

V_{RWM}	5	V
P_{PP}	200	W
I_{PP}	21.7	A

● Feature

High reliability
Small mold type

● Application

Surge Protection

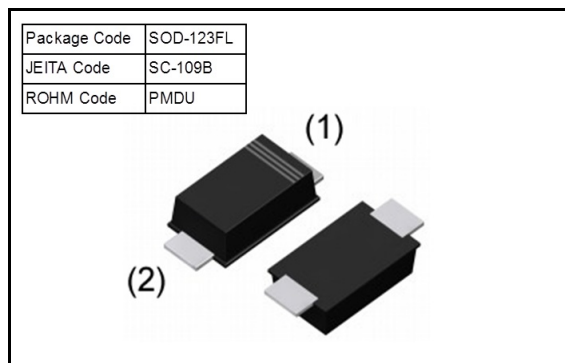
● Structure

Silicon Epitaxial Planar

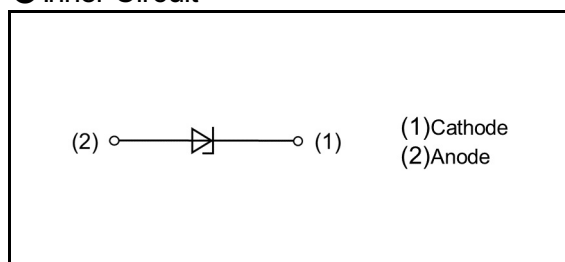
● Absolute Maximum Rating ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Min.	Max.	Unit	
Peak Pulse Power	P _{pp}	tp=10/1000us	-	200	W	
Peak Pulse Current	I _{pp}	tp=10/1000us	-	21.7	A	
Power dissipation	P _D	on Glass-epoxy substrate	-	1	W	
Junction temperature	T _j	-	-	150	°C	
Storage temperature	T _{stg}	-	-65	150	°C	
ESD capability	V _{ESD}	IEC61000-4-2	Air	-	30	kV
			Contact	-	30	kV

● Outline



● Inner Circuit



● Packaging Specification

Packing	Embossed Tape
Reel Size(mm)	180
Taping Width(mm)	8
Quantity(pcs)	3000
Taping Code	TR
Marking	AW

● Characteristic (Ta = 25°C)

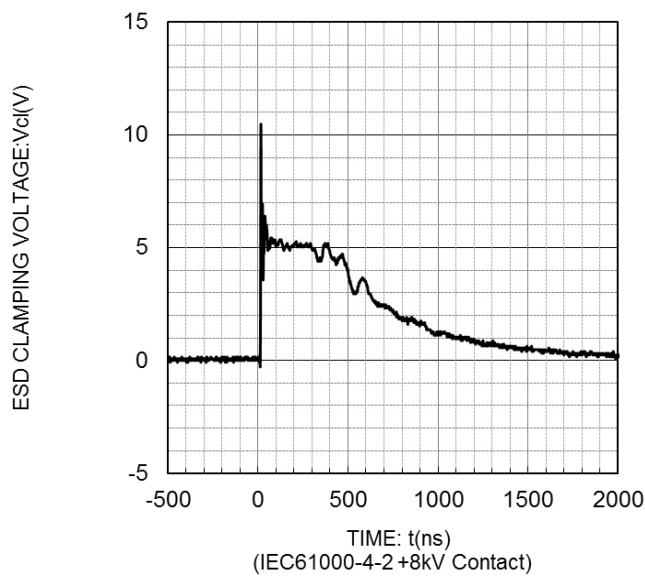
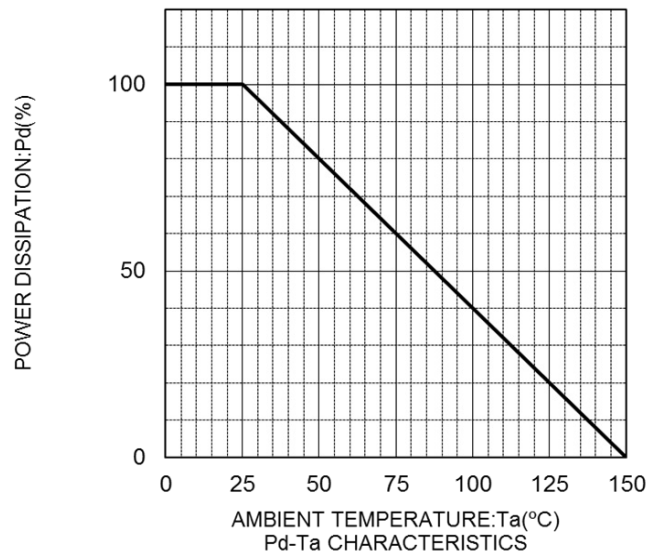
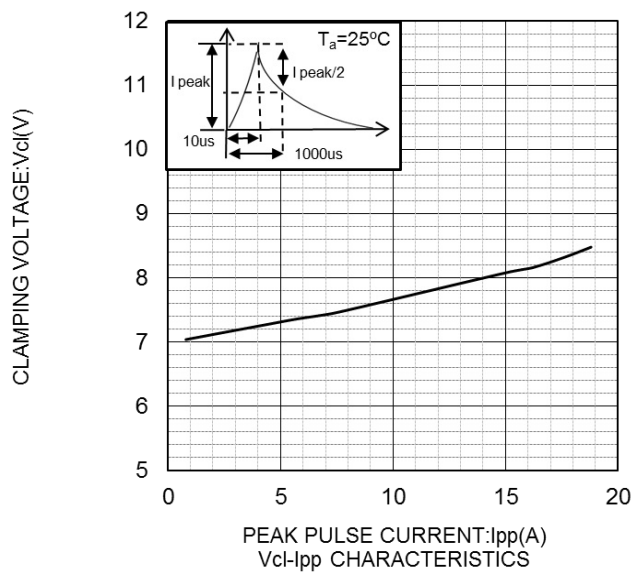
Part Number	Symbol						
	Breakdown voltage $V_{BR}(V)^{(1)}$		Reverse Current $I_R(\mu A)$		Clamping voltage $V_{CL}(V)$		Reverse Stand-off voltage $V_{RWM}(V)$
	MIN.	$I_T(mA)$	MAX.	$V_R(V)$	MAX.	$I_{PP}(A)$	MAX.
SMF5V0	6.40	40	5.0	5.0	9.2	21.7	5.0
SMF6V0	6.67	40	26	6.0	10.3	19.4	6.0
SMF6V5	7.72	40	20	6.5	11.2	17.9	6.5
SMF7V0	7.78	40	3.0	7.0	12.0	16.7	7.0
SMF7V5	8.33	40	0.1	7.5	12.9	15.5	7.5
SMF8V0	8.89	40	0.1	8.0	13.6	14.7	8.0
SMF9V0	10.0	40	0.1	9.0	15.4	13.0	9.0
SMF10V	11.1	20	0.1	10	17.0	11.8	10
SMF11V	12.2	20	0.1	11	18.2	11.0	11
SMF12V	13.3	20	0.1	12	19.9	10.1	12
SMF13V	14.4	20	0.1	13	21.5	9.3	13
SMF14V	15.6	20	0.1	14	23.2	8.6	14
SMF15V	16.7	20	0.1	15	24.4	8.2	15
SMF16V	17.2	20	0.1	16	26.0	7.7	16
SMF17V	18.9	20	0.1	17	27.6	7.2	17
SMF18V	20.0	20	0.1	18	29.2	6.8	18
SMF20V	22.2	10	0.1	20	32.4	6.2	20
SMF22V	24.4	10	0.1	22	35.5	5.6	22
SMF24V	26.7	10	0.1	24	38.9	5.1	24
SMF26V	28.9	10	0.1	26	42.1	4.8	26
SMF28V	31.1	10	0.1	28	45.4	4.4	28
SMF30V	33.3	10	0.1	30	48.4	4.1	30
SMF33V	36.7	10	0.1	33	53.3	3.8	33

Note(1) V_{BR} test time is 40ms.

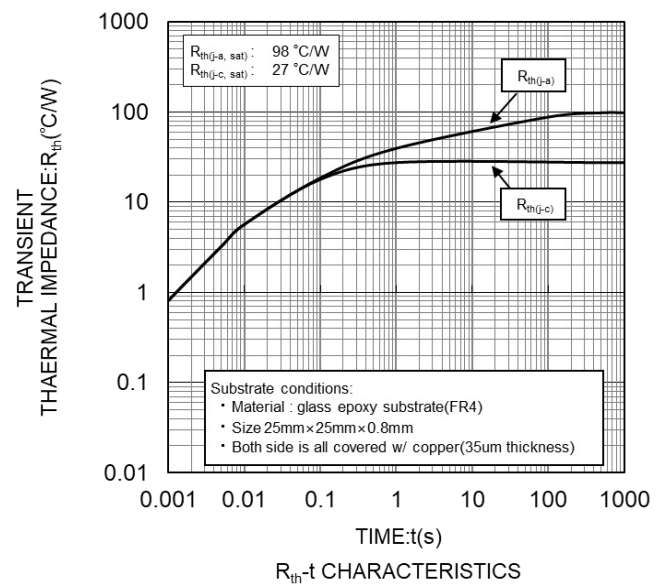
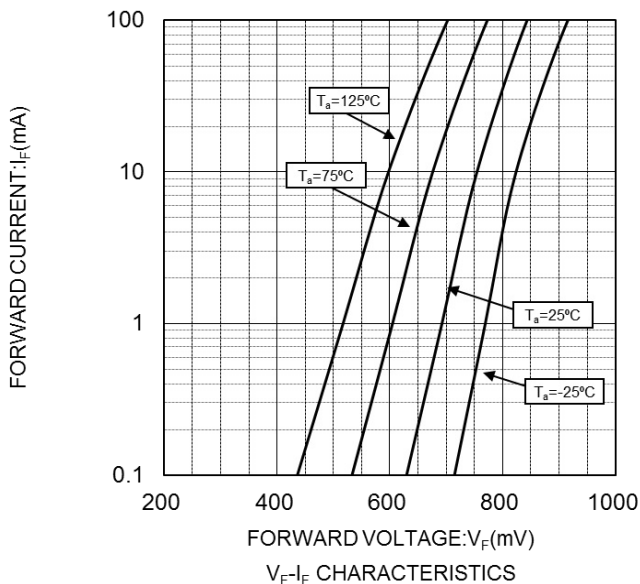
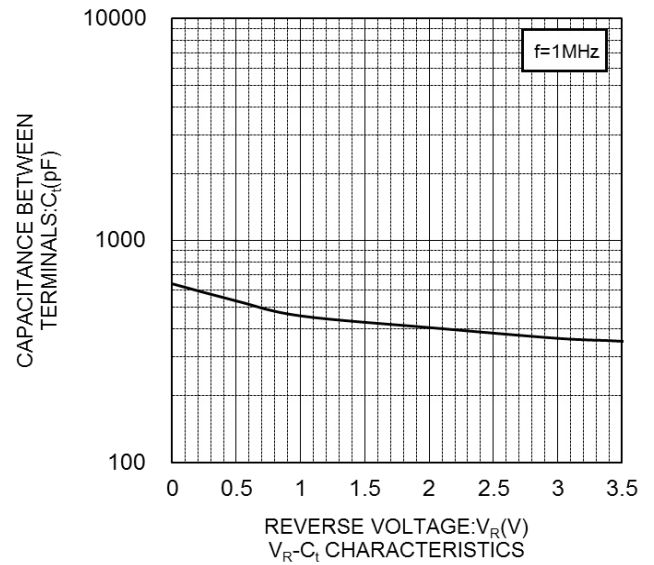
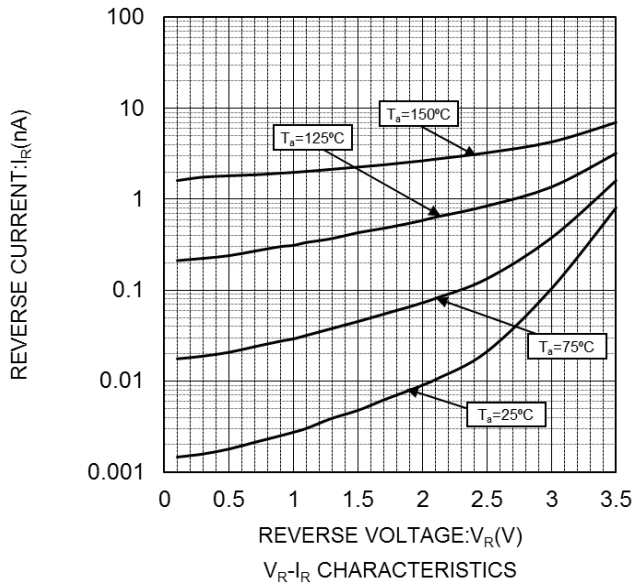
● Marking

Part Number	Marking	Part Number	Marking
SMF5V0	AW	SMF15V	NW
SMF6V0	BW	SMF16V	PW
SMF6V5	CW	SMF17V	YW
SMF7V0	DW	SMF18V	QW
SMF7V5	EW	SMF20V	RW
SMF8V0	FW	SMF22V	SW
SMF9V0	GW	SMF24V	TW
SMF10V	HW	SMF26V	UW
SMF11V	JW	SMF28V	VW
SMF12V	KW	SMF30V	VW
SMF13V	LW	SMF33V	XW
SMF14V	MW		

● Characteristic Curves



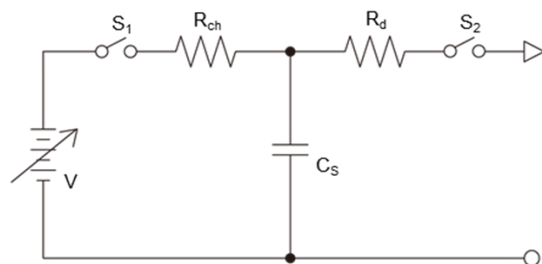
● Characteristic Curves



● Appended figure

Procedure to obtain ESD Clamping Voltage IEC61000-4-2 Spec

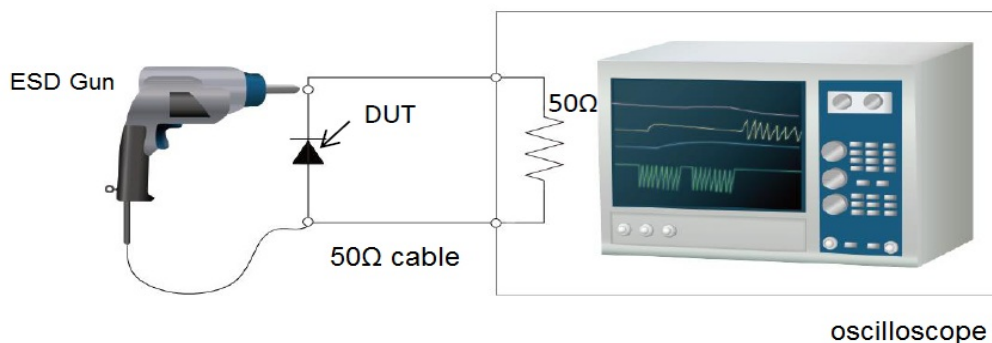
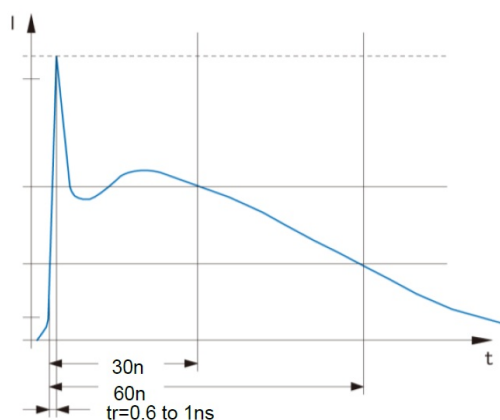
Level	Test Voltage (kV)	First Peak Current (A)	Current at 30ns (A)	Current at 60ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8



C_S :150pF R_d :330 Ω

simplified diagram in ESD machine

IEC61000-4-2 Waveform



oscilloscope

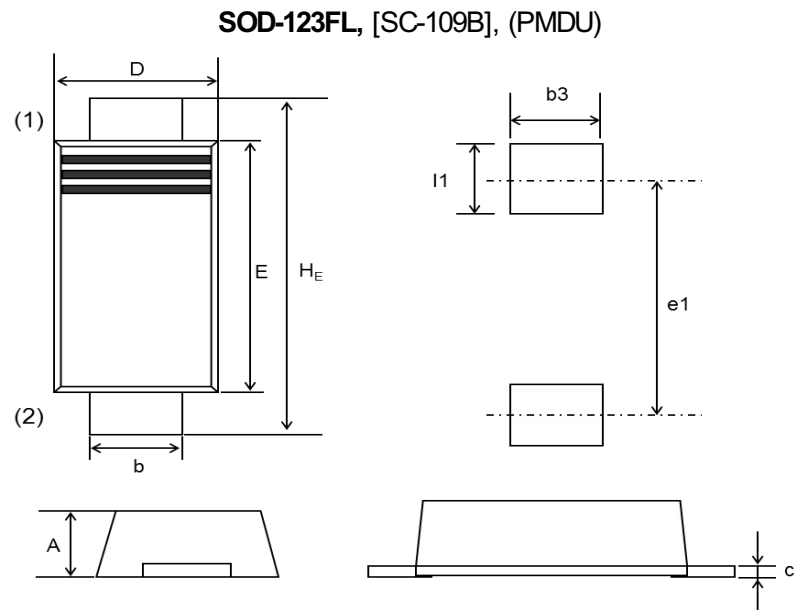
1 Set up ESD Tester at IEC61000-4-2 condition.
(IEC61000-4-2 : C=150pF, R=330 Ω)

2 Mount a sample on the high frequency test board
with the SMA connector.

3 Connect the SMA connector to the oscilloscope
by 50 Ω cable.
Then, add the 10X-attenuator between test board
and the cable to protect the oscilloscope.

4 Discharge ESD in contact discharge mode at any voltage.
(normally 8kV Max.)

● Dimension



DIM	Millimeters			Inches		
	Min.	Average	Max.	Min.	Average	Max.
A	0.70	0.80	0.90	0.028	0.031	0.035
b	0.80	0.90	1.00	0.031	0.035	0.039
c	0.05	0.10	0.20	0.002	0.004	0.008
D	1.50	1.60	1.70	0.059	0.063	0.067
E	2.50	2.60	2.70	0.098	0.102	0.106
H _E	3.38	3.50	3.62	0.133	0.138	0.143
l1	-	0.85	-	-	0.033	-
b3	-	1.20	-	-	0.047	-
e1	-	3.05	-	-	0.120	-

- (1) The marking bar indicates the cathode.
(2) The direction indicates the anode.

● Taping (Unit:mm)

