SICD03C60

3A SiC Schottky Diode

■ Features

- Low Conduction and Switching Loss
- Positive Temperature Coefficient on Vf
- Temperature Independent Switching Behavior
- Fast Reverse Recovery
- High Surge Current Capability
- Pb-free lead plating

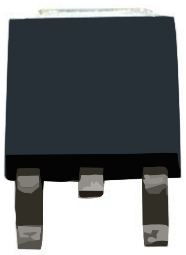
■ Benefits

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

■ Applications

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

■ Outline



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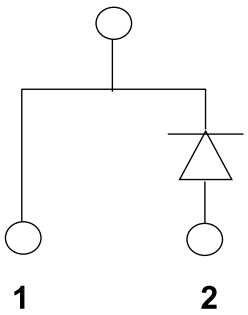

Inner Circuit

■ Maximum ratings and electrical characteristics

Parameter	Conditions	Symbol	SICD03C60	UNIT
Marking code			SICD03C60	
Peak Repetitive Reverse Voltage	T_J=25°C	V_{RRM}	600	V
Peak Reverse Surge Voltage	T_J=25°C	V_{RSM}	600	V
DC Blocking Voltage	T_J=25°C	V_R	600	V
Continuous Forward Current	T_c=25°C	I_F	7	A
	T_c=135°C		3	A
	T_c=157°C		2	A
Non-Repetitive Peak Forward surge current	T_c=25°C,T_p=10ms,Half Sine-Wave	I_{FSM}	18	A
	T_c=125°C,T_p=10ms,Half Sine-Wave		15	A
	T_c=25°C,T_p=10us,Pulse		92	A
Repetitive Peak Forward surge current	T_c=25°C,T_p=10ms,Half Sine-Wave,D=0.1	I_{FRM}	14	A
	T_c=125°C,T_p=10ms,Half Sine-Wave,D=0.1		13	A
Power Dissipation	T_c=25°C	P_D	30	W
	T_c=125°C		10	W
Operation Junction and Storage Temperature		T_J	175	°C
		T_{stg}	-55 to 175	°C
Thermal Resistance Junction to Case		$R_{\theta JC}$	5	°C/W

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
DC Blocking Voltage	I_R=100uA,T_J=25°C	V_{DC}		>650		V
Forward Voltage	I_F=2A,T_J=25°C	V_F		1.5	1.8	V
	I_F=2A,T_J=175°C			1.9	2.2	V
Reverse Current	V_R=600V,T_J=25°C	I_R		<1	30	uA
	V_R=600V,T_J=125°C			2	80	uA
Total Capacitive Charge	I_F=2A,dI/dt=300A/us, V_R=400V,T_J=25°C	Q_C		7		nC
Total Capacitive	V_R=1V,T_J=25°C,f=1MHz	C		85		pF
	V_R=200V,T_J=25°C,f=1MHz			15		pF
	V_R=400V,T_J=25°C,f=1MHz			15		pF

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■ Rating and characteristic curves

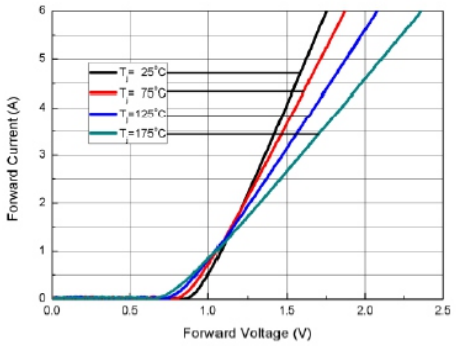

Fig. 1 Forward Characteristics

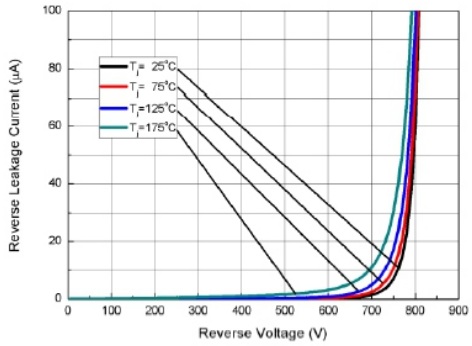

Fig. 2 Reverse Characteristics

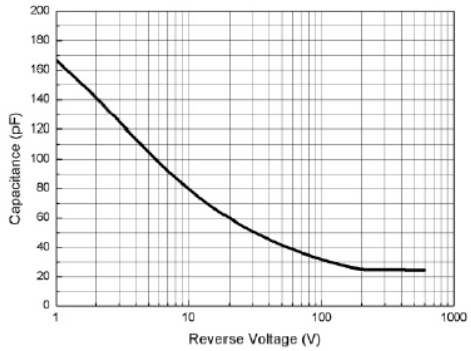

Fig. 3 Capacitance vs. Reverse Voltage

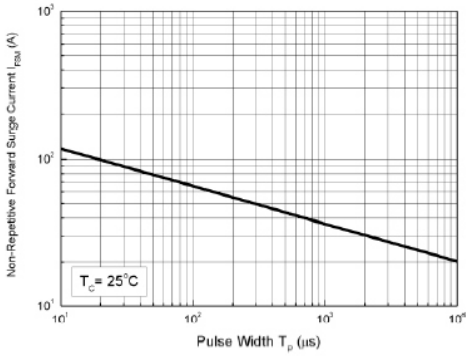

Fig. 4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

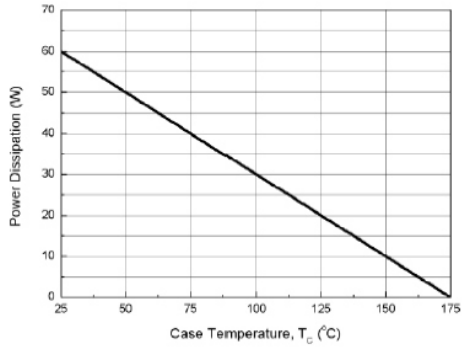

Fig. 5 Power Derating

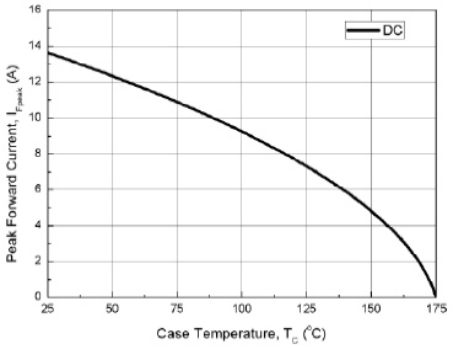

Fig. 6 Current Derating

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■ Outline

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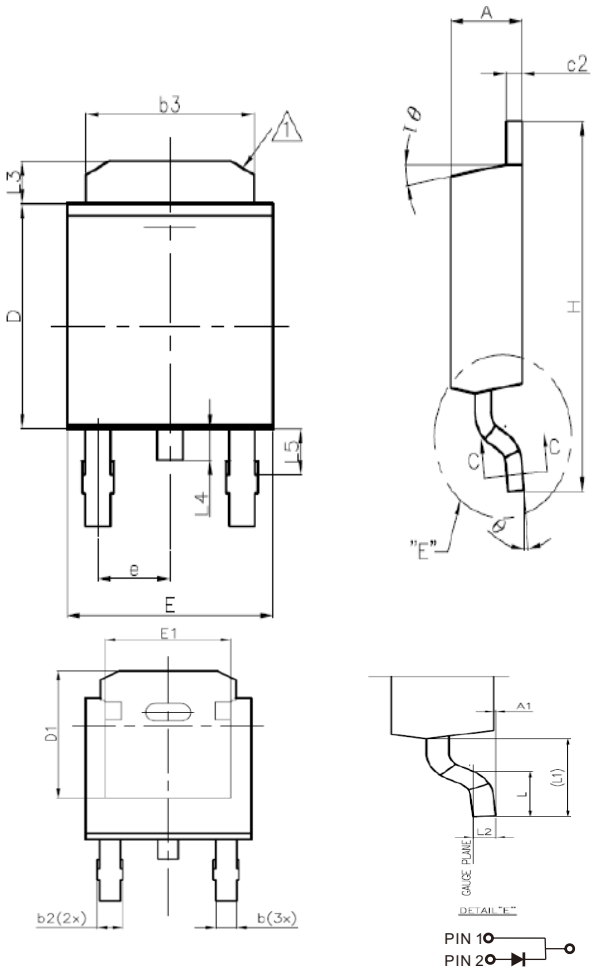

symbol	Dimensions in inches(millimeters)		
	Min	Nom	Max
A	0.086	0.090	0.094
A1	0.00	——	0.005
b	0.025	——	0.035
b1	0.028	0.032	0.036
b2	0.028	——	0.045
b3	0.205	——	0.215
c	0.018	——	0.023
c1	0.016	0.020	0.022
c2	0.018	——	0.023
D	0.235	0.240	0.245
D1	0.205	——	——
E	0.250	0.257	0.265
E1	0.170	——	——
e	——	0.090	——
H	0.370	0.390	0.410
L	0.055	0.060	0.065
L	0.539(13.7)	——	0.555(14.10)
L1	——	0.104	——
L2	——	0.020	——
L3	0.035	0.046	0.050
L4	0.025	0.033	0.040
L5	0.045	0.049	0.060
Ø	0	——	10
Ø1	0	——	15

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

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