SiC06A065NS

SILICON CARBIDE SCHOTTKY DIODE

Voltage	650 V	Current	6 A

Features

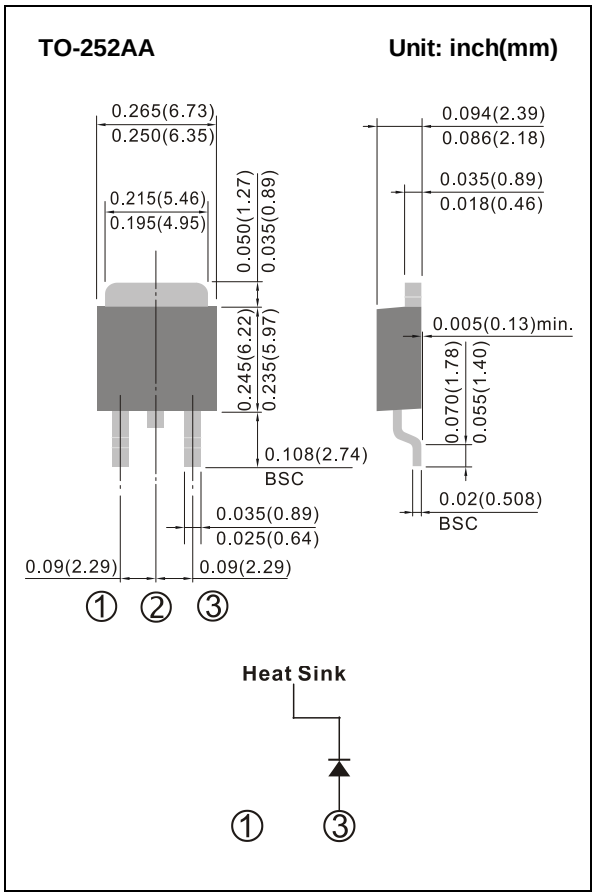
- Temperature Independent Switching Behavior
- Low Conduction and Switching Loss
- High Surge Current Capability
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery

Mechanical Data

- Case: Molded plastic, TO-252AA
- Marking: 06A065NS

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°C	650	V
Maximum RMS Voltage	V_{RSM}	T_J=25°C	650	V
Maximum DC Blocking Voltage	V_R	T_J=25°C	650	V
Continuous Forward Current	$I_{F(AV)}$	T_C=25°C	18	A
		T_C=125°C	8	A
		T_C=150°C	6	A
Repetitive Peak Forward Surge Current (T_P=10mS, Half Sine Wave, D=0.1)	I_{FRM}	T_C=25°C	42	A
		T_C=125°C	37	A

SiC06A065NS

Maximum Ratings

PARAMETER	SYMBOL	TEST CONDITIONS	VALUE	UNITS
Non-Repetitive Peak Forward Surge Current (T_P=10mS, Half Sine Wave)	I_{FSM}	T_C=25°C	50	A
		T_C=125°C	44	A
Non-Repetitive Peak Forward Surge Current (T_P=10uS, Pulse)		T_C=25°C	210	A
Power Dissipation	P_D	T_C=25°C	53	W
		T_C=125°C	17	W
Operating Junction Temperature	T_J		175	°C
Storage Temperature	T_{STG}		-55 to 175	°C
Thermal Resistance Junction to Case	$R_{\theta JC}$		2.8	°C/W

Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
DC Blacking Voltage	V_{DC}	I_R =100uA, T_J=25°C	650	770	-	V
Forward Voltage	V_F	I_F =6A, T_J=25°C	-	1.5	1.8	V
		I_F =6A, T_J=175°C	-	1.9	2.2	V
Reverse Current	I_R	V_R =650V, T_J=25°C	-	3	50	uA
		V_R =650V, T_J=175°C	-	17	190	uA
Total Capacitive Charge	Q_C	I_F =6A, di/dt=300A/uS, V_R =400V, T_J=25°C	-	12	-	nC
Total Capacitance	C	V_R =1V, T_J=25°C, f=1MHz	-	234	-	pF
		V_R =200V, T_J=25°C, f=1MHz	-	36	-	pF
		V_R =400V, T_J=25°C, f=1MHz	-	36	-	pF

SiC06A065NS

TYPICAL CHARACTERISTIC CURVES

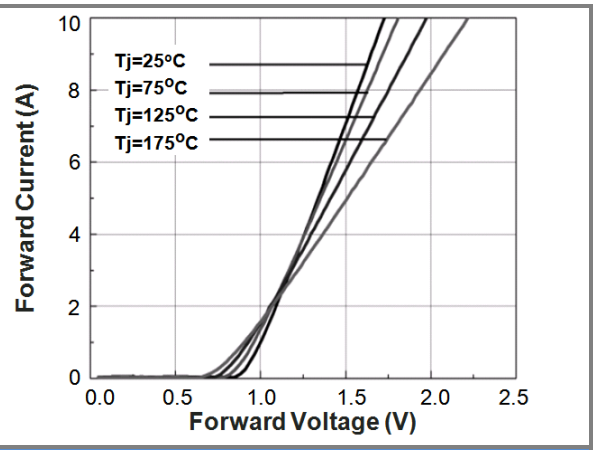


Fig.1 Forward Characteristics

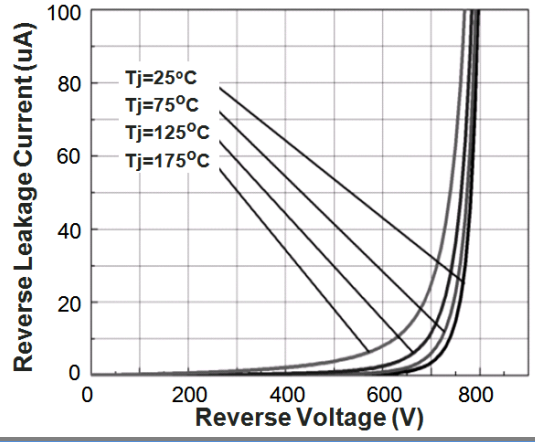


Fig.2 Reverse Characteristics

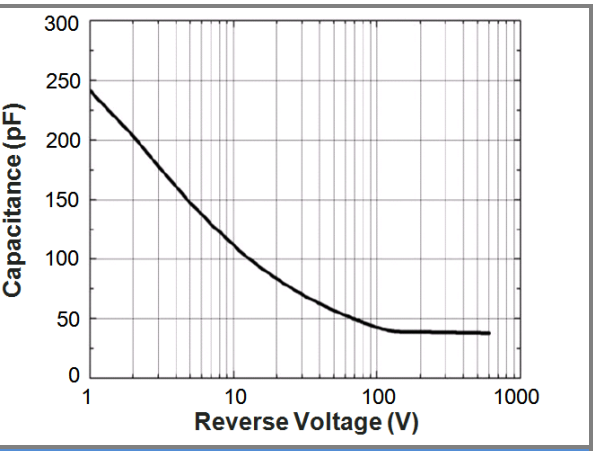


Fig.3 Capacitance vs. Reverse Voltage

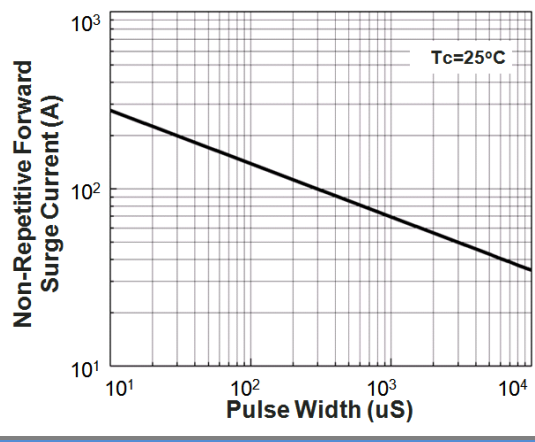


Fig.4 Non-Repetitive Peak Forward Surge Current
(Pulse Mode)

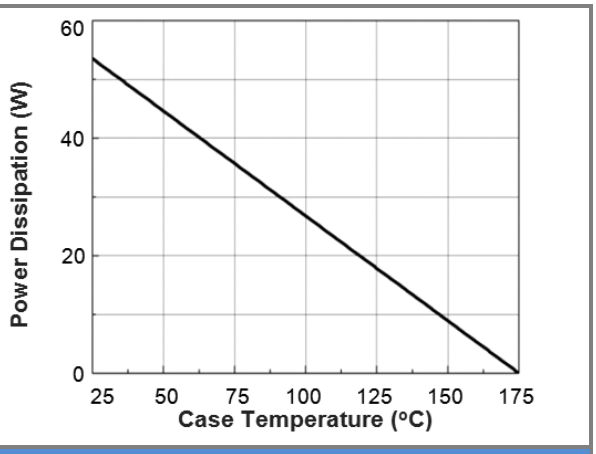


Fig.5 Power Derating

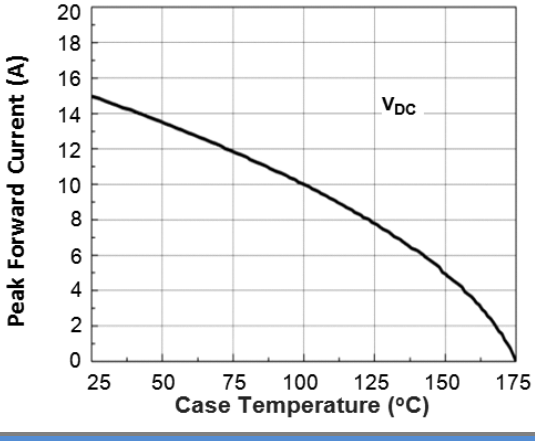


Fig.6 Current Derating

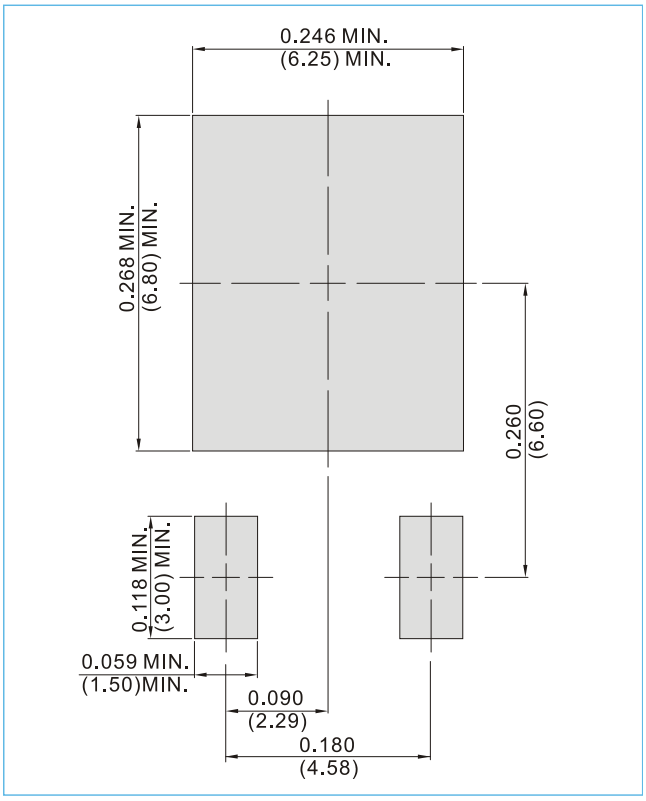
SiC06A065NS

Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SIC06A065NS_L2_00001	TO-252AA	3,000pcs / 13” reel	06A065NS	Halogen free

Mounting Pad Layout

TO-252AA Unit : inch(mm)



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