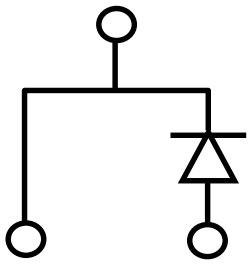
H2S060T002

SiC Schottky Diode

Package TO-263-2L

1 2

Inner Circuit



1 2

Product Summary

V_R	600 V	
I_F	4.5A (T_c= 135℃)	2A (T_c= 164℃)
Q_C	7 nC	

Halogen free RoHS COMPLIANT

Features

- Low Conduction and Switching Loss
- Positive Temperature Coefficient on V_F
- 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

Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	T_J = 25℃	600	V
Peak Reverse Surge Voltage	V_{RSM}	T_J = 25℃	600	V
DC Blocking Voltage	V_R	T_J = 25℃	600	V
Continuous Forward Current	I_F	T_C= 25℃	9	A
		T_C= 135℃	4.5	A
		T_C= 164℃	2	A

Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Unit
Non-Repetitive Peak Forward Surge Current	I_{FSM}	T_C = 25℃, T_P = 10 ms Half Sine Wave	18	A
		T_C = 125℃, T_P = 10 ms Half Sine Wave	14	A
		T_C = 25℃, T_P = 10 µs Pulse	86	A
Repetitive Peak Forward Surge Current	I_{FRM}	T_C = 25℃, T_P = 10 ms Half Sine Wave, D = 0.1	17	A
		T_C = 125℃, T_P = 10 ms Half Sine Wave, D = 0.1	13	A
Power Dissipation	P_D	T_C = 25℃	48	W
		T_C = 125℃	16	W
Operating Junction and Storage Temperature	T_J		175	℃
	T_{stg}		-55 to 175	℃
Thermal Resistance Junction to Case	$R_{\Theta JC}$		3.1	℃/W

Electrical Characteristics

Parameter	Symbol	Test Conditions	Typ.	Max.	Unit
DC Blocking Voltage	V_{DC}	I_R = 100 µA, T_J = 25℃	> 650		V
Forward Voltage	V_F	I_F = 2A, T_J = 25℃	1.5	1.8	V
		I_F = 2A, T_J = 175℃	1.9	2.2	V
Reverse Current	I_R	V_R = 600V, T_J = 25℃	< 1	30	µA
		V_R = 600V, T_J = 175℃	2	80	µA
Total Capacitive Charge	Q_C	I_F = 2A, dI/dt=300A/µs, V_R=400V, T_J=25℃	7		nC
Total Capacitance	C	V_R=1V, T_J=25℃, f =1 MHz	85		pF
		V_R=200V, T_J=25℃, f =1 MHz	15		
		V_R=400V, T_J=25℃, f =1 MHz	15		

Device Performances

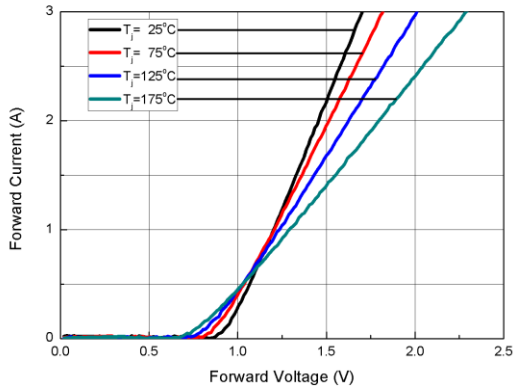


Fig. 1 Forward Characteristics

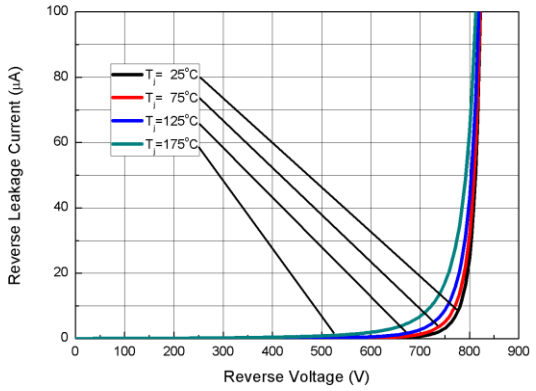


Fig. 2 Reverse Characteristics

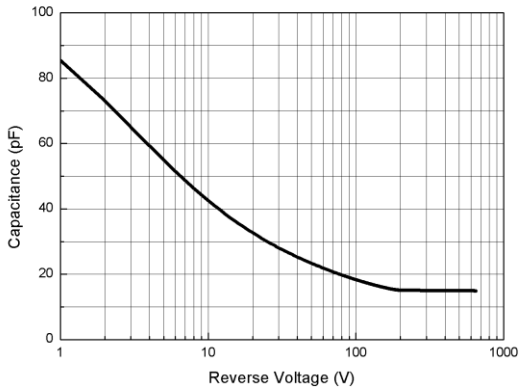


Fig. 3 Capacitance vs. Reverse Voltage

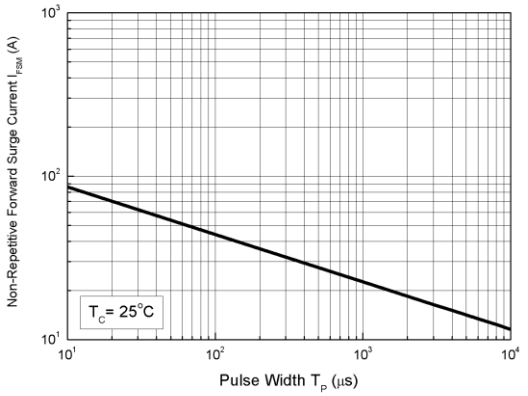


Fig. 4 Non-Repetitive Peak Forward Surge Current (Pulse Mode)

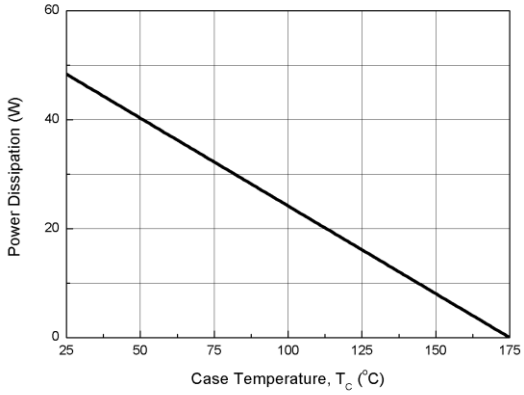


Fig. 5 Power Derating

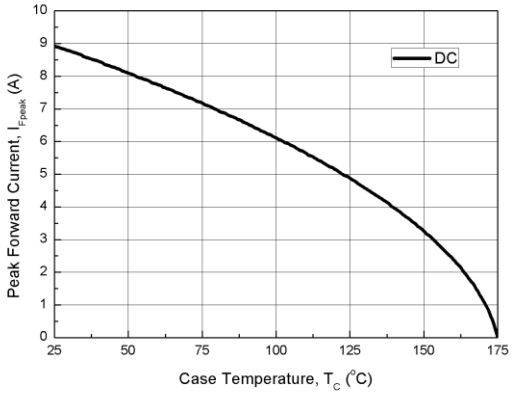
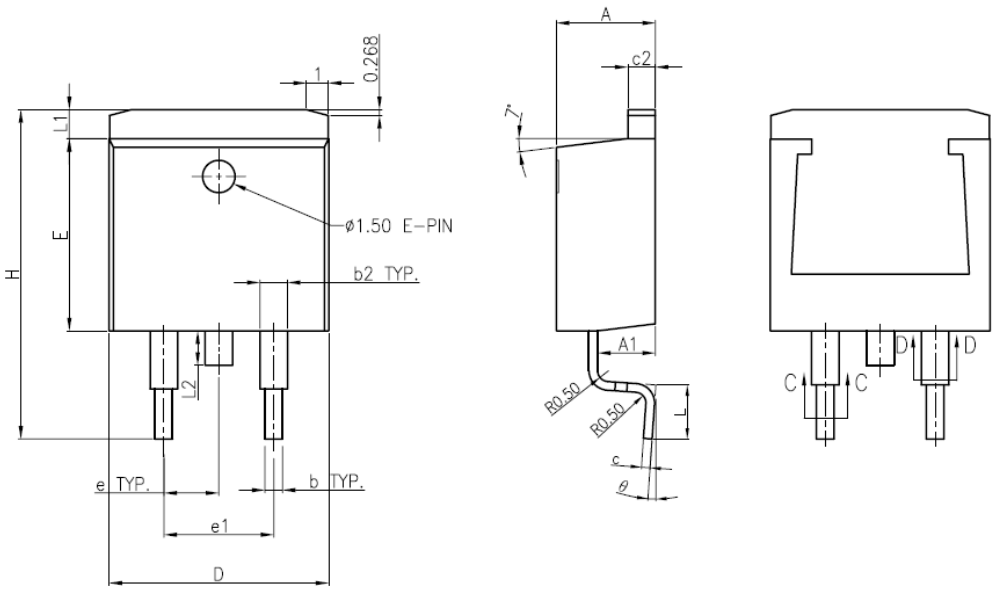
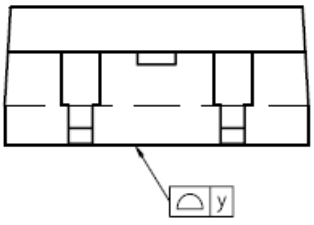
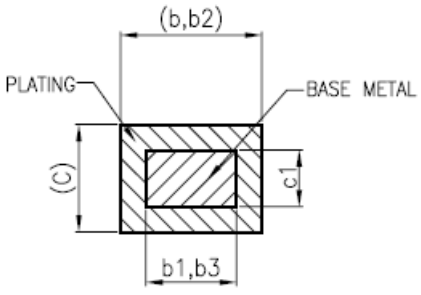


Fig. 6 Current Derating

Package Dimensions TO-263-2L







SECTION C-C & D-D

SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	4.470	——	4.670	0.176	——	0.184
A1	2.520	——	2.820	0.099	——	0.111
b	0.710	0.813	0.910	0.028	0.032	0.036
b1	0.710	——	0.910	0.028	——	0.036
b2	1.170	1.270	1.370	0.046	0.050	0.054
b3	1.170	——	1.370	0.046	——	0.054
c	0.279	——	0.483	0.011	——	0.019
c1	0.279	0.380	0.432	0.011	0.015	0.017
c2	1.170	——	1.370	0.046	——	0.054
D	10.010	——	10.310	0.394	——	0.406
E	8.763	8.890	9.017	0.345	0.350	0.355
E1	10.40	10.552	10.654	0.484	0.490	0.494
e	——	2.54 BSC	——	——	0.100 BSC	——
e1	4.980	——	5.180	0.196	——	0.204
H	15.00	——	15.85	0.590	——	0.624
L	2.29	2.54	2.79	0.090	0.100	0.110
L1	1.27	——	1.40	0.050	——	0.055
L2	1.30	——	1.75	0.051	——	0.069
y	0	——	0.075	0	——	0.003
θ	0°	——	8°	0°	——	8°