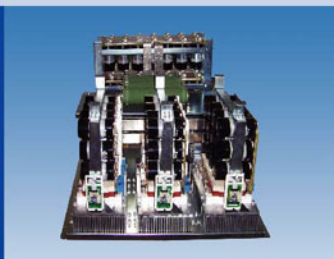




GNDC

昌碩科技股份有限公司



電解電容

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Product specifications are subject to change without notice.

IGBT SNUBBER CAPACITORS

ISC Box Type



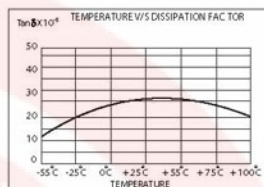
Highlights

- Self-healing property
- Low inductance
- High DV/DT
- Low ESR
- Low loss polypropylene dielectric
- Reference standard IEC 60384-14

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



Construction



Technical Specifications

Physical Characteristics

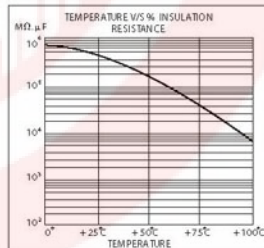
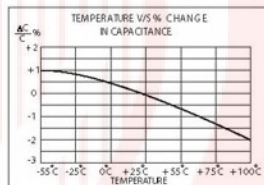
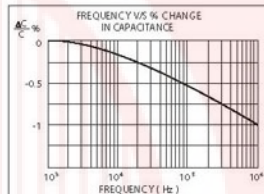
- Dielectric material
- Electrode material
- Winding construction
- Enclosure

Polypropylene film

Aluminium foil and metallised polypropylene film
Polypropylene film, aluminium foil plus metallised polypropylene film wound in a series connection
Preformed UL 94 V-0 plastic case with thermosetting resin fill

Electrical Characteristics

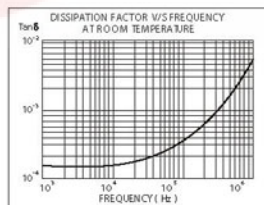
- Capacitance range 0.1MFD to 3.3MFD
 - Capacity tolerance $\pm 5\%$ (J), $\pm 10\%$ (K)
 - Rated voltage VDC 1000, 1250, 1500, 2000
 - Rated voltage VAC 480, 550, 630, 700
 - Test voltage between terminals 1.6 x rated voltage VDC for 2 seconds
 - Test voltage terminal to case 3KVAC at 50Hz for 60 seconds
 - Dissipation factor (Tan δ) ≤ 0.0005 at 1 KHz and 25°C
 - Temperature range -40°C to +85°C
 - Insulation resistance at 25°C $C \leq 0.33$ MFD $C > 0.33$ MFD
 - Insulation resistance at a test voltage of 500 VDC $\geq 100,000$ M Ω $\geq 30,000$ M Ω
- applied for 1 minute



Marking on Capacitors

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

- The Company's symbol (Q) followed by the words GNDC
- The capacitor grade viz ISC
- The capacitance value MFD
- The rated voltage VDC
- Capacity tolerance and manufacturing code
- Part number on non-standard capacitors



IGBT SNUBBER CAPACITORS

ISC Box Type

Explanation of Part Numbers

ISC **474P** **12** **B1**

Series Rated Capacitance Voltage Case Terminal

Standard Capacitor Values

Type	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	Terminal Styles
Working voltage 1000 VDC(480VAC)							
ISC224P10B1□□	0.22	B1	1200	264	18.20	4.20	TL,RL,SL,MTL
ISC224P10C1□□	0.22	C1	1200	264	18.20	4.20	CR,CT
ISC274P10B1□□	0.27	B1	1000	270	18.70	4.00	TL,RL,SL,MTL
ISC274P10C1□□	0.27	C1	1000	270	18.70	4.00	CR,CT
ISC334P10B1□□	0.33	B1	1000	330	19.70	3.70	TL,RL,SL,MTL
ISC334P10C1□□	0.33	C1	1000	330	19.70	3.70	CR,CT
ISC394P10B1□□	0.39	B1	1000	390	20.60	3.70	TL,RL,SL,MTL
ISC394P10C1□□	0.39	C1	1000	390	20.60	3.70	CR,CT
ISC474P10B1□□	0.47	B1	1000	470	21.10	3.50	TL,RL,SL,MTL
ISC474P10C1□□	0.47	C1	1000	470	21.10	3.50	TL,RL,SL,MTL
ISC564P10B1□□	0.56	B1	900	504	21.30	3.50	TL,RL,SL,MTL
ISC684P10B1□□	0.68	B1	900	612	21.30	3.50	TL,RL,SL,MTL
ISC754P10E1□□	0.75	E1	900	675	25.60	3.20	TL,RL,SL,MTL
ISC824P10E1□□	0.82	E1	900	738	26.00	3.00	TL,RL,SL,MTL
ISC105P10E1□□	1.00	E1	900	900	26.00	3.00	TL,RL,SL,MTL
ISC125P10B3□□	1.20	B3	900	1080	26.00	2.50	TL,RL,SL,MTL
ISC155P10B3□□	1.50	B3	900	1350	26.00	2.50	TL,RL,SL,MTL
ISC175P10E2□□	1.75	E2	800	1400	28.00	2.50	TL,RL,SL,MTL
ISC205P10E2□□	2.00	E2	800	1600	28.20	2.50	TL,RL,SL,MTL
ISC225P10E2□□	2.20	E2	700	1540	28.50	2.40	TL,RL,SL,MTL
ISC255P10E3□□	2.50	E3	600	1500	29.00	2.20	TL,RL,SL,MTL
ISC305P10C2□□	3.00	C2	600	1800	30.00	2.00	TL,RL,SL,MTL
ISC335P10C2□□	3.30	C2	600	1980	30.00	2.00	TL,RL,SL,MTL
Working voltage 1250 VDC(550VAC)							
ISC224P12B1□□	0.22	B1	1400	308	18.20	4.20	TL,RL,SL,MTL
ISC224P12C1□□	0.22	C1	1400	308	18.20	4.20	CR,CT
ISC274P12B1□□	0.27	B1	1200	324	18.70	4.00	TL,RL,SL,MTL
ISC274P12C1□□	0.27	C1	1200	324	18.70	4.00	CR,CT
ISC334P12B1□□	0.33	B1	1200	396	19.70	3.70	TL,RL,SL,MTL
ISC334P12C1□□	0.33	C1	1200	396	19.70	3.70	CR,CT
ISC394P12B1□□	0.39	B1	1200	468	20.60	3.70	TL,RL,SL,MTL
ISC394P12C1□□	0.39	C1	1200	468	20.60	3.70	CR,CT
ISC474P12B1□□	0.47	B1	1200	564	21.10	3.50	TL,RL,SL,MTL
ISC564P12E1□□	0.56	E1	1100	616	21.30	3.50	TL,RL,SL,MTL
ISC684P12E1□□	0.68	E1	1100	748	21.30	3.50	TL,RL,SL,MTL
ISC754P12E1□□	0.75	E1	1100	825	25.80	3.20	TL,RL,SL,MTL
ISC824P12B2□□	0.82	B2	1100	902	26.00	3.00	TL,RL,SL,MTL
ISC105P12B2□□	1.00	B2	1100	1100	26.00	3.00	TL,RL,SL,MTL
ISC125P12E2□□	1.20	E2	800	960	26.00	2.50	TL,RL,SL,MTL
ISC155P12E2□□	1.50	E2	800	1200	26.00	2.50	TL,RL,SL,MTL
ISC175P12E3□□	1.75	E3	800	1400	28.00	2.50	TL,RL,SL,MTL

IGBT SNUBBER CAPACITORS

ISC Box Type

Explanation of Part Numbers

ISC **474P** **12** **B1**

Series Rated Capacitance Voltage Case Terminal

Standard Capacitor Values

Type	Rated Capacitance MFD	Case Code	DV/DT V/ μ Sec	I peak Amps	Irrms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω	Terminal Styles
Working voltage 1250 VDC(550VAC)							
ISC205P12E3□□	2.00	E3	800	1600	28.20	2.50	TL,RL,SL,MTL
ISC225P12C2□□	2.20	C2	800	1760	28.50	2.40	TL,RL,SL,MTL
ISC255P12C2□□	2.50	C2	800	2000	28.00	2.20	TL,RL,SL,MTL
Working voltage 1500 VDC(630VAC)							
ISC224P15B1□□	0.22	B1	1600	352	18.20	4.20	TL,RL,SL,MTL
ISC224P15C1□□	0.22	C1	1600	352	18.20	4.20	CR,CT
ISC274P15B1□□	0.27	B1	1400	378	18.70	4.00	TL,RL,SL,MTL
ISC274P15C1□□	0.27	C1	1400	378	18.70	4.00	CR,CT
ISC334P15B1□□	0.33	B1	1400	462	19.70	3.70	TL,RL,SL,MTL
ISC334P15C1□□	0.33	C1	1400	462	19.70	3.70	CR,CT
ISC394P15E1□□	0.39	E1	1400	546	20.60	3.70	TL,RL,SL,MTL
ISC474P15E1□□	0.47	E1	1400	658	21.10	3.50	TL,RL,SL,MTL
ISC564P15E2□□	0.56	E2	1300	728	21.30	3.50	TL,RL,SL,MTL
ISC684P15E2□□	0.68	E2	1300	894	21.30	3.50	TL,RL,SL,MTL
ISC754P15E2□□	0.75	E2	1300	975	25.60	3.20	TL,RL,SL,MTL
ISC824P15E2□□	0.82	E2	1300	1066	26.00	3.00	TL,RL,SL,MTL
ISC105P15E2□□	1.00	E2	1300	1300	26.00	3.00	TL,RL,SL,MTL
ISC126P15E2□□	1.20	E2	1300	1560	26.00	2.50	TL,RL,SL,MTL
ISC155P15E3□□	1.50	E3	1300	1950	26.00	2.50	TL,RL,SL,MTL
ISC175P15E3□□	1.75	E3	1000	1750	28.00	2.50	TL,RL,SL,MTL
ISC205P15C2□□	2.00	C2	1000	2000	28.20	2.50	TL,RL,SL,MTL
Working voltage 2000 VDC(700VAC)							
ISC104P20B1□□	0.10	B1	1900	190	13.20	8.40	TL,RL,SL,MTL
ISC154P20B1□□	0.15	B1	1900	285	15.11	7.00	TL,RL,SL,MTL
ISC224P20E1□□	0.22	E1	1900	418	19.80	4.50	TL,RL,SL,MTL
ISC274P20E1□□	0.27	E1	1900	513	21.70	4.30	TL,RL,SL,MTL
ISC334P20B2□□	0.33	B2	1700	561	22.20	4.10	TL,RL,SL,MTL
ISC394P20B3□□	0.39	B3	1700	663	22.50	4.00	TL,RL,SL,MTL
ISC474P20B3□□	0.47	B3	1700	799	22.50	4.00	TL,RL,SL,MTL
ISC564P20E2□□	0.56	E2	1600	896	22.70	3.80	TL,RL,SL,MTL
ISC684P20E3□□	0.68	E3	1600	1088	22.80	3.70	TL,RL,SL,MTL
ISC754P20E3□□	0.75	E3	1500	1125	23.20	3.40	TL,RL,SL,MTL
ISC824P20C2□□	0.82	C2	1500	1230	23.20	3.30	TL,RL,SL,MTL
ISC105P20C2□□	1.00	C2	1500	1500	23.30	3.20	TL,RL,SL,MTL

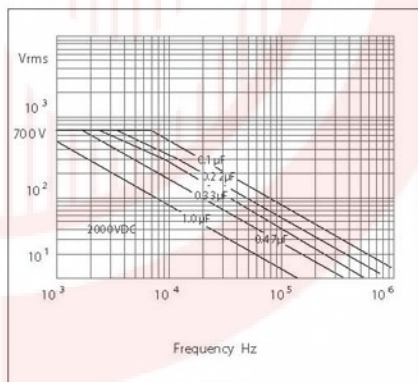
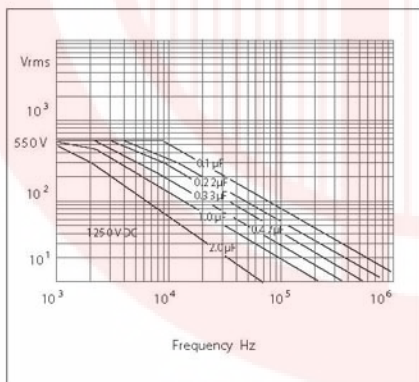
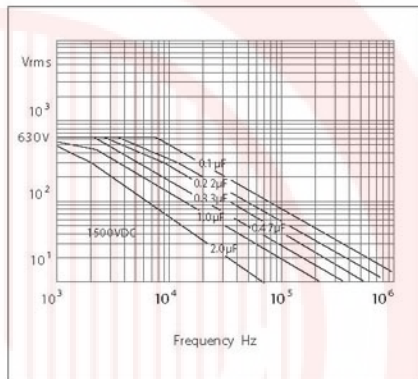
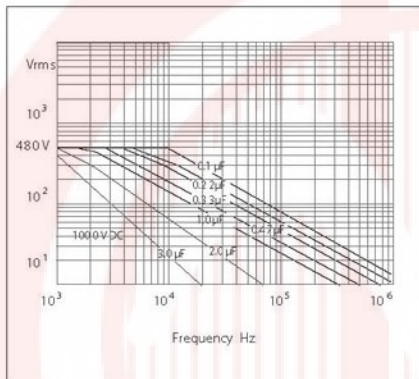
Custom-designed capacitors are available on request

IGBT SNUBBER CAPACITORS

ISC Box Type

Frequency Derating

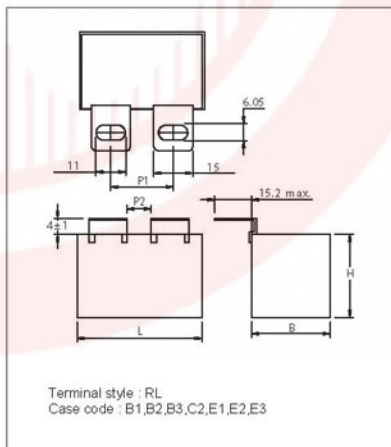
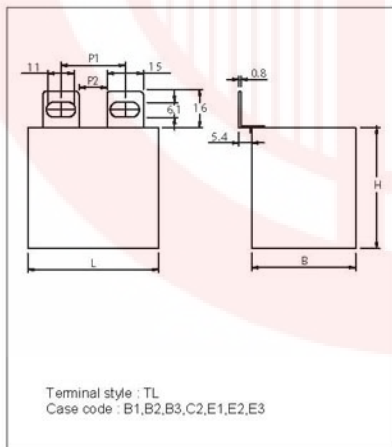
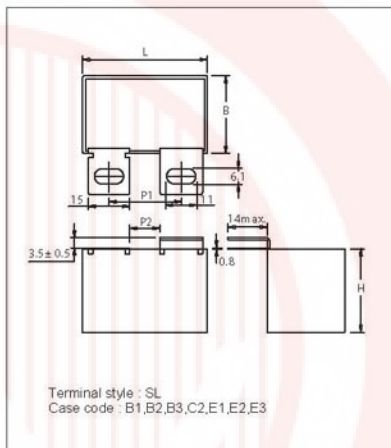
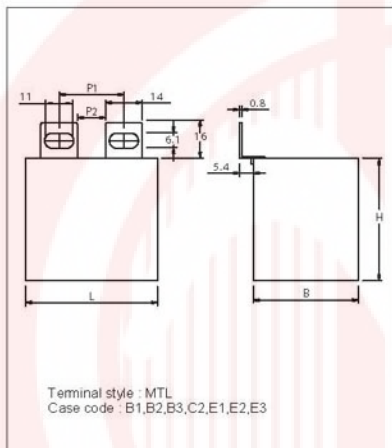
AC Voltage Derating v/s Frequency at 10°C Internal Temperature Rise (general reference)



IGBT SNUBBER CAPACITORS

ISC Box Type

Capacitor Drawings and Terminal Styles



Dimensions in mm. For details see Case Code table

IGBT SNUBBER CAPACITORS

ISC Box Type

Capacitor Drawings and Terminal Styles

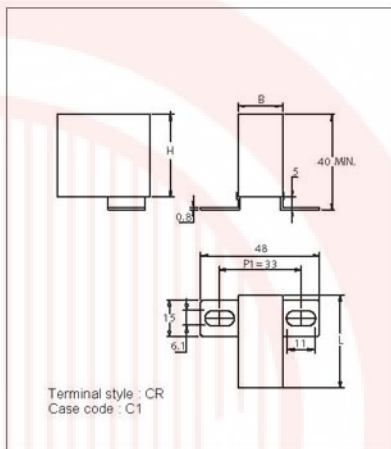
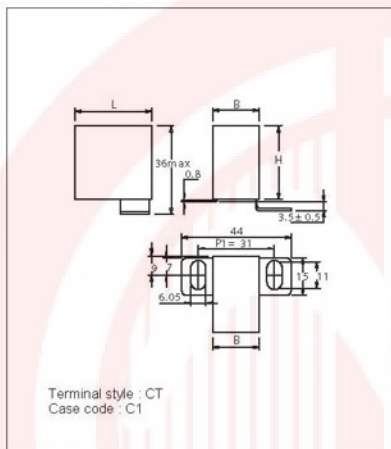


Table of Case Codes and Dimensions

Case code	Dimensions in mm*			P1	P2	Terminal Styles
	B	H	L			
B1	17.0	29.0	41.5	25.5	8.5	TL,RL,SL
B1	17.0	29.0	41.5	25.5	10.5	MTL
B2	24.0	38.0	45.0	25.5	8.5	TL,RL,SL
B2	24.0	38.0	45.0	25.5	10.5	MTL
B3	30.0	45.0	45.0	27.0	11.5	TL,RL,SL
B3	30.0	45.0	45.0	27.0	13.0	MTL
C1	18.0	33.0	38.0	31.0	-	CT
C1	18.0	33.0	38.0	33.0	-	CR
C2	43.0	50.0	54.0	27.0	11.5	TL,RL,SL
C2	43.0	50.0	54.0	27.0	13.0	MTL
E1	20.0	36.0	42.0	25.5	8.5	TL,RL,SL
E1	20.0	36.0	42.0	25.5	10.5	MTL
E2	35.0	42.0	45.0	27.0	11.5	TL,RL,SL
E2	35.0	42.0	45.0	27.0	13.0	MTL
E3	35.0	46.0	54.0	27.0	11.5	TL,RL,SL
E3	35.0	46.0	54.0	27.0	13.0	MTL

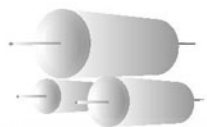
* Refer to "Capacitor Drawings"

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

SNUBBER CAPACITORS

SC Axial Type



Highlights

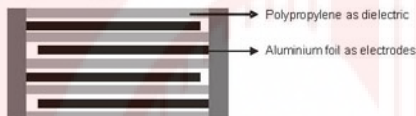
- Low inductance
- High DV/DT
- Low ESR
- Low loss polypropylene dielectric
- Impregnated elements eliminate corona

Applications

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

- Snubber networks
- Energy conversion and control in power electronics
- Noise suppressors in switching circuits

Construction



Technical Specifications

Physical Characteristics

- Dielectric material
- Electrode material
- Winding construction
- Terminals
- Enclosure

Polypropylene film

Aluminium foil

Non-inductive, extended foil, impregnated

Tinned copper

Preformed UL 94 V-0 plastic case with thermosetting resin end fill

Electrical Characteristics

- Capacitance range
- Capacity tolerance
- Rated voltage VDC
- Rated voltage VAC
- Test voltage between terminals

0.01MFD to 2.0MFD

$\pm 5\%$ (J), $\pm 10\%$ (K)

850, 1200, 2000, 2500, 3000

450, 500, 630, 700, 750

Working voltage ≤ 2000 VDC

Working voltage > 2000 VDC

2.0 x rated voltage VDC for 2 seconds

≤ 0.0005 at 1 KHz and 25°C

-25°C to +85°C

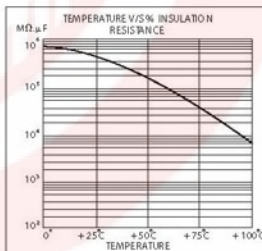
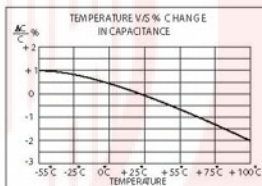
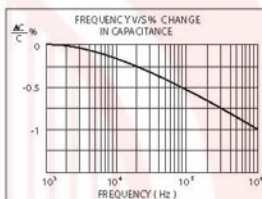
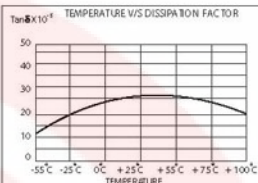
$C \leq 0.33$ MFD

$C > 0.33$ MFD

$\geq 50,000$ M Ω

$\geq 30,000$ M Ω

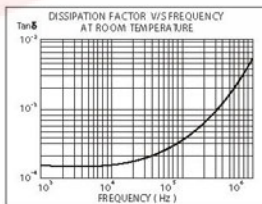
- Dissipation factor (Tan δ)
- Temperature range
- Insulation resistance at 25°C at a test voltage of 500 VDC applied for 1 minute



Marking on Capacitors

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

- The Company's symbol (Ⓢ) followed by the words GNDC
- The capacitor grade viz SC
- The capacitance value MFD
- The rated voltage VDC
- Capacity tolerance and manufacturing code
- Part number on non-standard capacitors



SNUBBER CAPACITORS

SC Axial Type

Explanation of Part Numbers

S C 1 5 4 P 0 8 5

Series Rated Capacitance Voltage

Standard Capacitor Values

Type	Rated Capacitance MFD	Dimensions in mm*			DV/DT V/ μ Sec	I peak Amps	I rms Max at 100KHz & 55°C Amps	ESR Max at 100KHz m Ω
		D	L	d				
Working voltage 850 VDC(450VAC)								
SC104P085	0.100	17.0	35.0	0.8	1100	110.00	6.00	12.00
SC154P085	0.150	17.0	35.0	0.8	1100	165.00	6.00	11.50
SC224P085	0.220	19.0	42.0	0.8	1000	220.00	7.00	10.20
SC334P085	0.330	19.0	42.0	1.0	1000	330.00	7.00	9.00
SC474P085	0.470	19.0	55.0	1.0	900	423.00	8.00	8.60
SC684P085	0.680	19.0	55.0	1.0	900	612.00	8.00	8.30
SC105P085	1.000	25.0	55.0	1.2	900	900.00	10.00	7.60
SC125P085	1.200	25.0	55.0	1.2	900	1080.00	11.00	7.20
SC155P085	1.500	25.0	55.0	1.2	900	1350.00	12.00	6.80
SC205P085	2.000	30.0	55.0	1.2	900	1800.00	12.00	5.60
Working voltage 1200 VDC(500VAC)								
SC473P120	0.047	15.0	23.0	0.8	1400	65.00	5.00	18.00
SC683P120	0.068	15.0	23.0	0.8	1400	95.00	6.00	13.00
SC104P120	0.100	17.0	35.0	1.0	1300	130.00	8.00	11.00
SC154P120	0.150	17.0	35.0	1.0	1300	195.00	8.20	8.20
SC224P120	0.220	19.0	42.0	1.0	1200	264.00	8.20	7.80
SC334P120	0.330	19.0	42.0	1.0	1200	396.00	9.10	7.30
SC474P120	0.470	19.0	55.0	1.0	1000	470.00	11.00	6.80
SC684P120	0.680	19.0	55.0	1.2	1000	680.00	12.00	5.30
SC105P120	1.000	25.0	55.0	1.2	1000	1000.00	12.00	5.00
SC125P120	1.200	30.0	55.0	1.2	1000	1200.00	12.00	4.80
SC155P120	1.500	30.0	55.0	1.2	1000	1500.00	12.00	4.20
Working voltage 2000 VDC(630VAC)								
SC103P200	0.010	12.0	23.0	0.8	1700	17.00	3.00	42.00
SC153P200	0.015	15.0	23.0	0.8	1700	26.00	4.00	40.30
SC223P200	0.022	15.0	23.0	0.8	1700	37.00	6.00	36.50
SC333P200	0.033	17.0	35.0	0.8	1700	56.00	7.00	24.20
SC473P200	0.047	17.0	35.0	0.8	1700	80.00	8.00	15.30
SC683P200	0.068	17.0	35.0	1.0	1700	116.00	9.00	14.20
SC104P200	0.100	19.0	42.0	1.0	1000	100.00	9.00	8.60
SC154P200	0.150	19.0	42.0	1.0	1000	150.00	10.00	7.20
SC224P200	0.220	25.0	55.0	1.0	900	198.00	11.00	6.50
SC334P200	0.330	30.0	55.0	1.2	900	297.00	11.00	4.60
Working voltage 2500 VDC(700VAC)								
SC333P250	0.033	17.0	35.0	0.8	1500	49.50	4.00	20.00
SC473P250	0.047	17.0	35.0	0.8	1500	70.50	6.00	13.00
SC683P250	0.068	17.0	35.0	1.0	1500	102.00	8.20	11.00
SC104P250	0.100	19.0	42.0	1.0	1200	120.00	8.20	8.90
SC154P250	0.150	19.0	42.0	1.2	1200	180.00	8.20	7.70
SC224P250	0.220	19.0	55.0	1.2	1000	220.00	9.10	6.90
SC334P250	0.330	25.0	55.0	1.2	1000	330.00	10.80	5.80
SC474P250	0.470	25.0	55.0	1.2	1000	470.00	12.00	4.20

SNUBBER CAPACITORS

SC Axial Type

Explanation of Part Numbers

S C 1 5 4 P 0 8 5

Series Rated Capacitance Voltage

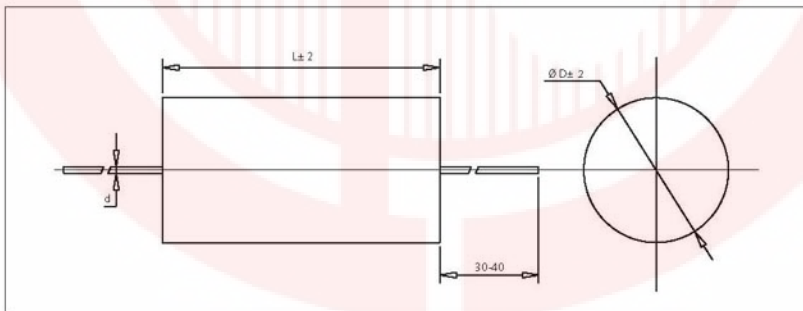
Standard Capacitor Values

Type	Rated Capacitance MFD	Dimensions in mm*			DV/DT V/ μ Sec	I peak Amps	Irms Max at 100KHz & 55°C Amps	ESR Max at 100KHz m Ω
		D	L	d				
Working voltage 3000 VDC(750VAC)								
SC103P300	0.010	12.0	23.0	0.8	2800	28.00	2.00	62.00
SC153P300	0.015	12.0	23.0	0.8	2800	42.00	3.00	41.00
SC223P300	0.022	15.0	23.0	0.8	2800	62.00	4.00	28.00
SC333P300	0.033	17.0	35.0	1.0	1500	50.00	5.00	19.80
SC473P300	0.047	19.0	55.0	1.0	1000	47.00	6.50	18.00
SC683P300	0.068	19.0	55.0	1.0	1000	68.00	8.00	12.50
SC104P300	0.100	19.0	55.0	1.2	1000	100.00	8.00	8.90
SC154P300	0.150	19.0	55.0	1.2	1000	150.00	11.00	6.70
SC224P300	0.220	25.0	55.0	1.2	1000	220.00	12.00	4.80
SC334P300	0.330	30.0	55.0	1.2	1000	330.00	12.00	4.20

Custom-designed capacitors are available on request

* Refer to "Capacitor Drawing"

Capacitor Drawing and Terminal Style



Dimensions in mm

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

SNUBBER CAPACITORS

SCN Axial Type



Highlights

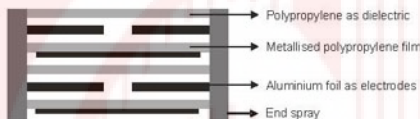
- Self-healing property
- High DV/DT
- Low ESR
- Low loss polypropylene dielectric
- Reference standard IEC 60384-14

Applications

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

- "Turn On" and "Turn Off" snubber circuits
- Energy conversion and control in power electronics
- Protection circuits in SMPS

Construction



Technical Specifications

Physical Characteristics

- Dielectric material
- Electrode material
- Winding construction
- Terminals
- Enclosure

Polypropylene film

Aluminium foil and metallised Polypropylene film

Polypropylene film, aluminium foil plus metallised polypropylene film wound in a series connection

Tinned copper

UL 94 V-0 polyester tape wrap with thermosetting resin end fill

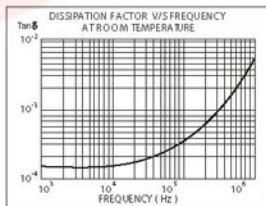
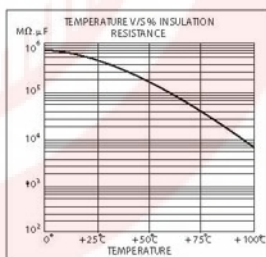
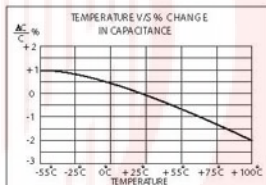
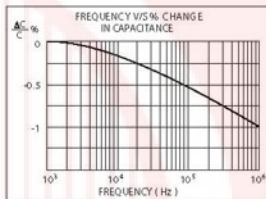
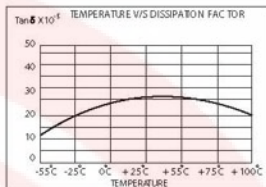
Electrical Characteristics

- Capacitance range 0.068MFD to 1.5MFD
- Capacity tolerance $\pm 5\%$ (J), $\pm 10\%$ (K)
- Rated voltage VDC 850, 1000, 1200, 1600, 2000, 2500, 3000
- Rated voltage VAC 450, 500, 500, 630, 630, 750, 750
- Test voltage between terminals 1.6 x rated voltage VDC for 10 seconds
- Dissipation factor (Tan δ) ≤ 0.0005 at 1 KHz and 25°C
- Temperature range -40°C to +85°C
- Insulation resistance at 25°C $C \leq 0.33$ MFD $C > 0.33$ MFD
- at a test voltage of 500 VDC $\geq 100,000$ M Ω $\geq 30,000$ M Ω
- applied for 1 minute

Marking on Capacitors

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

- The Company's symbol (Ⓢ) followed by the words GNDC
- The capacitor grade viz SCN
- The capacitance value MFD
- The rated voltage VDC
- Capacity tolerance and manufacturing code
- Part number on non-standard capacitors



SNUBBER CAPACITORS

SCN Axial Type

Explanation of Part Numbers

SCN 154P 085

Series Rated Capacitance Voltage

Standard Capacitor Values

Type	Rated Capacitance MFD	Dimensions in mm*				DV/DT V/μ Sec	I peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz mΩ
		T max	W max	L max	d				
Working voltage 850 VDC(450VAC)									
SCN154P085	0.150	10.0	18.0	34.0	1.0	800	120.00	7.40	6.00
SCN224P085	0.220	12.0	18.0	34.0	1.0	800	176.00	8.00	6.00
SCN334P085	0.330	14.0	20.0	34.0	1.0	800	284.00	9.40	5.00
SCN474P085	0.470	17.0	23.0	34.0	1.0	800	376.00	11.70	5.00
SCN884P085	0.680	19.0	25.0	46.0	1.2	500	340.00	13.80	4.00
SCN105P085	1.000	22.0	33.0	46.0	1.2	500	500.00	14.40	3.00
SCN125P085	1.200	18.0	28.0	54.0	1.2	400	480.00	16.70	3.00
SCN155P085	1.500	21.0	32.0	54.0	1.2	400	600.00	20.30	2.00
Working voltage 1000 VDC(500VAC)									
SCN224P100	0.220	12.0	18.0	34.0	1.0	800	176.00	8.00	6.00
SCN334P100	0.330	14.0	20.0	34.0	1.0	800	284.00	9.40	5.00
SCN474P100	0.470	17.0	23.0	34.0	1.0	800	376.00	11.70	5.00
SCN884P100	0.680	19.0	25.0	46.0	1.2	500	340.00	13.80	4.00
SCN105P100	1.000	22.0	33.0	46.0	1.2	500	500.00	14.40	3.00
SCN125P100	1.200	18.0	28.0	54.0	1.2	400	480.00	16.70	3.00
SCN155P100	1.500	21.0	32.0	54.0	1.2	400	600.00	20.30	2.00
Working voltage 1200 VDC(500VAC)									
SCN154P120	0.150	9.5	16.0	34.0	1.0	1000	150.00	9.00	6.00
SCN224P120	0.220	12.5	19.0	34.0	1.0	1000	220.00	10.20	6.00
SCN334P120	0.330	13.5	20.5	46.0	1.2	800	264.00	10.80	6.00
SCN474P120	0.470	19.5	25.5	46.0	1.2	800	376.00	11.70	5.00
SCN884P120	0.680	20.5	29.0	46.0	1.2	800	544.00	13.60	5.00
SCN105P120	1.000	21.0	30.0	54.0	1.2	700	700.00	16.20	4.00
SCN125P120	1.200	22.0	32.0	54.0	1.2	700	840.00	16.80	3.00
Working voltage 1600 VDC(630VAC)									
SCN104P160	0.100	13.0	19.0	34.0	1.0	1100	110.00	9.00	7.00
SCN154P160	0.150	16.0	21.0	34.0	1.0	1100	165.00	10.00	7.00
SCN224P160	0.220	18.0	25.0	34.0	1.2	1100	242.00	12.00	7.00
SCN334P160	0.330	17.0	23.0	46.0	1.2	900	297.00	12.00	6.00
SCN474P160	0.470	21.5	28.5	46.0	1.2	900	423.00	13.80	6.00
SCN884P160	0.680	23.5	34.0	46.0	1.2	900	612.00	14.50	6.00
Working voltage 2000 VDC(630VAC)									
SCN333P200	0.033	8.0	14.0	34.0	1.0	1200	40.00	4.80	19.00
SCN473P200	0.047	9.0	16.0	34.0	1.0	1200	56.00	6.70	10.00
SCN883P200	0.068	11.0	18.0	34.0	1.0	1200	81.00	7.90	8.00
SCN104P200	0.100	14.0	20.0	34.0	1.0	1200	120.00	9.50	6.00
SCN154P200	0.150	14.0	23.0	46.0	1.0	950	142.00	10.00	6.00
SCN224P200	0.220	16.0	27.0	46.0	1.0	950	209.00	11.00	6.00
SCN334P200	0.330	18.0	27.0	54.0	1.2	850	280.00	12.8	5.00
SCN474P200	0.470	19.0	33.0	54.0	1.2	850	400.00	15.00	5.00

SNUBBER CAPACITORS

SCN Axial Type

Explanation of Part Numbers

S C N **1 5 4 P** **0 8 5**
 Series Rated Capacitance Voltage

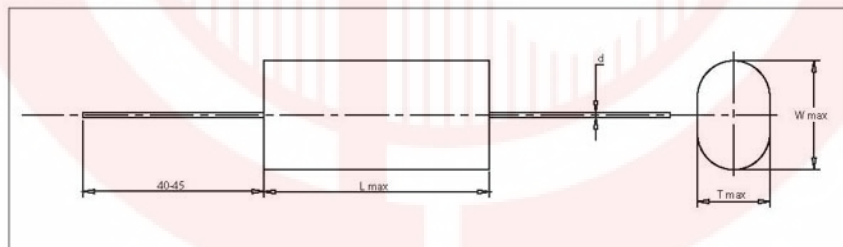
Standard Capacitor Values

Type	Rated Capacitance MFD	Dimensions in mm*				DV/DT V/ μ Sec	I peak Amps	Irms Max at 100KHz & 70°C Amps	Typical ESR at 100KHz m Ω
		T max	W max	L max	d				
Working voltage 2500 VDC(750VAC)									
SCN333P250	0.033	9.2	18.0	34.0	1.0	1300	43.00	4.80	19.00
SCN473P250	0.047	10.0	17.0	34.0	1.0	1300	61.00	6.50	10.00
SCN883P250	0.068	12.0	19.0	34.0	1.0	1300	88.00	8.80	8.00
SCN104P250	0.100	15.0	21.0	34.0	1.0	1300	130.00	9.80	6.00
SCN154P250	0.150	15.0	24.0	46.0	1.0	1050	157.00	10.90	6.00
SCN224P250	0.220	18.0	27.0	54.0	1.2	950	209.00	11.20	6.00
SCN334P250	0.330	19.0	33.0	54.0	1.2	950	313.00	13.50	5.00
Working voltage 3000 VDC(750VAC)									
SCN153P300	0.015	8.5	15.5	34.0	1.0	1500	22.00	3.00	35.00
SCN223P300	0.022	9.2	18.0	34.0	1.0	1500	33.00	4.20	22.00
SCN333P300	0.033	10.0	17.0	34.0	1.0	1500	49.00	6.10	12.00
SCN473P300	0.047	12.0	19.0	46.0	1.0	1200	56.00	6.80	12.00
SCN883P300	0.068	14.0	21.0	46.0	1.0	1200	81.00	7.90	10.00
SCN104P300	0.100	15.0	24.0	46.0	1.2	1200	120.00	9.30	8.00
SCN154P300	0.150	18.0	27.0	46.0	1.2	1200	180.00	12.00	6.00

Custom-designed capacitors are available on request

* Refer to "Capacitor Drawing"

Capacitor Drawing and Terminal Style



Dimensions in mm

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

ALUMINIUM ELECTROLYTIC CAPACITORS

Professional Grade HRC with Screw Terminals

HRC range is designed for high reliability, high frequency and high ripple current applications like high frequency PWM inverters, high KVA on-line UPS systems, telecom SMPS.

- Small can size
- Low ESR
- Low leakage current
- High ripple current

Specifications

- **Voltage range:** 100 VDC to 500 VDC
- **Can sizes:** 35 x 62mm to 76 x 175mm
- **Operating temperature range:** -40°C to +85°C
- **Capacitance:** 330 MFD to 47000 MFD

The value of capacitance is given in microfarads, and with a tolerance of $\pm 20\%$.

- **Leakage current:** The maximum leakage current (Ir) is given by the formula:
 $I_r = 0.003 CV$ (microamps)
C = capacitance in microfarads
V = DC rated voltage
Pre-conditioning of the capacitors, prior to testing for leakage current, is essential.

- **Ripple current:** All capacitors withstand rms ripple current at 100 Hz at 85°C. When capacitors operate at temperatures other than 85°C, the permissible rms ripple current at 85°C should be multiplied by the factors given below

+35°C	+40°C	+45°C	+50°C	+65°C
2.20	2.10	2.00	1.90	1.60

Where capacitors are required to operate at frequencies other than 100 Hz the multiplying factors given below, may be used to determine the ripple current capacity, at that frequency.

Frequency Hz	100	250	500	1K to 10K	>10K
Multiplying Factor	1.0	1.05	1.20	1.32	1.35

Note: Ripple current capacity of capacitors with S terminal will increase by 10% to 20% when mounted on a metal plate. Write-in for details.

- Can is negative. However, it is isolated with a PVC insulating sleeve and polypropylene end-disc.



Terminal styles

O

S

Custom - designed capacitors
are available

Terminal styles

Capacitors are available in screw terminal in two can styles

- O - Screw terminals with plain insulated base
- S - Screw terminals with stud mounting

Marking on Capacitors

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

- The Company's symbol (Ⓢ) followed by the words GNDC
- The capacitor grade viz HRC
- The capacitance value MFD
- The rated voltage
- The surge voltage
- Capacity tolerance and manufacturing code
- Part number on non-standard capacitors

ALUMINIUM ELECTROLYTIC CAPACITORS

Professional Grade HRC with Screw Terminals

Explanation of Part Numbers

HRC **472** **M** **250** **CG** - **O**
 Series Rated Capacitance Tolerance Voltage Case Code Terminal Styles
 Diameter Length

Standard Capacitor Values

Type	Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	ESR at 100Hz 25°C (Ω)	Impedance at 100Hz 25°C (Ω)	Ripple at 100Hz 85°C (Amps)	Can Size Nominal D x L mm
Working voltage 100 VDC							
HRC472M100AG-□	100	125	4700	0.051	0.338	6.65	35x105
HRC502M100AG-□	100	125	5000	0.047	0.318	6.92	35x105
HRC682M100BF-□	100	125	6800	0.033	0.234	9.04	50x80
HRC103M100BG-□	100	125	10000	0.024	0.159	12.05	50x105
HRC153M100CG-□	100	125	15000	0.020	0.106	14.96	63x105
HRC203M100CH-□	100	125	20000	0.019	0.080	16.23	63x120
HRC223M100CG-□	100	125	22000	0.015	0.072	19.18	76x105
HRC333M100DH-□	100	125	33000	0.012	0.048	22.67	76x120
HRC473M100DI-□	100	125	47000	0.011	0.034	25.74	76x146
Working voltage 150 VDC							
HRC202M150BF-□	150	175	2000	0.089	0.796	5.50	50x80
HRC222M150BF-□	150	175	2200	0.085	0.720	5.63	50x80
HRC252M150BG-□	150	175	2500	0.081	0.636	6.56	50x105
HRC332M150CG-□	150	175	3300	0.067	0.482	8.17	63x105
HRC472M150CG-□	150	175	4700	0.049	0.338	9.56	63x105
HRC502M150CG-□	150	175	5000	0.048	0.318	9.66	63x105
HRC682M150DG-□	150	175	6800	0.035	0.234	12.61	76x105
HRC103M150DH-□	150	175	10000	0.023	0.159	16.37	76x120
HRC123M150DI-□	150	175	12000	0.021	0.132	18.49	76x146
HRC153M150DI-□	150	175	15000	0.019	0.106	19.58	76x146
HRC203M150DI-□	150	175	20000	0.017	0.079	20.70	76x146
HRC223M150DI-□	150	175	22000	0.016	0.073	23.19	76x175
Working voltage 160 VDC							
HRC102M160AG-□	160	185	1000	0.088	1.590	5.06	35x105
HRC222M160BF-□	160	185	2200	0.080	0.720	5.80	50x80
HRC332M160CG-□	160	185	3300	0.066	0.482	8.23	63x105
HRC472M160CG-□	160	185	4700	0.048	0.338	9.66	63x105
HRC502M160CG-□	160	185	5000	0.047	0.318	9.76	63x105
HRC103M160DH-□	160	185	10000	0.022	0.159	16.74	76x120
HRC123M160DI-□	160	185	12000	0.020	0.132	19.09	76x146
HRC153M160DI-□	160	185	15000	0.018	0.106	20.12	76x146
HRC223M160DI-□	160	185	22000	0.015	0.073	23.95	76x175
Working voltage 200 VDC							
HRC102M200AG-□	200	240	1000	0.167	1.590	3.67	35x105
HRC202M200BF-□	200	240	2000	0.089	0.796	5.50	50x80
HRC222M200BG-□	200	240	2200	0.077	0.720	6.73	50x105
HRC252M200BG-□	200	240	2500	0.064	0.636	7.38	50x105
HRC332M200CG-□	200	240	3300	0.060	0.482	8.64	63x105
HRC472M200CH-□	200	240	4700	0.048	0.338	10.21	63x120
HRC502M200CH-□	200	240	5000	0.041	0.318	11.05	63x120
HRC682M200DH-□	200	240	6800	0.031	0.234	14.10	76x120

ALUMINIUM ELECTROLYTIC CAPACITORS

Professional Grade HRC with Screw Terminals

Explanation of Part Numbers

H R C 4 7 2 M 2 5 0 C G - 0

Series Rated Capacitance Tolerance Voltage Case Code Terminal Styles

Diameter Length

Standard Capacitor Values

Type	Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	ESR at 100Hz 25°C (Ω)	Impedance at 100Hz 25°C (Ω)	Ripple at 100Hz 85°C (Amps)	Can Size Nominal D x L mm
Working voltage 200 VDC							
HRC722M200DH-□	200	240	7200	0.029	0.221	14.58	76x120
HRC103M200CI-□	200	240	10000	0.021	0.159	18.83	76x146
HRC123M200CI-□	200	240	12000	0.018	0.132	20.12	76x146
HRC153M200DJ-□	200	240	15000	0.016	0.106	23.19	76x175
Working voltage 250 VDC							
HRC471M250AE-□	250	300	470	0.380	3.385	1.86	35x62
HRC681M250AG-□	250	300	680	0.240	2.340	3.06	35x105
HRC102M250BF-□	250	300	1000	0.160	1.590	4.10	50x80
HRC202M250BG-□	250	300	2000	0.085	0.796	6.40	50x105
HRC222M250BG-□	250	300	2200	0.076	0.720	6.77	50x105
HRC252M250CG-□	250	300	2500	0.061	0.636	6.56	63x105
HRC332M250CG-□	250	300	3300	0.059	0.482	8.71	63x105
HRC472M250DG-□	250	300	4700	0.046	0.338	10.95	76x105
HRC502M250DH-□	250	300	5000	0.042	0.318	12.12	76x120
HRC682M250CI-□	250	300	6800	0.024	0.234	17.42	76x146
HRC103M250CI-□	250	300	10000	0.019	0.159	19.59	76x146
Working voltage 350 VDC							
HRC331M350AF-□	350	400	330	0.490	4.820	1.87	35x80
HRC471M350AG-□	350	400	470	0.370	3.385	2.46	35x105
HRC681M350BF-□	350	400	680	0.235	2.340	3.38	50x80
HRC102M350BG-□	350	400	1000	0.159	1.590	4.68	50x105
HRC152M350CG-□	350	400	1500	0.128	1.060	5.81	63x105
HRC222M350CH-□	350	400	2200	0.069	0.720	8.52	63x120
HRC332M350DH-□	350	400	3300	0.057	0.482	10.40	76x120
HRC472M350CI-□	350	400	4700	0.045	0.338	12.68	76x146
HRC502M350CI-□	350	400	5000	0.037	0.318	14.03	76x146
HRC682M350CI-□	350	400	6800	0.032	0.234	15.09	76x146
HRC772M350DJ-□	350	400	7700	0.029	0.207	17.23	76x175
Working voltage 400 VDC							
HRC331M400AF-□	400	460	330	0.493	4.820	1.87	35x80
HRC471M400AG-□	400	460	470	0.365	3.385	2.48	35x105
HRC681M400BF-□	400	460	680	0.221	2.340	3.49	50x80
HRC102M400BG-□	400	460	1000	0.119	1.590	5.41	50x105
HRC152M400CG-□	400	460	1500	0.110	1.060	6.38	63x105
HRC222M400CH-□	400	460	2200	0.068	0.720	8.58	63x120
HRC332M400DH-□	400	460	3300	0.056	0.482	10.49	76x120
HRC472M400CI-□	400	460	4700	0.044	0.338	12.87	76x146
HRC602M400DJ-□	400	460	6000	0.035	0.266	15.88	76x175
Working voltage 450 VDC							
HRC471M450BF-□	450	500	470	0.453	3.385	2.44	50x80
HRC681M450BG-□	450	500	680	0.201	2.340	4.16	50x105

ALUMINIUM ELECTROLYTIC CAPACITORS

Professional Grade HRC with Screw Terminals

Explanation of Part Numbers

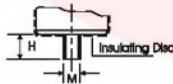
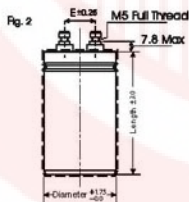
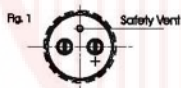
HRC	472	M	250	CG	-O
Series	Rated Capacitance	Tolerance	Voltage	Case Code	Terminal Styles
				Diameter	Length

Standard Capacitor Values

Type	Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	ESR at 100Hz 25°C (Ω)	Impedance at 100Hz 25°C (Ω)	Ripple at 100Hz 85°C (Amps)	Can Size Nominal D x L mm
Working voltage 450 VDC							
HRC102M450CG-□	450	500	1000	0.176	1.590	5.04	63x105
HRC152M450CH-□	450	500	1500	0.157	1.060	5.64	63x120
HRC222M450CJ-□	450	500	2200	0.088	0.720	8.19	63x146
HRC332M450DI-□	450	500	3300	0.085	0.482	9.26	76x146
HRC472M450DJ-□	450	500	4700	0.050	0.338	13.12	76x175
Working voltage 500 VDC							
HRC152M500CG-□	500	550	1500	0.110	1.060	6.38	63x105
HRC222M500DG-□	500	550	2200	0.075	0.720	8.58	76x105
HRC332M500DI-□	500	550	3300	0.060	0.482	11.00	76x146
HRC472M500DJ-□	500	550	4700	0.047	0.338	13.53	76x175

Other capacitor values and sizes available on request

Screw Terminals type O/S



Diameter	
A	35
B	50
C	63
D	76

Length	
E	62
F	80
G	105
H	120
I	146
J	175

Stud Details		
Can Diameter	Threads	Heights (H 1)
35	M8	12
50	M12	16
63	M12	16
76	M12	16

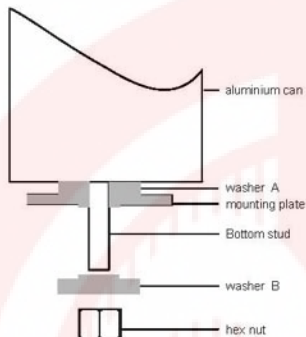
O : Screw terminals with plain insulated base
S : Screw terminals and stud mounting type

dimensions in mm

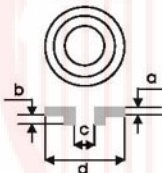
ALUMINIUM ELECTROLYTIC CAPACITORS

Mounting Accessories

- Mounting unit and washers for cans with bottom stud

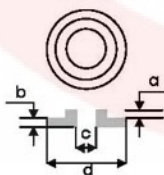


Washer A



Base stud threads	a	b	c	d
M8	1.0	1.5	8.6	25
M12	1.0	1.5	12.6	40

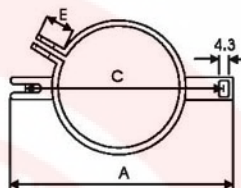
Washer B



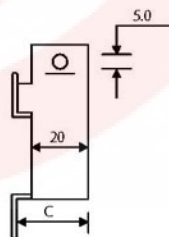
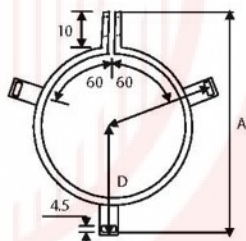
Base stud threads	a	b	c	d
M8	1.5	1.0	8.6	25
M12	1.5	1.0	12.6	40

All dimensions in mm

- Vertical mounting clamps



CAN DIA	A	B	C	D	E
35	63	35	54	20	10



CAN DIA	A	B	C	D
50	76	33	30	40
63	89	39.5	30	46.5
76	102	46	30	53

All dimensions in mm



GNDC 昌碩科技股份有限公司

台北公司
台北市11491內湖區
瑞光路192號8F-1
Tel.: +886-2-2799 6010
Fax: +886-2-2799 6035
<http://www.gndc-ups.com>
email: gsales@gndc-ups.com

北京辦
北京市海澱區大柳樹15號
富海中心5號樓1604室
郵編: 100081
Tel.: +86-10-6214 0376
Fax: +86-10-6214 0377
email: beijing@semcor.com.cn

青島公司
青島市高科園株洲路192號
郵編: 266101
Tel.: +86-532-8870 1773
Fax: +86-532-8870 1478
<http://www.gndc-ups.com>
email: sales@semcor.com.cn

蘇州辦
蘇州市新區獅山路58號
匯豪國際西樓655室
郵編: 215011
Tel.: +86-512-6807 0775
Fax: +86-512-6807 0776
email: suzhou@semcor.com.cn