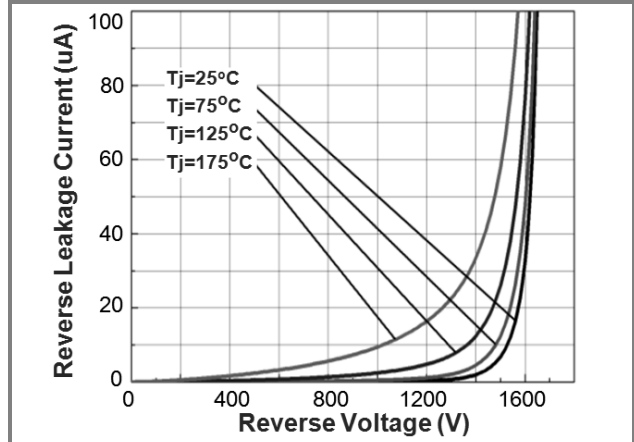


Fig.2 Reverse Characteristics

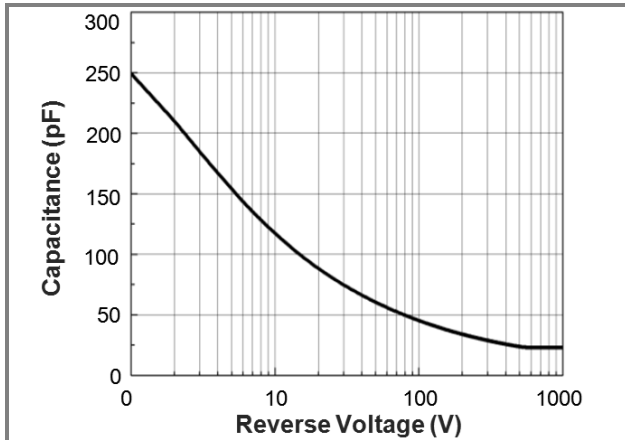


Fig.3 Capacitance vs. Reverse Voltage

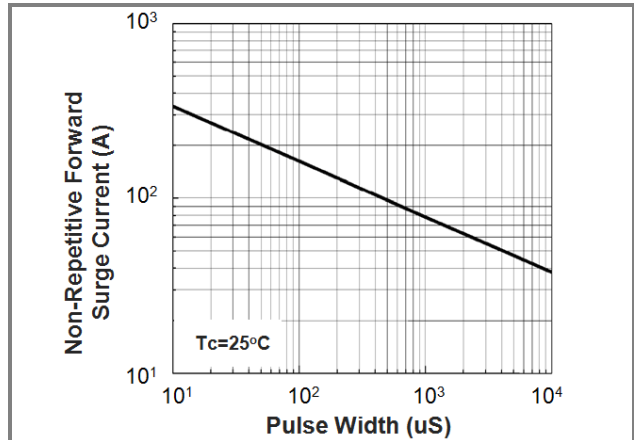


Fig.4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

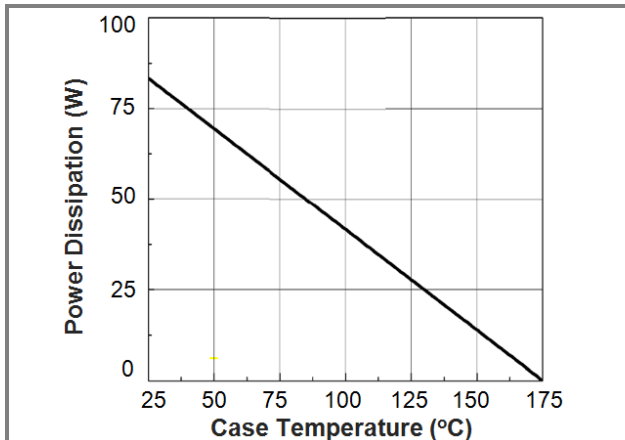


Fig.5 Power Derating

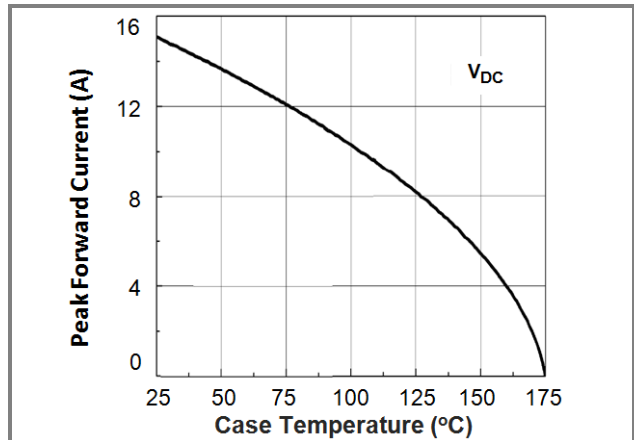


Fig.6 Current Derating



SiC05A120T

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SiC05A120T_TO_00001	TO-220AC	50pcs / Tube	05A120T	Halogen free



SiC05A120T

Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panjit:

[SIC05A120T_T0_00001](#)