Features

- 1500 watts Peak Pulse Power (10/1000 μs)
- Response Time is Typically < 1 ns
- Excellent Clamping Capability
- Glass Passivated Junction

Applications

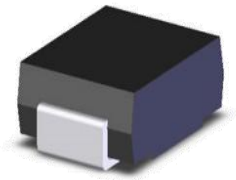
- Power lines
- Automotive and Telecommunication
- Computers &Consumer Electronics
- Industrial Electronics

VP15SMCxxA Series ----- SURFACE MOUNT TVS Diodes

General Information

VIC offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AB (SMC) size format.

TVS device are ideal for the protection of I/O interfaces, V_{CC} bus and other vulnerable circuits used in telecom, computer industrial and consumer electronic application.



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000us waveform	P_{PK}	1500	W
Peak Forward Surge Current,8.3ms Single Half Sine Wave	I_{FSM}	200	A
Maximum Operating temperature	T_{OPER}	-55 to +155	℃
Maximum Storage temperature	T_{STG}	-55 to +175	℃
Maximum lead temperature for soldering during 10s	T_L	260	℃

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	V_{RWM}	I_L	V_{BR}@I_T		I_T	V_C	I_{PP}
Uni-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
VP15SMC5.0A	5	300	6.4	7	10	9.2	163
VP15SMC6.0A	6	250	6.67	7.37	10	10.3	145.6
VP15SMC6.5A	6.5	150	7.22	7.98	10	11.2	134
VP15SMC7.0A	7	100	7.78	8.6	10	12	125
VP15SMC7.5A	7.5	50	8.33	9.21	1	12.9	116.3

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	V_{RWM}	I_L	V_{BR}@I_T		I_T	V_C	I_{PP}
Uni-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
VP15SMC8.0A	8	30	8.89	9.83	1	13.6	110.3
VP15SMC8.5A	8.5	20	9.44	10.4	1	14.4	104.2
VP15SMC9.0A	9	10	10	11.1	1	15.4	97.4
VP15SMC10A	10	5	11.1	12.3	1	17	88.2
VP15SMC11A	11	2	12.2	13.5	1	18.2	82.4
VP15SMC12A	12	1	13.3	14.7	1	19.9	75.4
VP15SMC13A	13	1	14.4	15.9	1	21.5	69.8
VP15SMC14A	14	1	15.6	17.2	1	23.2	64.7
VP15SMC15A	15	1	16.7	18.5	1	24.4	61.5
VP15SMC16A	16	1	17.8	19.7	1	26	57.7
VP15SMC17A	17	1	18.9	20.9	1	27.6	54.4
VP15SMC18A	18	1	20	22.1	1	29.2	51.4
VP15SMC20A	20	1	22.2	24.5	1	32.4	46.3
VP15SMC22A	22	1	24.4	26.9	1	35.5	42.3
VP15SMC24A	24	1	26.7	29.5	1	38.9	38.6
VP15SMC26A	26	1	28.9	31.9	1	42.1	35.6
VP15SMC28A	28	1	31.1	34.4	1	45.4	33.1
VP15SMC30A	30	1	33.3	36.8	1	48.4	31
VP15SMC33A	33	1	36.7	40.6	1	53.3	28.2
VP15SMC36A	36	1	40	44.2	1	58.1	25.8

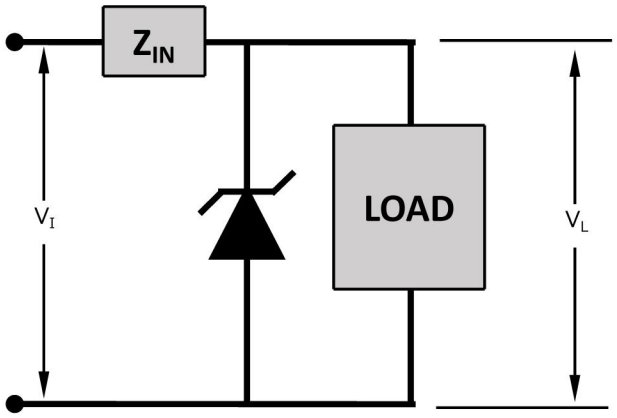
Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	V_{RWM}	I_L	V_{BR}@I_T		I_T	V_C	I_{PP}
Uni-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
VP15SMC40A	40	1	44.4	49.1	1	64.5	23.3
VP15SMC43A	43	1	47.8	52.8	1	69.4	21.6
VP15SMC45A	45	1	50	55.3	1	72.7	20.6
VP15SMC48A	48	1	53.3	58.9	1	77.4	19.4
VP15SMC51A	51	1	56.7	62.7	1	82.4	18.2
VP15SMC54A	54	1	60	66.3	1	87.1	17.2
VP15SMC58A	58	1	64.4	71.2	1	93.6	16.1
VP15SMC60A	60	1	66.7	73.7	1	96.8	15.5
VP15SMC64A	64	1	71.1	78.6	1	103	14.6
VP15SMC70A	70	1	77.8	86	1	113	13.3
VP15SMC75A	75	1	83.3	92.1	1	121	12.4
VP15SMC78A	78	1	86.7	95.8	1	126	11.9
VP15SMC85A	85	1	94.4	104	1	137	11
VP15SMC90A	90	1	100	111	1	146	10.3
VP15SMC100A	100	1	111	123	1	162	9.3
VP15SMC110A	110	1	122	135	1	177	8.5
VP15SMC120A	120	1	133	147	1	193	7.8
VP15SMC130A	130	1	144	159	1	209	7.2
VP15SMC150A	150	1	167	185	1	243	6.2
VP15SMC160A	160	1	178	197	1	259	5.8

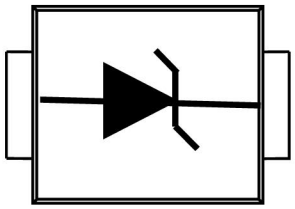
Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	V_{RWM}	I_L	V_{BR}@I_T		I_T	V_C	I_{PP}
Uni-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
VP15SMC170A	170	1	189	209	1	275	5.5
VP15SMC180A	180	1	201	222	1	292	5.2
VP15SMC190A	190	1	211	234	1	307	4.9
VP15SMC200A	200	1	224	247	1	324	4.7
VP15SMC210A	210	1	233	258	1	337	4.5
VP15SMC220A	220	1	246	272	1	356	4.2
VP15SMC250A	250	1	279	309	1	405	3.7
VP15SMC300A	300	1	335	371	1	486	3.1
VP15SMC350A	350	1	391	432	1	567	2.7
VP15SMC400A	400	1	447	494	1	648	2.3
VP15SMC440A	440	1	492	543	1	713	2.1

Typical Protection Circuit

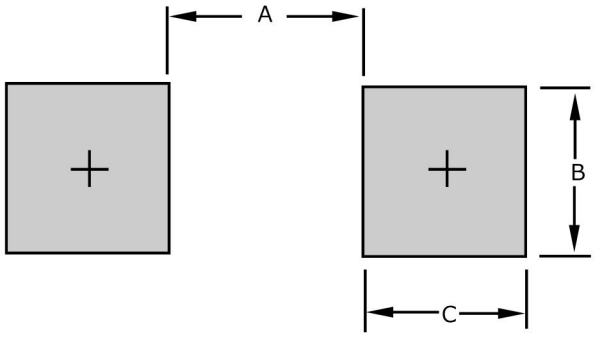


Block Diagram



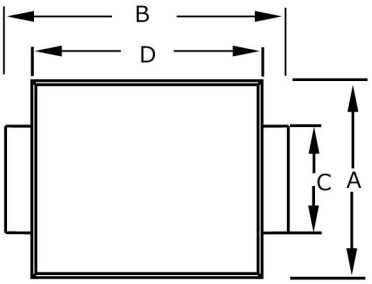
Uni-directional

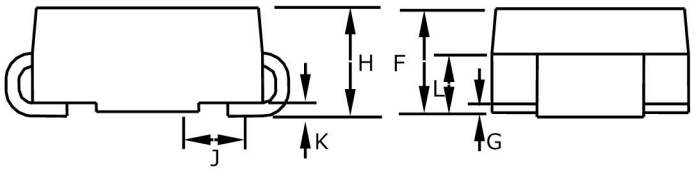
Recommended PCB Footprint



Dimension	SMC (DO-214AB)
A	4.69 (0.185)
B	3.07 (0.121)
C	1.52 (0.060)

Product Dimensions





Dimension	SMC (DO-214AB)
A	5.590-6.022 (0.220-0.245)
B	7.750-8.130 (0.305-0.320)
C	2.900-3.200 (0.114-0.126)
D	6.600-7.110 (0.260-0.280)
E	0.760-1.520 (0.030-0.060)
F	2.060-2.620 (0.079-0.103)
G	0.05-0.20 (0.002-0.008)
H	2.060-2.620 (0.079-0.103)
J	0.76-1.52 (0.030-0.060)
K	0.20-0.35 (0.008-0.014)

DIMENSIONS: MM / (INCHES)

Performance Graphs

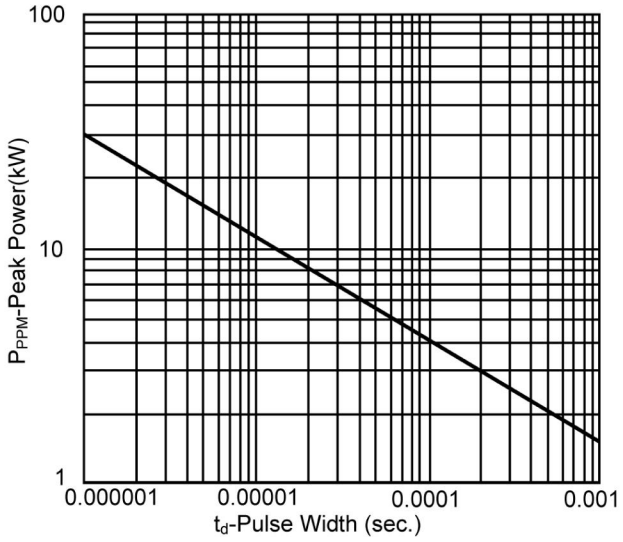


Figure 1-Peak Pulse Power Rating

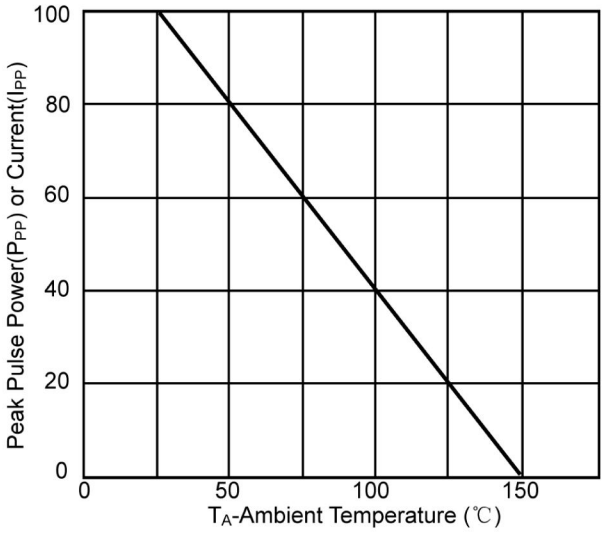


Figure 2-Pulse Derating Curve

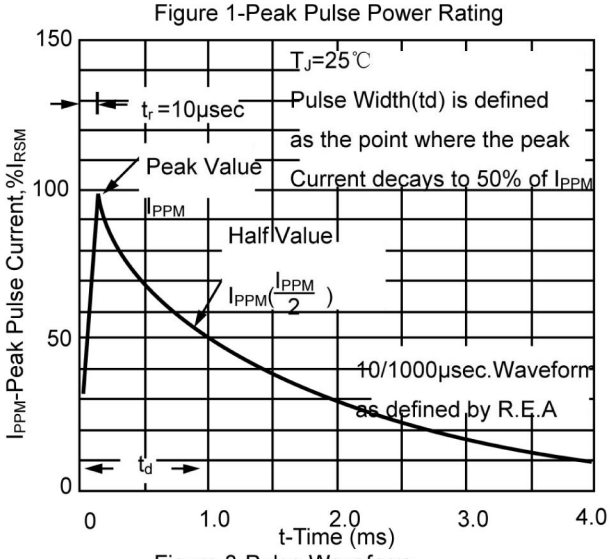


Figure 3-Pulse Waveform

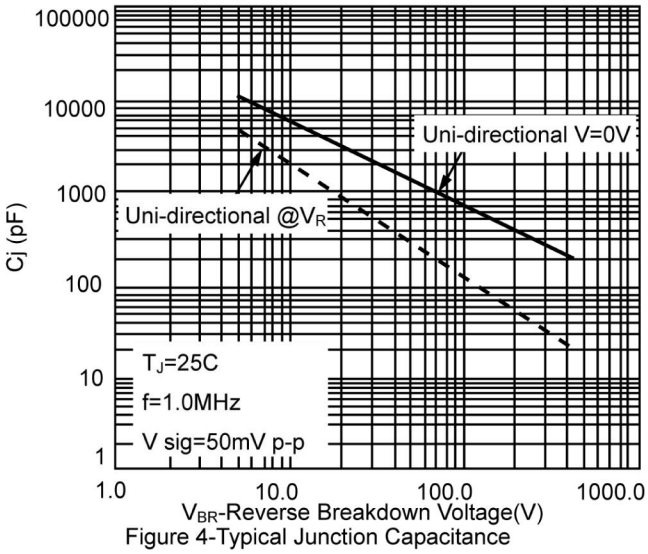


Figure 4-Typical Junction Capacitance

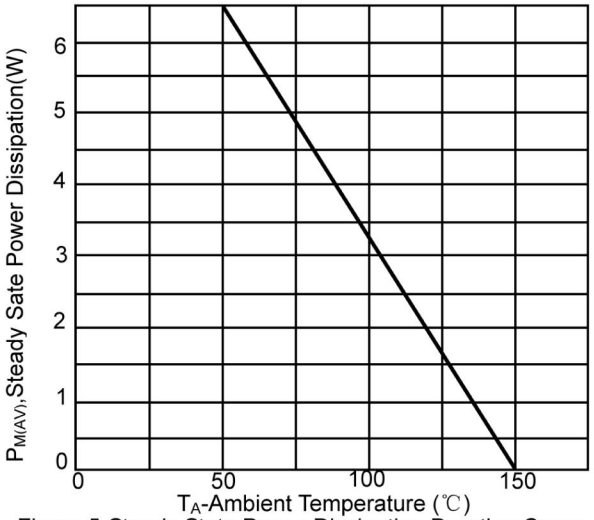


Figure 5-Steady State Power Dissipation Derating Curve

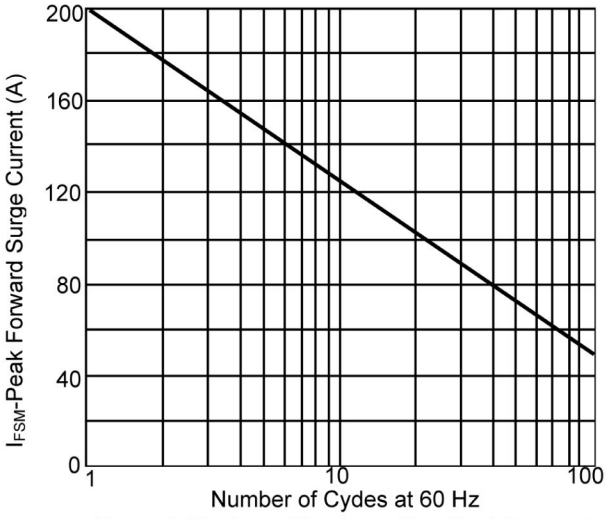
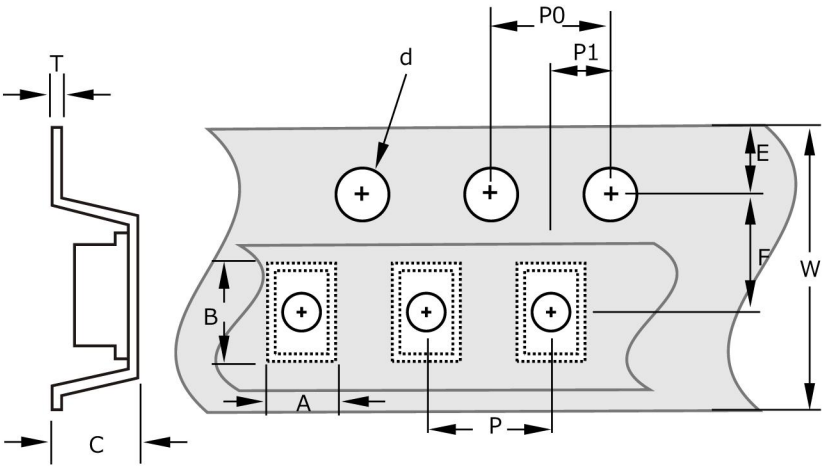
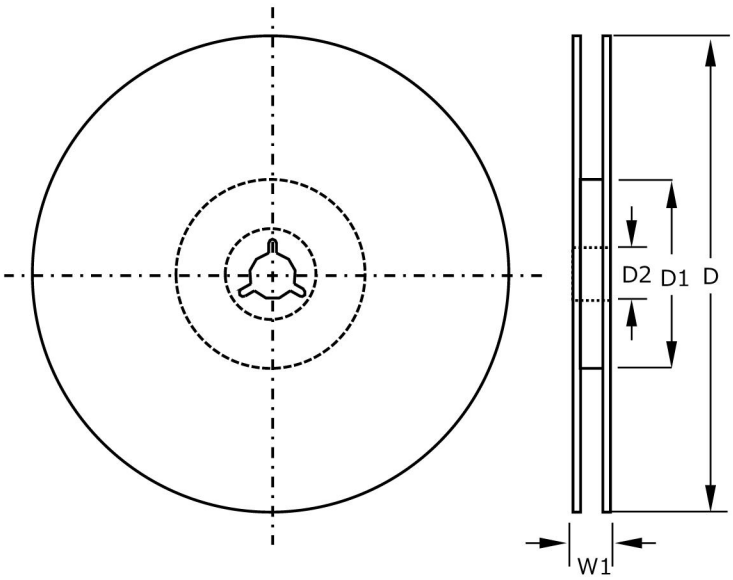


Figure 6-Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

Packaging Information

Symbol	SMC（DO-214AB）
A	6.0±0.20 (0.236±0.079)
B	8.30±0.20 (0.327±0.008)
C	2.57±0.20 (0.101±0.008)
d	1.50±0.10 (0.061±0.004)
D	330 (12.992)
D1	50.0 (1.969)
D2	13.0±0.20 (0.512±0.008)
E	1.75±0.10 (0.069±0.004)
F	7.50±0.10 (0.295±0.004)
P	8.00±0.10 (0.315±0.004)
P0	4.00±0.10 (0.157±0.004)
P1	2.00±0.05 (0.079±0.002)
T	0.30±0.10 (0.012±0.004)
W	16.00±0.30 (0.630±0.012)
W1	22.40 (0.882)





DIMENSIONS: MM / (INCHES)

Quantity of products in the taping package

(1) Standard quantity : 3000 pcs/Reel for the Series.

(2) Shipping quantity is a multiple of standard quantity.

(3) For additional information, please contact your local Sales Representative.