

**SMDH06C65J****6.0A SiC SCHOTTKY BARRIER DIODE****FEATURE**

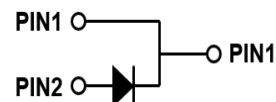
- 650V Schottky Diode, 100% avalanche tested*
- Zero Reverse Recovery/Zero Forward Recovery
- High Efficiency Operation
- Extremely Fast Switching
- Temperature Independent Switching Behavior

TYPICAL APPLICATIONS

- Switch mode power supply
- Power factor correction Solar Invertor
- Solar inverter
- Uninterruptible power supply



TO-220AD-2L



*20% rating current, 5 mH inductance.

MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	650	V
DC blocking Voltage	V_{DC}	650	V
Maximum Average Forward Rectified Current at $T_C=150^{\circ}\text{C}$	$I_{F(AV)}$	6	A
Non-Repetitive Peak Forward Surge Current $T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse	I_{FSM}	48	A
Total power dissipation $T_C=25^{\circ}\text{C}$	P_D	93	W
Operation Junction Temperature and Storage Temperature	T_J, T_{STG}	-40 to +175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter		Symbol	Typ	Max	Unit
Forward voltage	$I_F=6\text{A}, T_J=25^{\circ}\text{C}$	V_F	1.35	1.65	V
	$I_F=6\text{A}, T_J=175^{\circ}\text{C}$		1.75		
Reverse current	$V_R=650\text{V}, T_J=25^{\circ}\text{C}$	I_R	3.0	40	μA
	$V_R=650\text{V}, T_J=175^{\circ}\text{C}$		7.0		
Total capacitive charge	$V_R=400\text{V}$	Q_C	16.4	---	nC
Total capacitance	$V_R=0\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$	C	275	---	pF
	$V_R=200\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$		31	---	
	$V_R=400\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$		30	---	

THERMAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Typ	Max	Unit
Typical Thermal Resistance Junction to Case	$R_{(JC)}$	1.5	----	$^{\circ}\text{C/W}$



Typical Characteristics

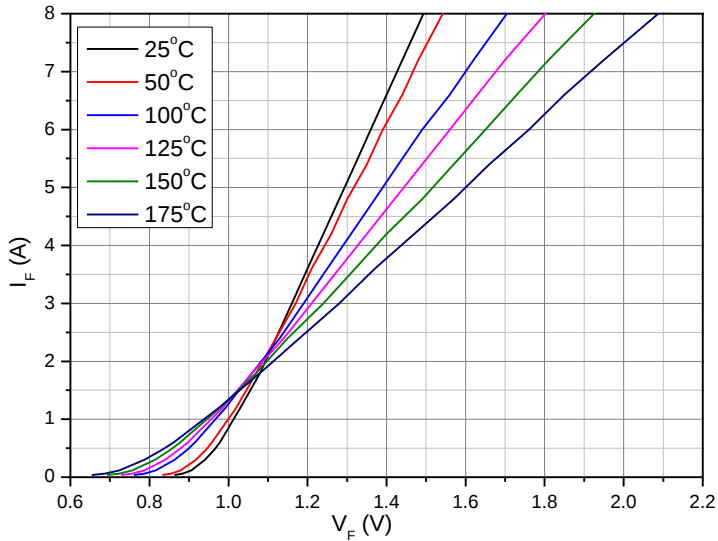


Figure 1. Forward Characteristics

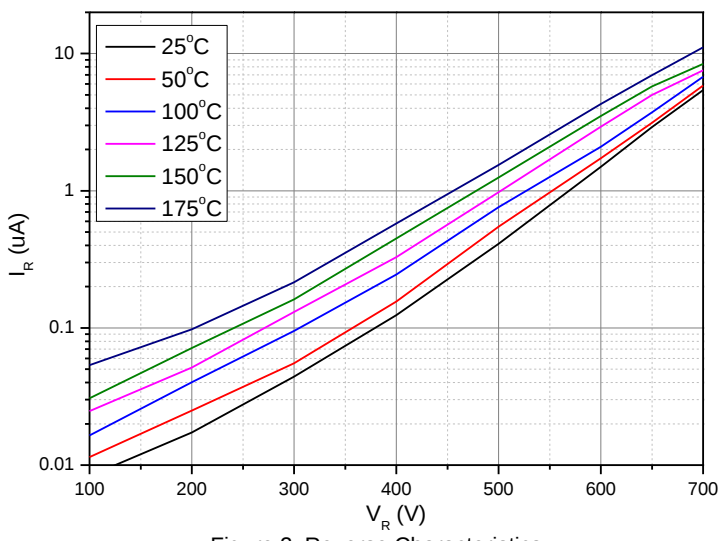


Figure 2. Reverse Characteristics

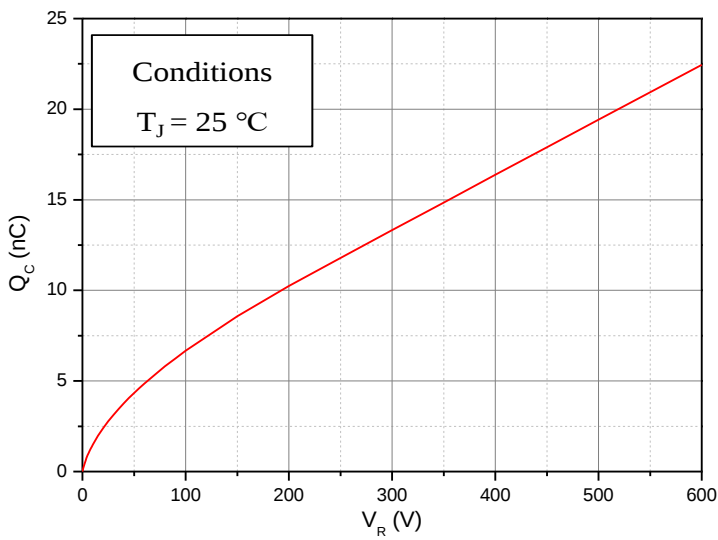


Figure 3. Total Capacitance Charge vs. Reverse Voltage

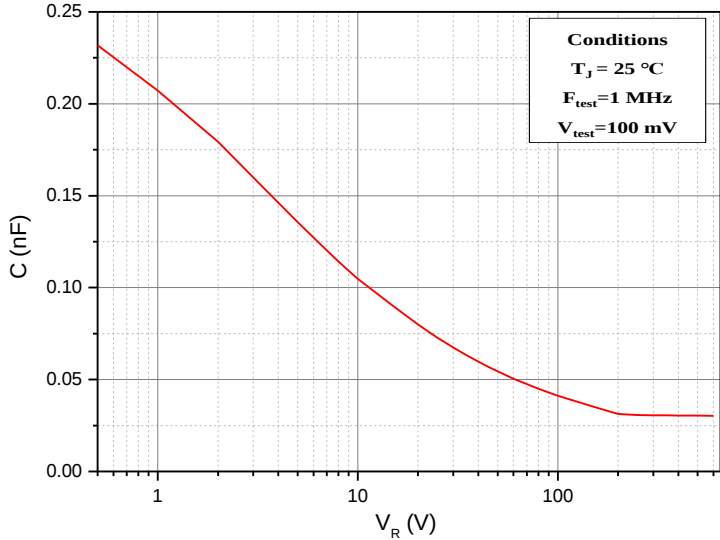
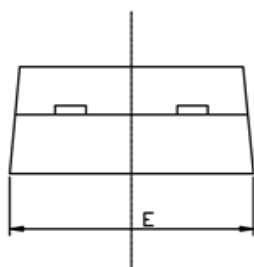
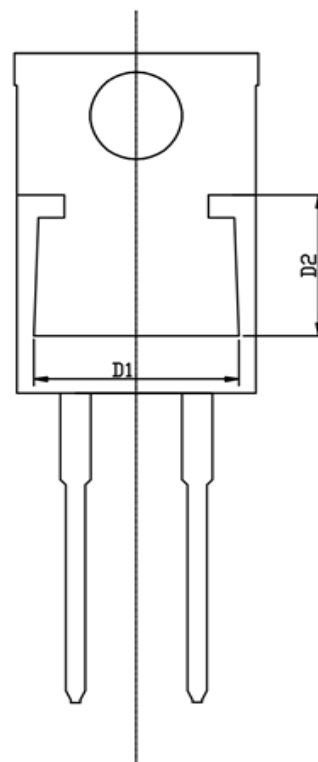
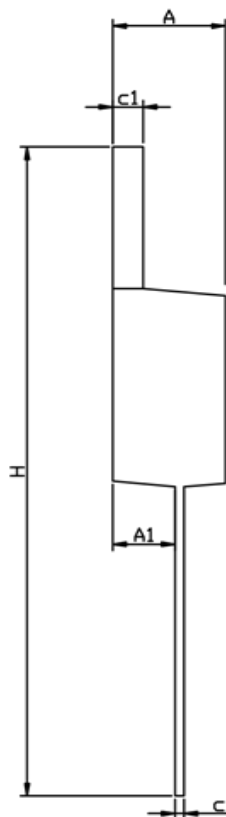
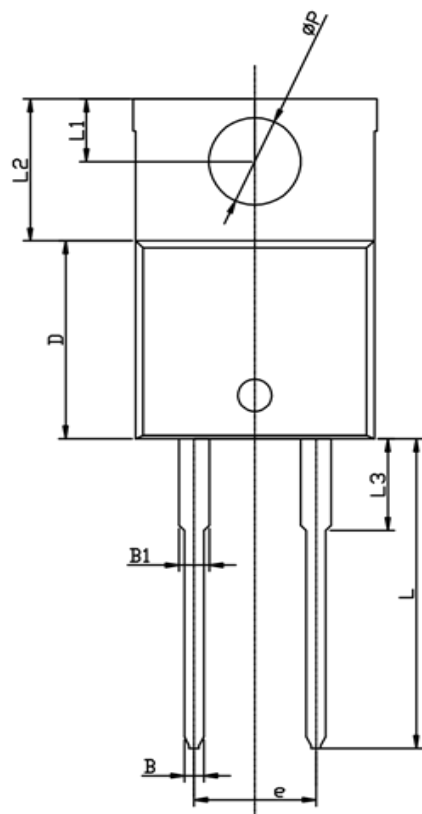


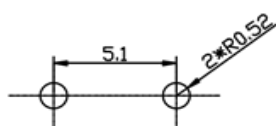
Figure 4. Capacitance vs. Reverse Voltage



TO-220AD-2L PACKAGE OUTLINE



RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.45	2.60	2.70
B	0.72	0.82	0.92
B1	1.12	1.27	1.42
c	0.28	0.38	0.48
c1	1.17	1.27	1.37
D	8.46	8.66	8.86
D1	7.70	7.90	8.40
D2	5.00	5.20	5.40
e		5.10	
E	9.85	10.15	10.45
H	28.00	28.50	29.00
ΦP		3.84	
L	13.1	13.6	14.1
L1	2.54	2.74	2.94
L2	6.04	6.24	6.44
L3	3.85	4.05	4.35