650V SiC Schottky Diode

FEATURES

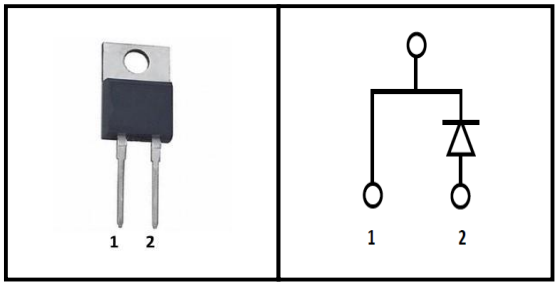
- Low Conduction and Swiitch Loss
- Positive Temperature Coefficient on VF
- Temperature Independent Switching Behavior
- Fast Reverse Recovery
- High Surge Current Capability
- Pb-free lead plating

APPLICATIONS

- Switch Mode Power Supply (SMPS)
- Uninterruptible Power Supply (UPS)
- Power Factor Correction (PFC)
- Solar/ Wind Renewable Energy
- Power Inverters
- Motor Drives

BENEFITS

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



Halogen free

Device Marking and Package Information

Device	Package	Marking
C2S065H010B	TO-220-2L	C2S065H010B

Absolute Maximum Ratings T_C = 25ºC, unless otherwise noted

Parameter	Symbol	Test Conditions	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	T_J = 25ºC	650	V
Peak Reverse Surge Voltage	V_{RSM}	T_J = 25ºC	650	V
DC Blocking Voltage	V_R	T_J = 25ºC	650	V
Continuous Forward Current	I_F	T_J ≤ 135ºC	10	A
Repetitive Peak Forward Surge Current	I_{FRM}	T_C = 25ºC, T_P = 8.3ms Half Sine Wave	85	A
Maximum Case Temperature	T_C		135	ºC
Operating Junction and Storage Temperature	T_J, T_{stg}		-55~175	ºC

Thermal Resistance

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	R_{thJC}	1.1	ºC/W

Specifications T_J = 25ºC, unless otherwise noted

Parameter	Symbol	Test Conditions	Value		Unit
			Typ.	Max.	
Forward Voltage	V_F	I_F = 10A, T_J = 25ºC	1.4	1.65	V
		I_F = 10A, T_J = 175ºC	1.75	2.3	V
Reverse Current	I_R	V_R =650V, T_J = 25ºC	1	20	μA
		V_R =650V, T_J = 175ºC	5	100	μA
Total Capacitive Charge	Q_C	I_F = 10A, di/dt =200A /μs V_R =650V, T_J = 25ºC	25	--	nC
Total Capacitance	C	V_R =0V, T_J = 25ºC, , f =1 MHz	440	--	pF
		V_R =200V, T_J = 25ºC, , f =1 MHz	57	--	
		V_R =400V, T_J = 25ºC, , f =1 MHz	46	--	

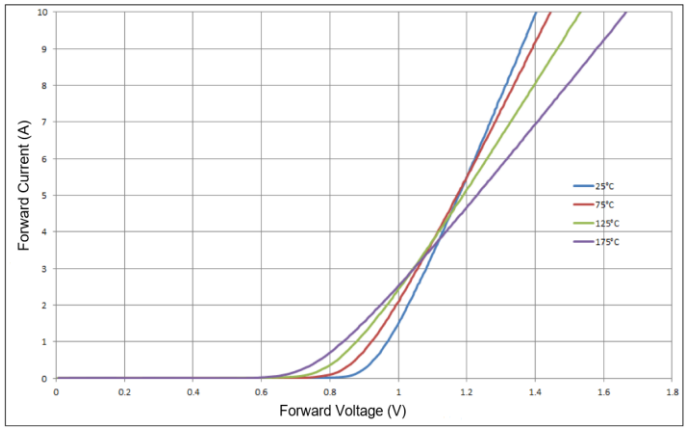


Fig. 1 Forward Characteristics

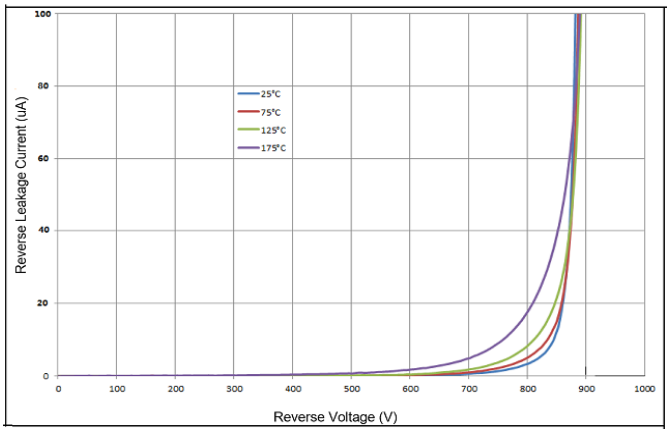


Fig. 2 Reverse Characteristics

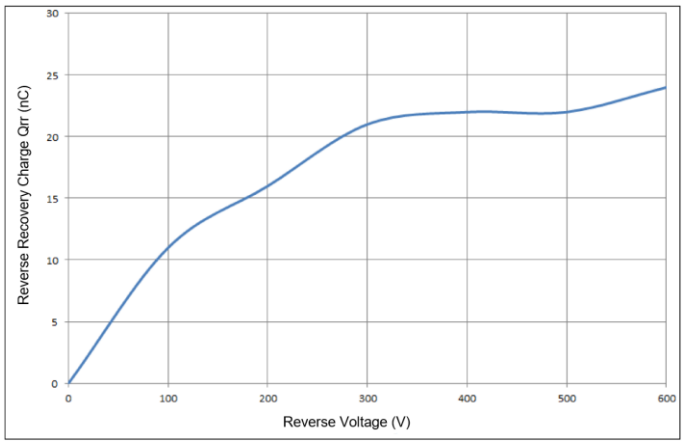


Fig. 3 Total Capacitance Charge vs. Reverse Voltage

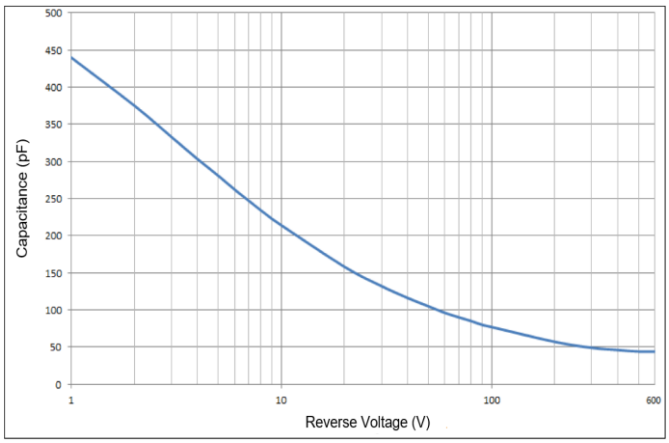


Fig. 4 Total Capacitance vs. Reverse Voltage

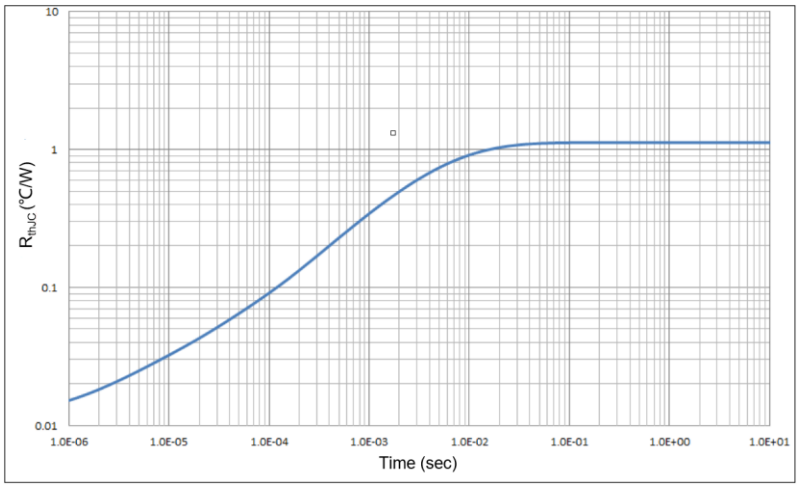
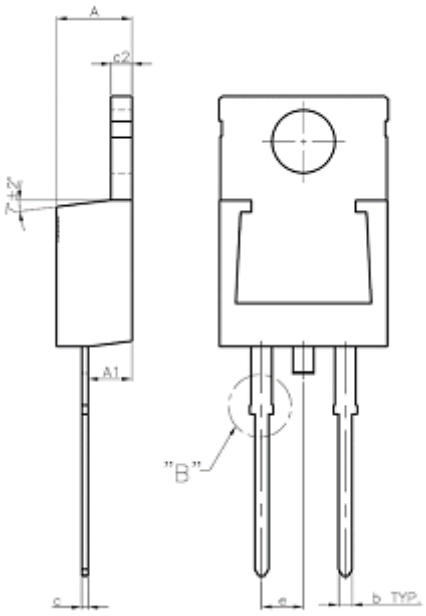
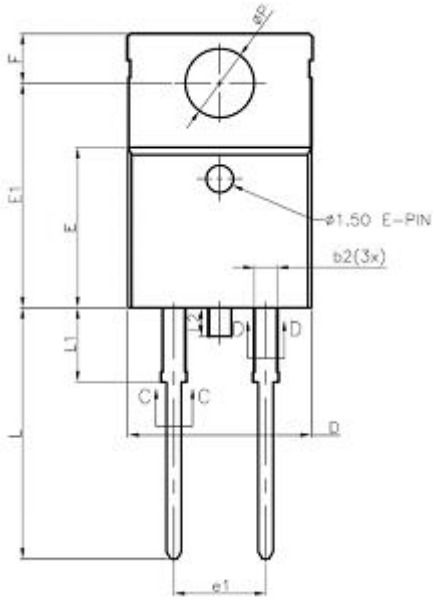


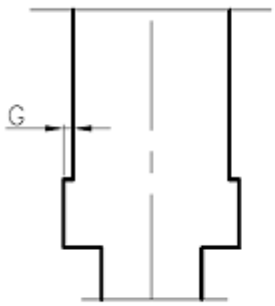
Fig. 5 Transient Thermal Impedance

TO-220-2L

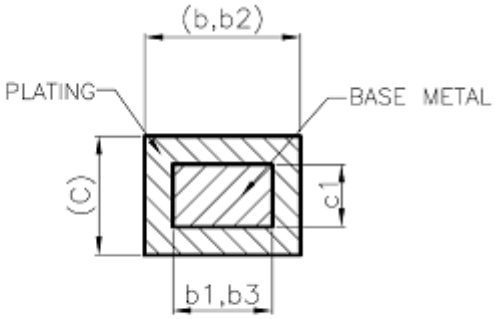


SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	4.470	——	4.670	0.176	——	0.184
A1	2.520	——	2.820	0.099	——	0.111
b	0.710	0.813	0.910	0.028	0.032	0.036
b1	0.710	——	0.910	0.028	——	0.036
b2	1.170	1.270	1.370	0.046	0.050	0.054
b3	1.170	——	1.370	0.046	——	0.054
c	0.279	——	0.483	0.011	——	0.019
c1	0.279	——	0.432	0.011	——	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	12.294	12.446	12.548	0.484	0.490	0.494
e	——	2.54 BSC	——	——	0.100 BSC	——
e1	4.980	——	5.180	0.196	——	0.204
F	2.642	2.743	2.946	0.104	0.108	0.116
G	0.000	——	0.127	0.000	——	0.005
L	13.700	——	14.10	0.539	——	0.555
L1	4.04	4.11	4.19	0.159	0.162	0.165
L2	——	——	1.60	——	——	0.063
øP	3.790	——	3.890	0.149	——	0.153





DETAIL"E"



SECTION C-C & D-D

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