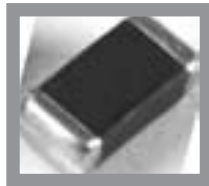




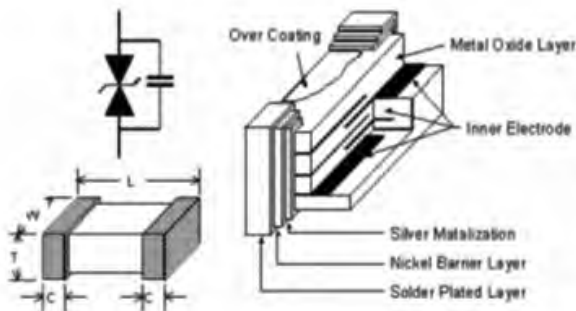
MVW series

FEATURES

1. Lead free type
2. SMD type zinc oxide based ceramic chip
3. Insulator over coat keeps excellent low and stable leakage current
4. Plating termination provided good solderability characteristic
5. Wide operating voltage range
6. Quick response time (<1ns)
7. Low clamping voltage
8. High transient current capability
9. Meet IEC 61000-4-2, 6100-4-4 and 6100-4-5 standard



DIMENSIONS



APPLICATIONS

1. For Mother board, Note book, Cellular phone, PDA, Handheld device, DSC, DV and Set Top box etc
2. For Vcc line and low frequency signal line over voltage protection

PARTNUMBER

MVW	1608	V	004	C	271	F	V
A	B	C	D	E	F	G	H

A: Series

B: Dimension

C: Voltage

D: Max. AC working voltage

E: Capacitance

F: Typical Capacitance: 271 = 270(pF)

G: Lead Free Code

H: ID Code

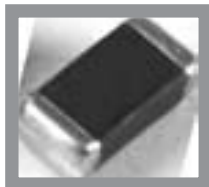
Size EIA (EIAJ)	0603(1608)
L	1.60±0.20
W	0.80±0.20
T	0.80±0.20
C	0.30±0.20

BW Part Number	Working Voltage	Cap	VariFVtor Voltage	Clamping Voltage	Peak Current	TranFVient Energy
	V/DC	pF	V@1mA	V@1A, 8/20μFV	A@8/20μFV	JouleFV@10/1000μFV
MVW1005V5R5C201FV	5.5	200	8(8~11)	20	20	0.05
MVW1005V5R5C481FV	5.5	480	8(8~11)	20	20	0.05
MVW1005V009C131FV	9	135	12(10.2~13.8)	23	20	0.05
MVW1005V011C071FV	11	75	15(12.75~17.25)	25	20	0.05
MVW1005V014C051FV	14	50	18(15.3~20.7)	30	20	0.05
MVW1005V018C051FV	18	45	24(21.6~26.4)	39	20	0.05
MVW1608V5R5C361FV	5.5	360	8(8~11)	20	30	0.1
MVW1608V009C301FV	9	300	12(10.2~13.8)	23	30	0.1
MVW1608V014C211FV	14	210	18(15.3~20.7)	30	30	0.1
MVW1608V018C161FV	18	160	24(21.6~26.4)	39	30	0.1
MVW1608V022C151FV	22	145	27(24.3~29.7)	44	30	0.1
MVW1608V026C131FV	26	130	33(29.7~36.3)	54	30	0.1
MVW1608V030C111FV	30	110	39(35.1~42.9)	65	30	0.1
MVW1608V038C091FV	38	90	47(42.3~51.7)	77	30	0.1

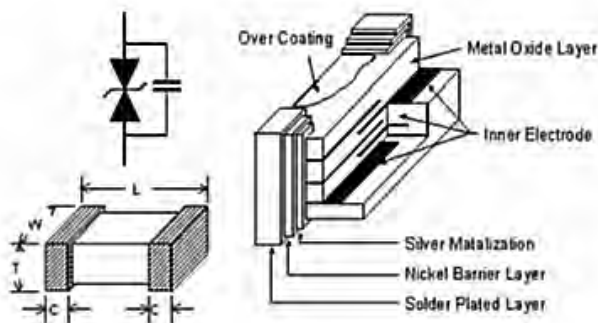
MVS series

FEATURES

1. Lead free type
2. SMD type zinc oxide based ceramic chip
3. Insulator over coat keeps excellent low and stable leakage current
4. Plating termination provided good solder-ability characteristic
5. Wide operating voltage range
6. Quick response time (<1ns)
7. Low clamping voltage
8. Meet IEC 61000-4-2 standard
9. Low capacitance can meet high speed single transient voltage protection



DIMENSIONS



APPLICATIONS

1. For Mother board, Note book, Cellular phone, PDA, Handheld device, DSC, DV and Set Top box etc
2. For Vcc line and low frequency signal line over voltage protection

PARTNUMBER

MVS	1608	V	004	C	100	F	V
A	B	C	D	E	F	G	H

A: Series

B: Dimension

C: Voltage

D: Max. AC working voltage

E: Capacitance

F: Typical Capacitance: 100 = 10(pF)

G: Lead Free Code

H: ID Code

Size EIA (EIAJ)	0603(1608)
L	1.60±0.20
W	0.80±0.20
T	0.80±0.20
C	0.30±0.20



Varistor

SMD



MVS series

MVS 1005

BW Part Number	Working Voltage	Cap	Varistor Voltage	Clamping Voltage	Leakage Current
	V/DC	pF	V@1mA	V@1A, 8/20μS	nA(Max)
MVS1005V005C101FV	5	100		52	1
MVS1005V005C061FV	5	56		52	1
MVS1005V005C031FV	5	33		52	1
MVS1005V005C021FV	5	22	7.6~12	52	1
MVS1005V005C011FV	5	10	7.6~12	72	1
MVS1005V005C6R0FV	5	4~9	7.6~12	72	1
MVS1005V012C101FV	12	100		55	1
MVS1005V012C061FV	12	56		55	1
MVS1005V012C031FV	12	33		55	1
MVS1005V012C021FV	12	22		55	1
MVS1005V012C011FV	12	10		72	1
MVS1005V012C6R0FV	12	4~9	22~34	72	1
MVS1005V024C3R2FV	24	2~4.5		200	1
MVS1005V024C3R5FV	24	1.6~5.4	46~60	200	1
MVS1005V024C1R1FV	24	0.8~1.5	46~60	200	1
MVS1005V024C0R3FV	24	0.15~0.45		350	1

MVS 1608

BW Part Number	Working Voltage	Cap	Varistor Voltage	Clamping Voltage	Leakage Current
	V/DC	pF	V@1mA	V@1A, 8/20μS	nA(Max)
MVS1608V005C101FV	5	100		36	1
MVS1608V005C061FV	5	56		36	1
MVS1608V005C031FV	5	33		34	1
MVS1608V005C021FV	5	22	7.6~12	34	1
MVS1608V005C011FV	5	10	7.6~12	65	1
MVS1608V005C6R0FV	5	4~9	7.6~12	55	1
MVS1608V012C101FV	12	100		55	1
MVS1608V012C061FV	12	56		55	1
MVS1608V012C031FV	12	33		55	1
MVS1608V012C021FV	12	22		55	1
MVS1608V012C011FV	12	10		60	1
MVS1608V012C6R0FV	12	4~9	22~34	85	1
MVS1608V024C3R2FV	24	2~4.5		240	1
MVS1608V024C3R5FV	24	1.6~5.4	46~60	-	1
MVS1608V024C1R1FV	24	0.8~1.5	46~60	200	1
MVS1608V024C0R3FV	24	0.15~0.45		350	1

MVA series

FEATURES

1. SMD type zinc oxide based ceramic chip
2. Lead free plating termination provided good solderability characteristic
3. Insulator overcoat keeps excellent low and stable leakage current
4. Quick response time (<1ns)
5. Low clamping voltage
6. High transient current capability
7. Meet IEC 61000-4-2, 61000-4-4, and 61000-4-5 standard



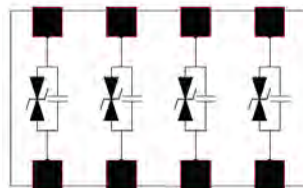
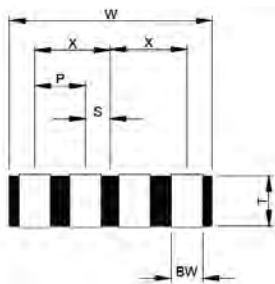
APPLICATIONS

- Applications for Mother Board, Notebook, Cellular Phone, PDA, handheld device,
- DSC, DV, Scanner, and Set-Top Box... etc.

PARTNUMBER

MVA	0805	V	004	C	330	F	V
A	B	C	D	E	F	G	H

DIMENSIONS



Dimension (mm)	
L	1.25±0.20
W	2.00±0.20
T	0.90 MAX
BW	0.20±0.1
BL	0.20±0.1
P	0.50REF
X	0.75±0.10
S	0.25±0.1.0

- A: Series
 B: Dimension
 C: Voltage
 D: Max. AC working voltage
 E: Capacitance
 F: Typical Capacitance: 330 = 33(pF)
 G: Lead Free Code
 H: ID Code

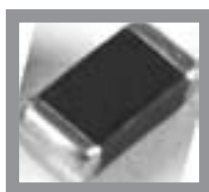
BW Part Number	Working Voltage		Cap	Varistor Voltage	Clamping Voltage	Peak Current	Transient Energy
	Vrms	V/DC	pF	V@1mA	V@1A, 8/20μS	A@8/20μS	Joule@10/1000μS
MVA0805100M004	4	5.5	10	12	34	1	0.005
MVA0805330M004	4	5.5	33	12	28	10	0.01
MVA0805500M004	4	5.5	50	12	27	10	0.01
MVA0805150K014	14	18	15	28	58	5	0.01



MVM series

FEATURES

1. Lead free type
2. Protection against high ESD voltages
3. Quick response time ($<0.5\text{ns}$)
4. Low capacitance ($<0.05\text{pF}$)
5. Low leakage current
6. High transient current capability
7. Bi – directional



APPLICATIONS

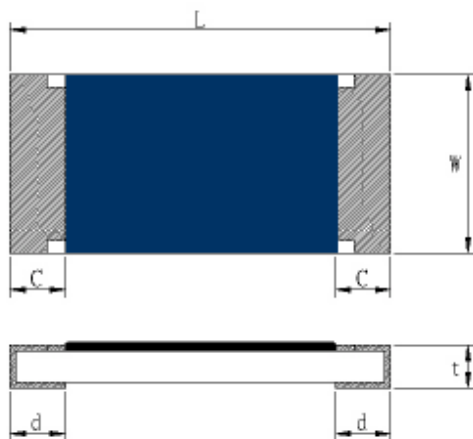
1. Applications for Mother Board, Notebook, Cellular Phone, PDA, handheld device,
2. DSC, DV, Scanner, and Set-Top Box... etc.

PARTNUMBER

MVM	1608	V	004	C	330	F	V
A	B	C	D	E	F	G	H

A: Series
 B: Dimension
 C: Voltage
 D: Max. AC working voltage
 E: Capacitance
 F: Typical Capacitance: 330 = 33(pF)
 G: Lead Free Code
 H: ID Code

DIMENSIONS



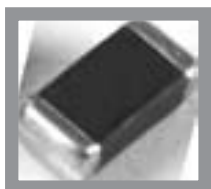
Type	Dimensions(mm)				
	L	W	C	d	t
0402	1.0 $\pm$ 0.1	0.52 $\pm$ 0.05	0.2 $\pm$ 0.1	0.25 $\pm$ 0.1	0.36 $\pm$ 0.05
0603	1.6 $\pm$ 0.1	0.8 $\pm$ 0.1	0.3 $\pm$ 0.2	0.35 $\pm$ 0.2	0.45 $\pm$ 0.1

BW Part Number	Working Voltage	Cap	Clamping Voltage	Leakage Current
	V/DC	pF	V@1A, 8/20 μ S	nA(Max)
MVM1005V024C0R2	24	0.2	25	1
MVM1005V024CR05	24	0.05	25	1
MVM1608V024C0R2	24	0.2	25	1
MVM1608V024CR05	24	0.05	25	1

BSP series

FEATURES

1. The operation temperature range enlarge from "-40°C~+85°C" to "-40°C~+125°C"
2. The non-linear coefficient α is higher than 25.
3. The maximum peak current is 3000A for +/- 1 times.
4. Before surge test, the leakage current is lower than 1uA.
5. ESD ability is contact 30KV for +/- 1000 times
6. The clamped voltage can lower than 25V.



APPLICATIONS

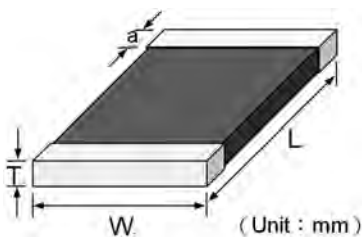
- Applications for Mother Board, Notebook, Cellular Phone, PDA, handheld device,
- DSC, DV, Scanner, and Set-Top Box... etc.

PARTNUMBER

BSP	1206	V	3R3	—	6K	F	V
A	B	C	D		E	F	G

A: Series
 B: Dimension
 C: Voltage
 D: Max. AC working voltage 3R3 = 3.3V
 E: Surge Current
 F: Lead Free Code
 G: ID Code

DIMENSIONS



Model	1206 Series	1210 Series
Length(L)	3.2 ±0.2mm	3.2 ±0.3mm
Width(W)	1.67 ±0.15mm	2.5 ±0.2mm
Thickness(T)	1.70 mm Max	2.50 mm Max
Termination(a)	0.5±0.2mm	0.5±0.25mm

BW Part Number	Working Voltage	Brake down Voltage	Clamping Voltage	Surge Current
	V/DC	V	V@1A, 8/20μS	kV(10*700us)
BSP1206V3R3-6K	3.3	12	< 25	6
BSP1206V3R3-4K	3.3	12	< 25	4
BSP1210A024-6K	24(AC)	47	< 75	6
BSP1210A024-4K	24(AC)	47	< 75	4
BSP1210V057-6K	57	75	< 100	6
BSP1210V057-4K	57	75	< 100	4