

MP-4

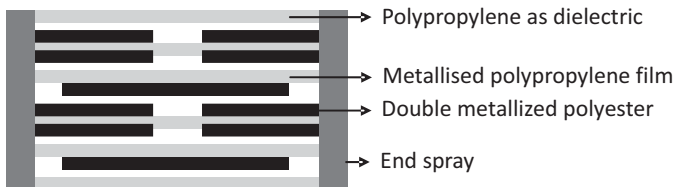


Highlights

- Self-healing property
- High DV / DT
- Low ESR
- Low loss polypropylene dielectric
- Reference standard-IEC 61071
- Flame retardant UL94 - V0, ROHS compliant

Construction

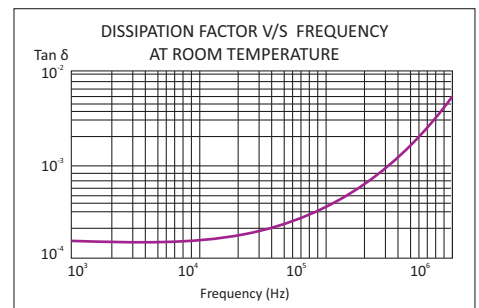
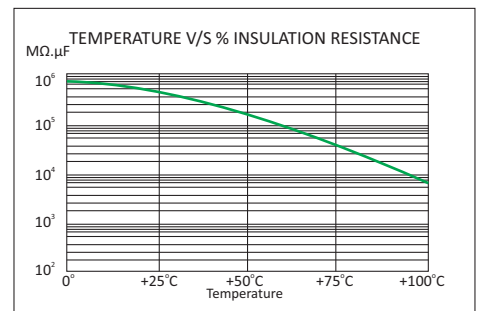
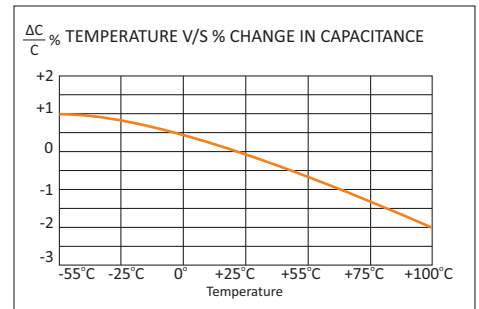
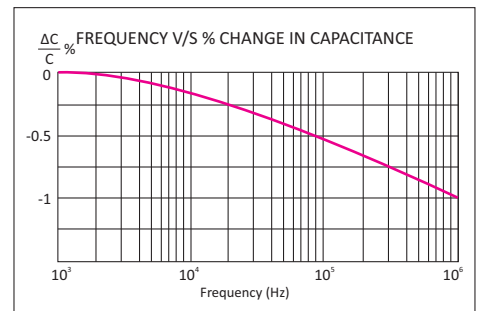
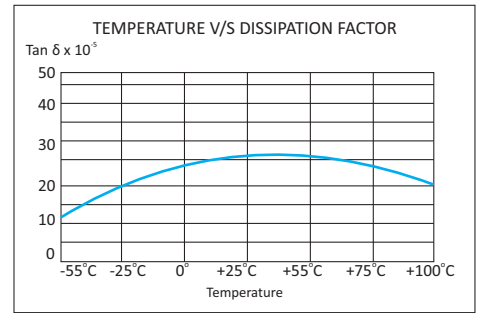
Extended double metallised polyester electrodes with metallised polypropylene dielectric internal series connection



Applications

These capacitors are used in high voltage, high current and high pulse applications such as:

- IGBT protection circuits
- Snubber networks
- Energy conversion and control in power electronics
- Protection circuits in SMPS



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Technical Specifications

Physical Characteristics


- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Dielectric material ▪ Electrode material ▪ Winding construction ▪ Enclosure | <p>Polypropylene film.</p> <p>Double metallized polyester and metallized polypropylene film.</p> <p>Extended double metallised polyester electrodes with metallised polypropylene dielectric internal series connection</p> <p>Preformed UL 94 V-0 plastic case with thermosetting resin-fill</p> |
|--|---|

Electrical Characteristics

- | | | | | | |
|--|---|--------------|------------|--------------|-----------|
| <ul style="list-style-type: none"> ▪ Capacitance range ▪ Capacity tolerance ▪ Rated voltage VDC ▪ Rated voltage VAC ▪ Test voltage between terminals ▪ Test voltage terminal to case ▪ Dissipation factor (Tan d) ▪ Temperature range ▪ Insulation resistance at 25°C & at a test voltage of 500 VDC applied for 1 minute | <p>0.1 MFD to 6.3 MFD</p> <p>±5%(J), ±10%(K)</p> <p>700, 850, 1000, 1200, 1500, 2000, 2500, 3000</p> <p>420, 500, 575, 630, 650, 700, 725, 750</p> <p>2 x rated voltage VDC for 2 seconds</p> <p>3KVAC at 50Hz for 60 seconds</p> <p>≤0.0005 at 1 KHz and 25°C</p> <p>-40°C to +85°C</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">C ≤ 0.33 MFD</td> <td style="width: 50%; text-align: right;">≥100,000MΩ</td> </tr> <tr> <td>C > 0.33 MFD</td> <td style="text-align: right;">≥30,000MΩ</td> </tr> </table> | C ≤ 0.33 MFD | ≥100,000MΩ | C > 0.33 MFD | ≥30,000MΩ |
| C ≤ 0.33 MFD | ≥100,000MΩ | | | | |
| C > 0.33 MFD | ≥30,000MΩ | | | | |

Marking on Capacitors

Each capacitor will have the following information printed on it, sequentially:

- The Company's symbol  followed by the words ALCON
- The capacitor grade viz MP-4
- The capacitance value MFD
- The rated voltage VDC
- Capacity tolerance and manufacturing code
- Part number on non-standard capacitors

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Standard Capacitor Values

Working Voltage 700 VDC (420VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
1.000	B1	615	615.00	15.50	3.30	SI1U000700B1K__OMP4
1.200	H7	615	738.00	17.50	3.10	SI1U200700H7K__OMP4
1.500	H1	615	922.50	19.00	2.80	SI1U500700H1K__OMP4
2.000	H1,H4	615	1230.00	23.50	2.50	SI2U000700_K__OMP4
2.200	H1	615	1353.00	24.00	2.40	SI2U200700H1K__OMP4
2.500	H4	615	1537.50	24.50	2.20	SI2U500700H4K__OMP4
3.000	E3	400	1200.00	27.50	2.10	SI3U000700E3K__OMP4
3.300	E3	400	1320.00	28.00	2.10	SI3U300700E3K__OMP4
3.500	C2	400	1400.00	28.50	2.00	SI3U500700C2K__OMP4
4.000	H5,C2	400	1600.00	29.00	2.30	SI4U000700_K__OMP4
4.700	H6,C2	400	1880.00	32.00	2.10	SI4U700700_K__OMP4
5.000	H6,C2	400	2000.00	32.00	2.10	SI5U000700_K__OMP4
5.600	H6,C2	400	2240.00	33.50	2.00	SI5U600700_K__OMP4
6.300	H6,C2	400	2520.00	34.50	1.90	SI6U300700_K__OMP4

Working Voltage 850 VDC (500VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.680	B1	760	516.80	15.00	3.50	SI0U680850B1K__OMP4
0.820	H7	760	623.20	16.50	3.10	SI0U820850H7K__OMP4
1.000	H7	760	760.00	18.50	2.70	SI1U000850H7K__OMP4
1.500	H1	760	1140.00	24.50	2.20	SI1U500850H1K__OMP4
1.750	H1,H4	760	1330.00	25.50	2.10	SI1U750850_K__OMP4
2.000	H4	760	1520.00	28.00	2.00	SI2U000850H4K__OMP4
2.200	H4	760	1672.00	28.50	2.00	SI2U200850H4K__OMP4
2.500	H4	760	1900.00	29.00	1.90	SI2U500850H4K__OMP4
3.000	H5,E3	450	1350.00	29.50	2.20	SI3U000850_K__OMP4
3.300	H5,E3	450	1485.00	30.00	2.10	SI3U300850_K__OMP4
4.000	H6,C2	450	1800.00	33.50	1.90	SI4U000850_K__OMP4
4.700	H6,C2	450	2115.00	34.50	1.80	SI4U700850_K__OMP4
5.600	H6,C2	360	2016.00	28.50	3.20	SI5U600850_K__OMP4

Working Voltage 1000 VDC (575VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.470	B1	880	413.60	14.00	3.90	SI0U471000B1K__OMP4
0.680	H7	880	598.40	16.50	3.30	SI0U681000H7K__OMP4
0.750	H7,H1	880	660.00	17.50	3.10	SI0U751000_K__OMP4
1.000	H1	880	880.00	22.50	3.10	SI1U001000H1K__OMP4
1.200	H1	880	1056.00	23.50	2.50	SI1U201000H1K__OMP4
1.500	H1	880	1320.00	25.00	2.20	SI1U501000H1K__OMP4
1.750	H4	880	1540.00	27.00	2.10	SI1U751000H4K__OMP4
2.000	H4	880	1760.00	28.00	2.00	SI2U001000H4K__OMP4
2.200	H4	750	1650.00	24.00	3.30	SI2U201000H4K__OMP4
2.200	H5	505	1111.00	27.50	2.50	SI2U201000H5K__OMP4
2.500	H4	750	1875.00	24.50	3.10	SI2U501000H4K__OMP4
3.000	H5,C2	450	1350.00	24.50	3.70	SI3U001000_K__OMP4
3.000	H6	505	1515.00	32.00	2.10	SI3U001000H6K__OMP4
3.300	H5,C2	450	1485.00	25.50	3.50	SI3U301000_K__OMP4
3.300	H6,C2	505	1666.50	32.50	2.00	SI3U301000_K__OMP4
4.000	H6,C2	450	1800.00	29.50	3.10	SI4U001000_K__OMP4

Custom-designed capacitors are available on request
Refer to "Capacitor Drawing" on page 7 to 11

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Standard Capacitor Values

Working Voltage 1200 VDC (630 VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.330	B1	1010	333.30	12.00	5.10	SI0U331200B1K__OMP4
0.330	H7	1010	333.30	12.50	5.10	SI0U331200H7K__OMP4
0.390	B1	1010	393.90	13.00	4.60	SI0U391200B1K__OMP4
0.390	H7	1010	393.90	14.00	4.60	SI0U391200H7K__OMP4
0.470	H7	1010	474.70	15.00	4.10	SI0U471200H7K__OMP4
0.560	H7	1010	565.60	16.00	3.70	SI0U561200H7K__OMP4
0.680	H1	1010	686.80	20.00	3.30	SI0U681200H1K__OMP4
0.820	H1	1010	828.20	21.00	3.00	SI0U821200H1K__OMP4
1.000	H1	1010	1010.00	22.50	2.70	SI1U001200H1K__OMP4
1.200	H1	870	1044.00	20.00	4.10	SI1U201200H1K__OMP4
1.200	H4	1010	1212.00	25.00	2.40	SI1U201200H4K__OMP4
1.500	H4	1010	1515.00	27.50	2.10	SI1U501200H4K__OMP4
2.000	H4	870	1740.00	24.50	3.30	SI2U001200H4K__OMP4
2.000	H5	580	1160.00	28.00	2.40	SI2U001200H5K__OMP4
2.200	H5,C2	500	1100.00	23.50	4.10	SI2U201200__K__OMP4
2.200	H6,C2	580	1276.00	31.00	2.30	SI2U201200__K__OMP4
2.500	H5,C2	500	1250.00	24.50	3.80	SI2U501200__K__OMP4
2.500	H6,C2	580	1450.00	32.50	2.10	SI2U501200__K__OMP4
3.000	H6,C2	500	1500.00	28.00	3.40	SI3U001200__K__OMP4
3.300	H6	500	1650.00	28.50	3.20	SI3U301200H6K__OMP4

Working Voltage 1500 VDC (650 VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.220	B1	1225	269.50	11.00	6.10	SI0U221500B1K__OMP4
0.330	H7	1225	404.25	14.00	4.60	SI0U331500H7K__OMP4
0.390	H7	1225	477.75	14.50	4.30	SI0U391500H7K__OMP4
0.470	H1	1225	575.75	19.00	3.70	SI0U471500H1K__OMP4
0.680	H1	1225	833.00	21.00	3.10	SI0U681500H1K__OMP4
0.750	H1	1225	918.75	22.00	2.80	SI0U751500H1K__OMP4
1.000	H4	1225	1225.00	23.00	2.50	SI1U001500H4K__OMP4
1.200	H5,C2	730	876.00	26.00	2.80	SI1U201500__K__OMP4
1.500	H6,C2	730	1095.00	29.50	2.50	SI1U501500__K__OMP4
1.800	H6,C2	730	1314.00	30.50	2.30	SI1U801500__K__OMP4
2.200	H6,C2	575	1265.00	26.50	3.70	SI2U201500__K__OMP4
2.500	H6,C2	575	1437.50	27.50	3.40	SI2U501500__K__OMP4

Custom-designed capacitors are available on request
Refer to "Capacitor Drawing" on page 7 to 11

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Standard Capacitor Values

Working Voltage 2000 VDC (700 VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.100	B1	1610	161.00	8.00	12.50	SI0U102000B1K__OMP4
0.100	H7	1610	161.00	8.50	12.50	SI0U102000H7K__OMP4
0.150	H7	1610	241.50	11.00	7.50	SI0U152000H7K__OMP4
0.220	H7	1610	354.20	13.50	5.10	SI0U222000H7K__OMP4
0.330	H7	1220	402.60	12.50	7.40	SI0U332000H7K__OMP4
0.330	H1	1610	531.30	18.00	4.10	SI0U332000H1K__OMP4
0.390	H1	1610	627.90	19.50	3.60	SI0U392000H1K__OMP4
0.470	H1	1220	573.40	16.50	6.00	SI0U472000H1K__OMP4
0.470	H4	1610	756.70	22.00	3.30	SI0U472000H4K__OMP4
0.560	H4	1610	901.60	23.00	3.00	SI0U562000H4K__OMP4
0.680	H1,H4	1220	829.60	18.00	5.00	SI0U682000__K__OMP4
0.680	H5,C2	935	635.80	23.00	3.50	SI0U682000__K__OMP4
0.820	H4	1220	1000.40	20.00	4.60	SI0U822000H4K__OMP4
0.820	H5,C2	935	766.70	24.50	3.10	SI0U822000__K__OMP4
1.000	H4	1220	1220.00	21.50	4.10	SI1U002000H4K__OMP4
1.000	H6,C2	935	935.00	28.00	2.80	SI1U002000__K__OMP4
1.200	H5,C2	725	870.00	22.50	4.50	SI1U202000__K__OMP4
1.200	H6,C2	935	1122.00	29.50	2.40	SI1U202000__K__OMP4
1.500	H6,C2	725	1087.50	26.00	4.00	SI1U502000__K__OMP4

Working Voltage 2500 VDC (725 VAC)

Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.100	B1	2060	206.00	8.50	11.00	SI0U102500B1K__OMP4
0.100	H7	2060	206.00	9.00	11.00	SI0U102500H7K__OMP4
0.150	H7	2060	309.00	11.50	7.20	SI0U152500H7K__OMP4
0.220	H1	2060	453.20	16.00	5.20	SI0U222500H1K__OMP4
0.330	H1	2060	679.80	19.00	3.80	SI0U332500H1K__OMP4
0.470	H4	2060	968.20	23.00	3.00	SI0U472500H4K__OMP4
0.560	H5	1155	646.80	23.00	3.50	SI0U562500H5K__OMP4
0.680	H6	1155	785.40	26.00	3.20	SI0U682500H6K__OMP4
0.820	H6	1155	947.10	27.50	2.90	SI0U822500H6K__OMP4
1.000	H6	930	930.00	23.50	4.60	SI1U002500H6K__OMP4
1.200	H6	930	1116.00	25.50	4.10	SI1U202500H6K__OMP4

Custom-designed capacitors are available on request
 Refer to "Capacitor Drawing" on page 7 to 11

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Standard Capacitor Values

Working Voltage 3000 VDC (750 VAC)

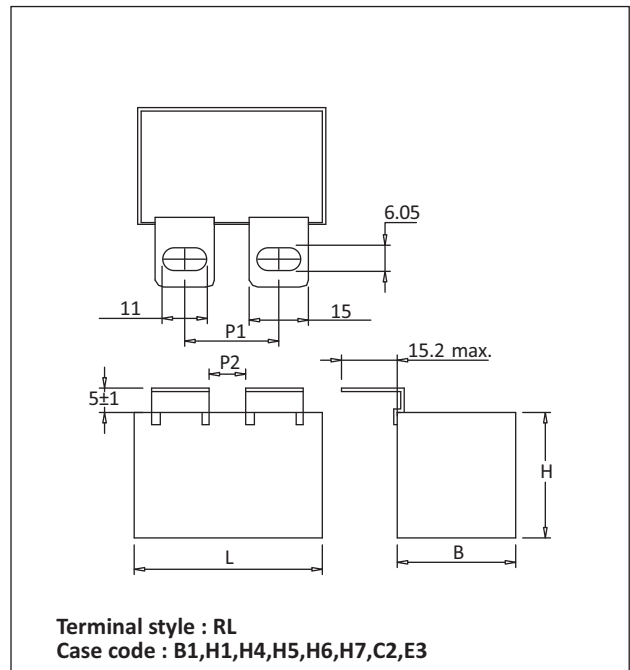
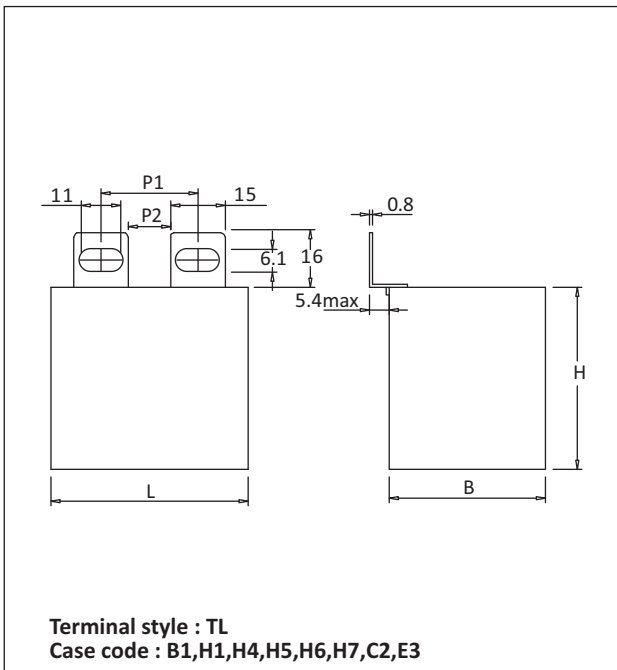
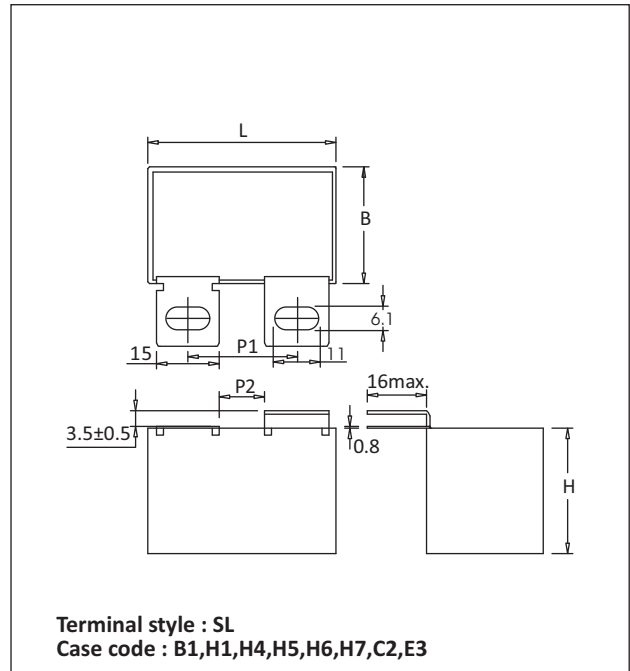
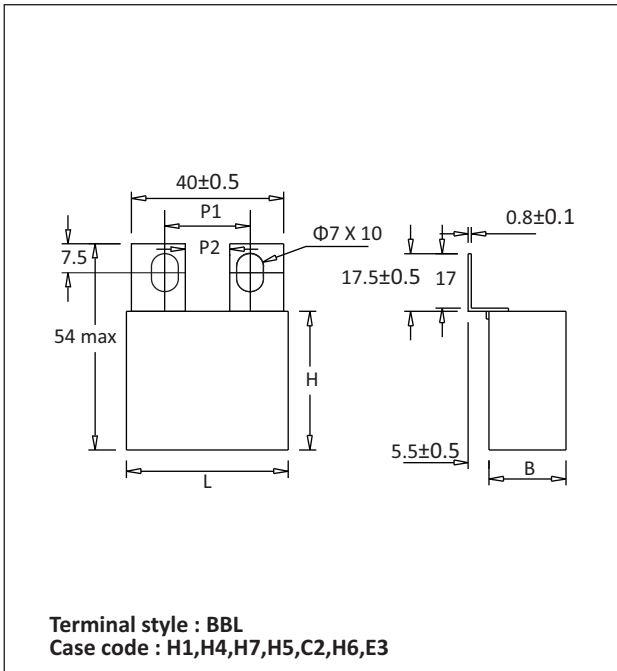
Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I Peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Ordering Code*
0.047	B1	2515	118.20	7.00	16.50	SIU0473000B1K__OMP4
0.047	H7	2515	118.20	7.50	16.50	SIU0473000H7K__OMP4
0.068	B1	2515	171.02	8.00	11.50	SIU0683000B1K__OMP4
0.068	H7	2515	171.02	9.00	11.50	SIU0683000H7K__OMP4
0.100	H1	2515	251.50	12.50	8.50	SIU0103000H1K__OMP4
0.150	H1	2515	377.25	15.00	6.00	SIU0153000H1K__OMP4
0.220	H1	2050	451.00	14.50	8.20	SIU0223000H1K__OMP4
0.220	H4	2515	553.30	19.00	4.30	SIU0223000H4K__OMP4
0.330	H1	2050	676.50	16.50	6.10	SIU0333000H1K__OMP4
0.330	H5	1400	462.00	21.00	4.30	SIU0333000H5K__OMP4
0.470	H4	2050	963.50	19.50	5.00	SIU0473000H4K__OMP4
0.470	H6	1410	662.70	24.00	3.80	SIU0473000H6K__OMP4
0.680	H6,C2	1150	782.00	22.00	5.20	SIU0683000__K__OMP4
0.820	H6,C2	1150	943.00	24.00	4.70	SIU0823000__K__OMP4

Custom-designed capacitors are available on request

Refer to "Capacitor Drawing" on page 7 to 11

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Capacitor Drawings and Terminal Styles

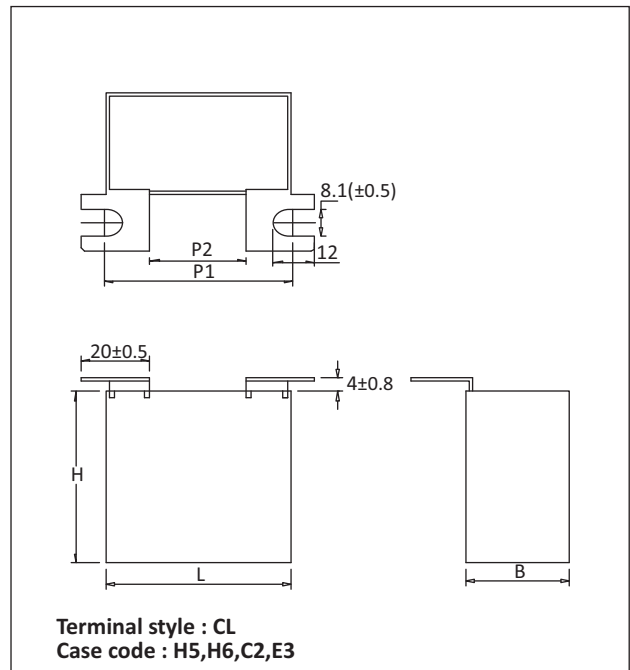
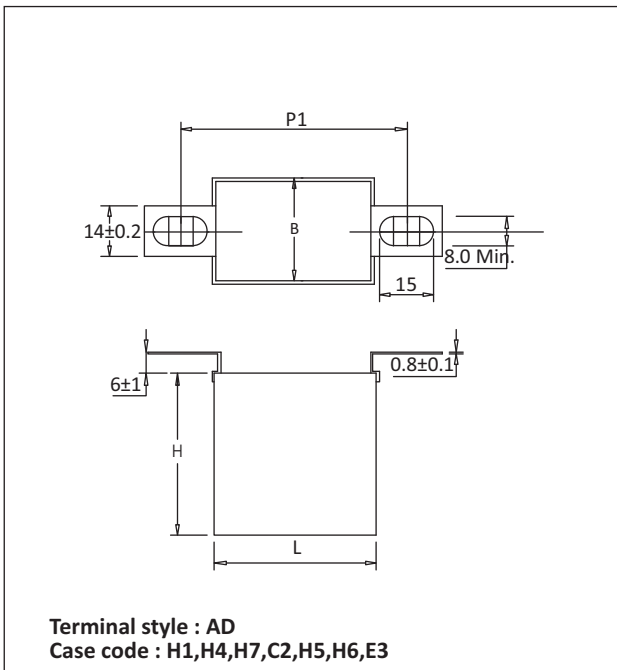
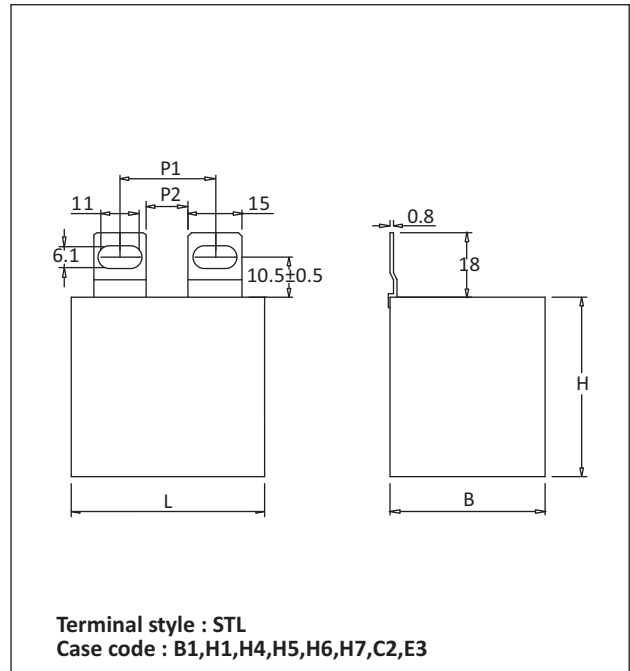
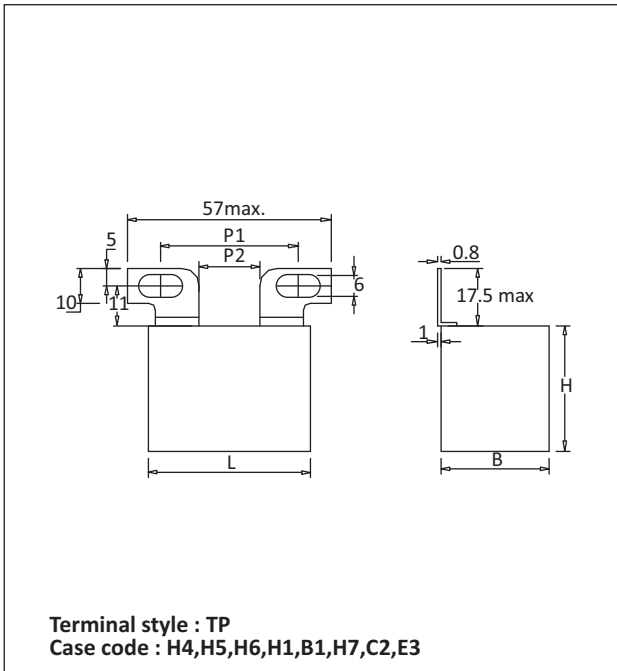


Dimensions in mm

For details see Case Code table on page 12 & 13

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Capacitor Drawings and Terminal Styles

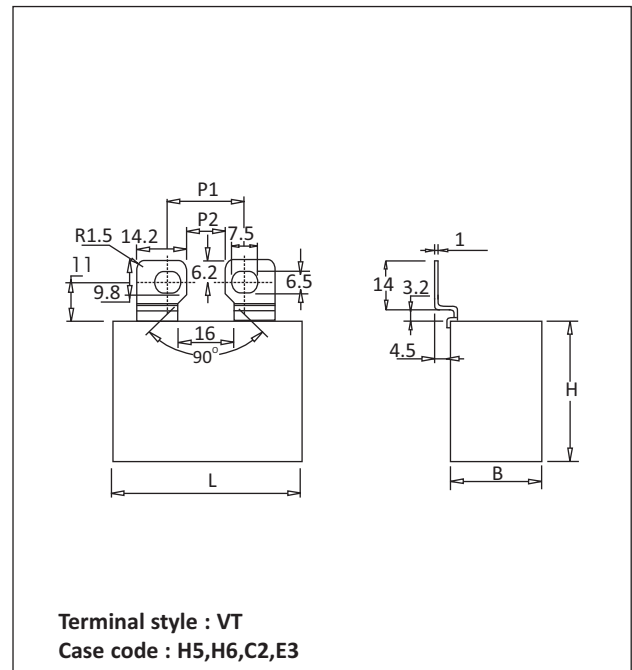
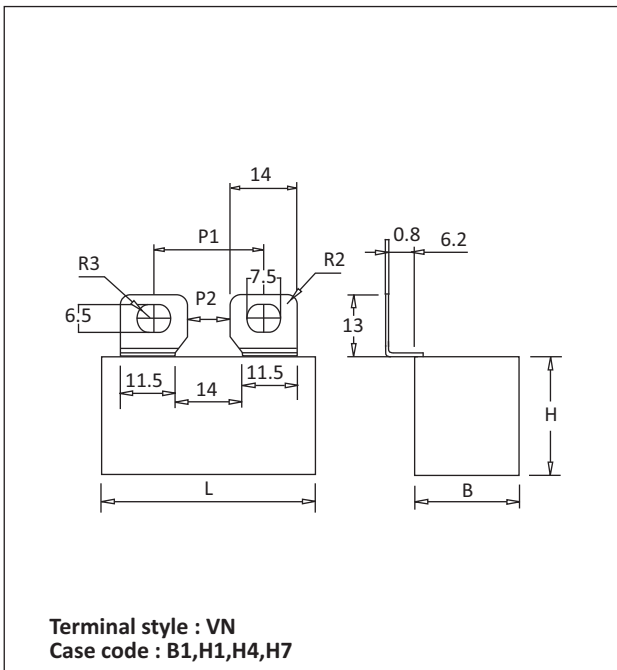
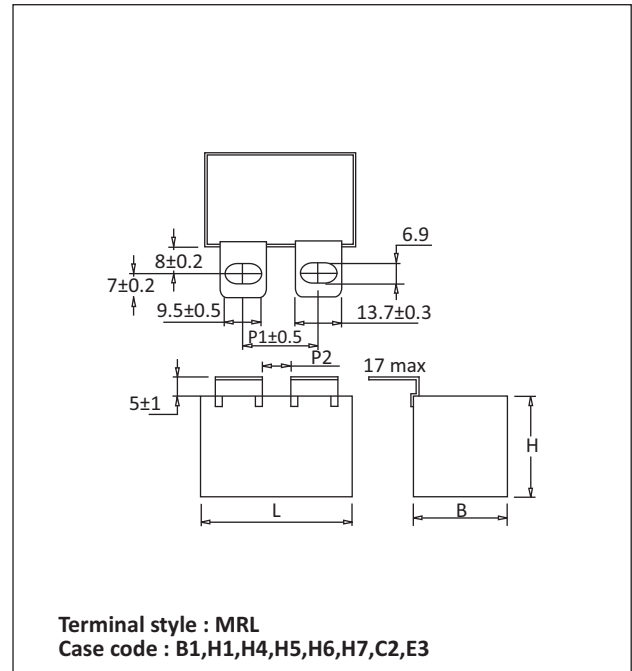
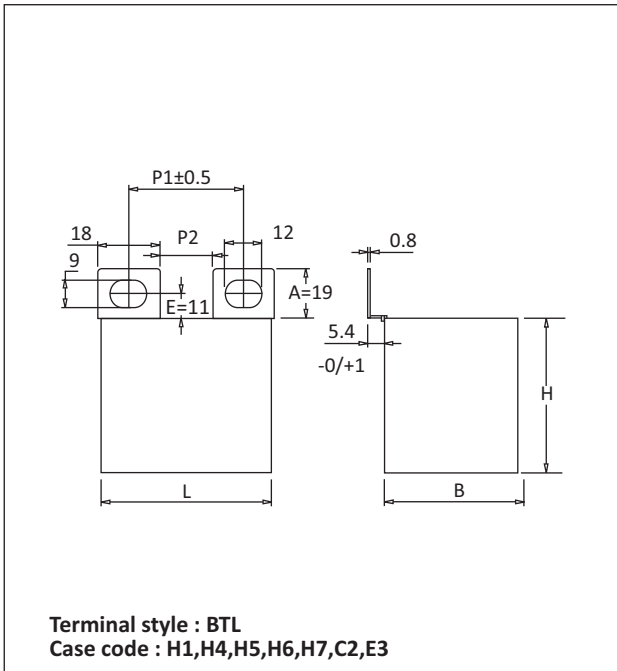


Dimensions in mm

For details see Case Code table on page 12 & 13

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Capacitor Drawings and Terminal Styles

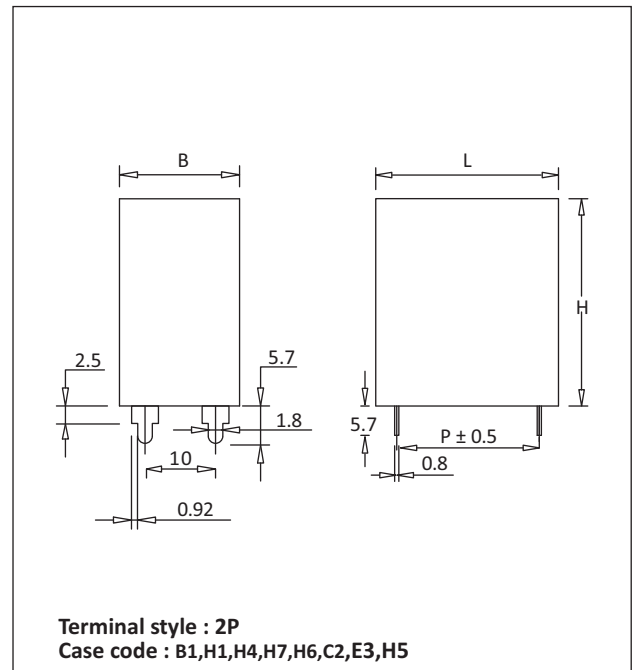
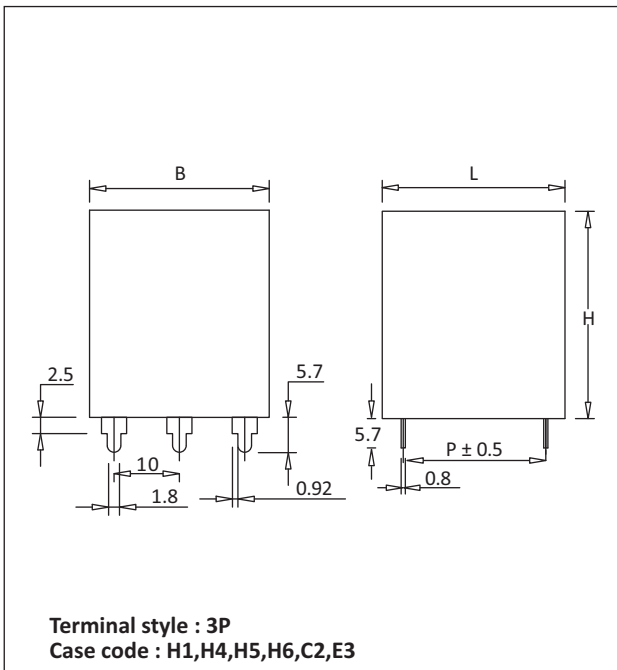
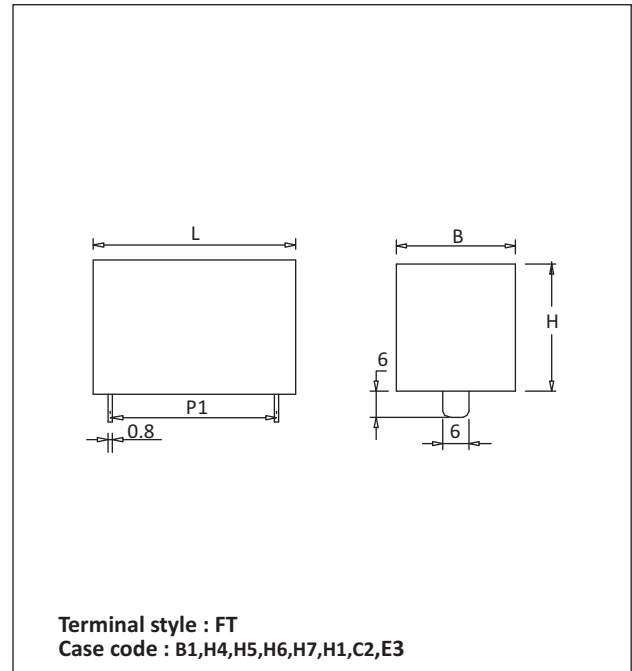
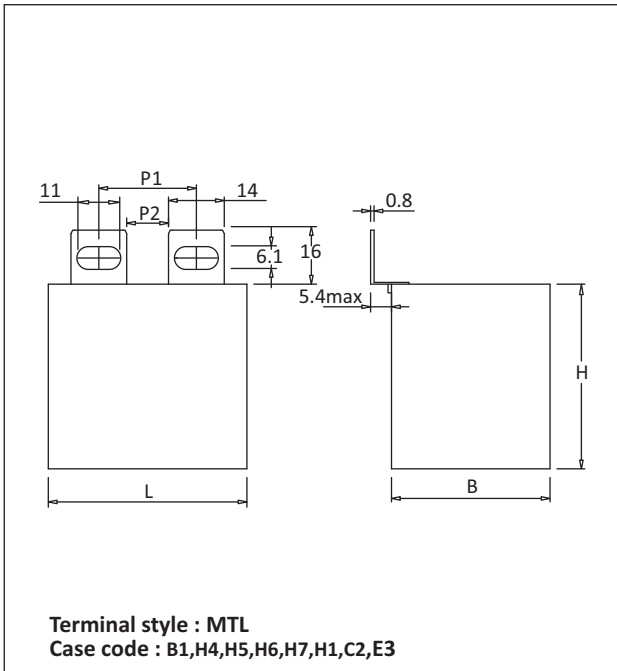


Dimensions in mm

For details see Case Code table on page 12 & 13

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Capacitor Drawings and Terminal Styles

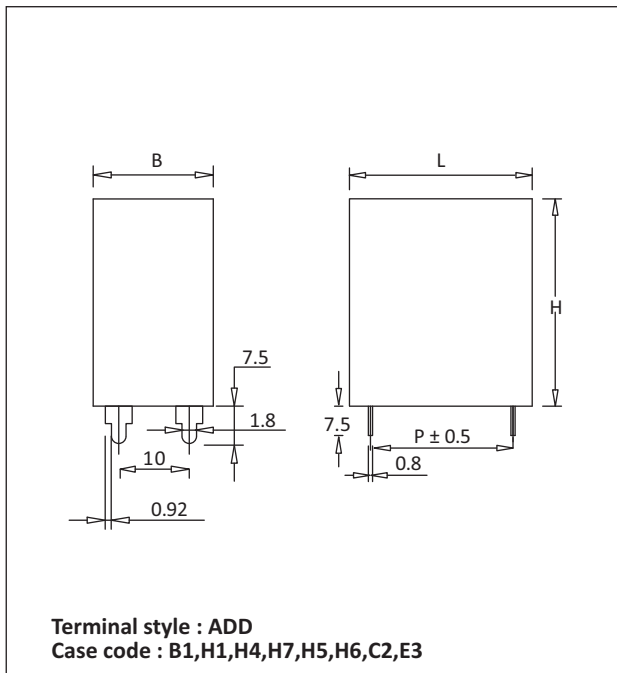


Dimensions in mm

For details see Case Code table on page 12 & 13

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Capacitor Drawings and Terminal Styles



Dimensions in mm

For details see Case Code table on page 12 & 13

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Table of Case Codes and Dimensions

Case code	Dimensions in mm*			P1	P2	Terminal Styles
	B	H	L			
B1	17.00	29.00	41.50	37.50	-	FT,2P,ADD
B1	17.00	29.00	41.50	25.50	8.50	TL,RL,STL,SL
B1	17.00	29.00	41.50	38.50	17.00	TP
B1	17.00	29.00	41.50	24.50	10.50	MTL
B1	17.00	29.00	41.50	23.00	9.00	VN
B1	17.00	29.00	41.50	25.50	11.00	MRL
H1	33.50	35.50	42.50	37.50	-	FT,2P,3P,ADD
H1	33.50	35.50	42.50	25.50	8.50	TL,RL,STL,SL
H1	33.50	35.50	42.50	38.50	17.00	TP
H1	33.50	35.50	42.50	24.50	10.50	MTL
H1	33.50	35.50	42.50	57.50	-	AD
H1	33.50	35.50	42.50	25.00	7.00	BTL
H1	33.50	35.50	42.50	23.00	9.00	VN
H1	33.50	35.50	42.50	22.00	11.50	BBL
H1	33.50	35.50	42.50	25.50	11.00	MRL
H4	33.00	45.00	42.50	37.50	-	FT,3P,2P,ADD
H4	33.00	45.00	42.50	25.50	8.50	TL,RL,STL,SL
H4	33.00	45.00	42.50	38.50	17.00	TP
H4	33.00	45.00	42.50	24.50	10.50	MTL
H4	33.00	45.00	42.50	57.50	-	AD
H4	33.00	45.00	42.50	25.00	7.00	BTL
H4	33.00	45.00	42.50	23.00	9.00	VN
H4	33.00	45.00	42.50	22.00	11.50	BBL
H4	33.00	45.00	42.50	25.50	11.00	MRL
H5	30.00	45.00	57.50	48.50	-	FT,2P,3P,ADD
H5	30.00	45.00	57.50	27.00	11.50	TL,RL,STL,SL
H5	30.00	45.00	57.50	27.00	13.00	MTL
H5	30.00	45.00	57.50	37.00	19.00	BTL
H5	30.00	45.00	57.50	22.00	11.10	VT
H5	30.00	45.00	57.50	55.00	28.00	CL
H5	30.00	45.00	57.50	38.00	24.00	MRL
H5	30.00	45.00	57.50	22.00	11.50	BBL
H5	30.00	45.00	57.50	38.50	17.00	TP
H5	30.00	45.00	57.50	65-78	-	AD
H6	35.00	50.00	57.50	48.50	-	FT,2P,3P,ADD
H6	35.00	50.00	57.50	27.00	11.50	TL,RL,STL,SL
H6	35.00	50.00	57.50	27.00	13.00	MTL
H6	35.00	50.00	57.50	37.00	19.00	BTL
H6	35.00	50.00	57.50	22.00	11.10	VT
H6	35.00	50.00	57.50	55.00	28.00	CL
H6	35.00	50.00	57.50	38.00	24.00	MRL
H6	35.00	50.00	57.50	22.00	11.50	BBL
H6	35.00	50.00	57.50	38.50	17.00	TP
H6	35.00	50.00	57.50	65-78	-	AD
H7	24.50	27.50	42.50	37.50	-	FT,2P,ADD
H7	24.50	27.50	42.50	38.50	17.00	TP
H7	24.50	27.50	42.50	25.50	8.50	TL,RL,STL,SL
H7	24.50	27.50	42.50	24.50	10.50	MTL
H7	24.50	27.50	42.50	57.50	-	AD
H7	24.50	27.50	42.50	25.00	7.00	BTL
H7	24.50	27.50	42.50	23.00	9.00	VN
H7	24.50	27.50	42.50	22.00	11.50	BBL
H7	24.50	27.50	42.50	25.50	11.00	MRL

* Refer to "Capacitor Drawing" on page 7 to 11

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Table of Case Codes and Dimensions

Case code	Dimensions in mm*			P1	P2	Terminal Styles
	B	H	L			
C2	43.00	50.00	54.00	48.50	-	FT,2P,3P,ADD
C2	43.00	50.00	54.00	27.00	11.50	TL,RL,STL,SL
C2	43.00	50.00	54.00	27.00	13.00	MTL
C2	43.00	50.00	54.00	68.50	-	AD
C2	43.00	50.00	54.00	37.00	19.00	BTL
C2	43.00	50.00	54.00	55.00	28.00	CL
C2	43.00	50.00	54.00	22.00	11.10	VT
C2	43.00	50.00	54.00	25.50	11.00	MRL
C2	43.00	50.00	54.00	22.00	11.50	BBL
C2	43.00	50.00	54.00	38.50	17.00	TP
E3	35.00	46.00	54.00	48.50	-	FT,2P,3P,ADD
E3	35.00	46.00	54.00	27.00	11.50	TL,RL,STL,SL
E3	35.00	46.00	54.00	27.00	13.00	MTL
E3	35.00	46.00	54.00	68.50	-	AD
E3	35.00	46.00	54.00	37.00	19.00	BTL
E3	35.00	46.00	54.00	55.00	28.00	CL
E3	35.00	46.00	54.00	22.00	11.10	VT
E3	35.00	46.00	54.00	25.50	11.00	MRL
E3	35.00	46.00	54.00	22.00	11.50	BBL
E3	35.00	46.00	54.00	38.50	17.00	TP

* Refer to "Capacitor Drawing" on page 7 to 11

Precaution

1. These capacitors are not suitable for 'across the line' applications
2. VAC(rated): Frequency should be less than 1000Hz
3. VDC(rated): $1.4 \times V_{rms} + VDC$ should be less than rated VDC
4. MAX ESR = Typical ESR +30%