PG - 6DI

-40°C +85°C



Specifications

- **Voltage range :** 50 VDC to 500 VDC
- **Can size :** 35ϕ x 62mm to 90ϕ x 220mm
- **Operating Temperature range :** -40°C to + 85°C
- **Capacitance :** 330 MFD to 250000 MFD
  Tolerance ± 20%
- **Leakage current:** The max. leakage current (Ir) is given by the formula:
  Ir = 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 :

+40°C	+45°C	+50°C	+65°C
2.2	2.1	1.9	1.6

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 to10k	>10K
Multiplying Factor	1.0	1.05	1.20	1.32	1.35

- **Useful Life :** Useful life is the period of time which the capacitor takes to reach "end-of-life".
  For PG-6DI capacitors the useful life is estimated as 5000 hours at maximum rated temperature, ripple current and voltage.
  " End-of-life" is defined as follows :
  - Catastrophic failure : capacitors show short or open circuit
  - Mechanical failure : operation of safety vent or sleeve damage
  - Parametric failure :
    - Capacitance change ± 30%
    - ESR exceed three times specified value
    - Leakage current exceed specified value

- **Notes :**
  1. Can is negative, However, it is isolated with a PVC insulating sleeve and polypropylene end-disc.
  2. Maximum ripple current for each capacitor diameter .

Capacitor Diameter	35mm	50mm	63mm	76mm	90mm
Max. Ripple Current (Amps)	20	20	40	40	72

Capacitor mounting

Capacitors are available in screw terminals in three mounting styles

AEST - Screw terminals with plain insulated base. *see page 7*

AEST-D - Screw terminals with stud mounting. *see page 7*

AEST-AL- Capacitor with aluminium bottom disc. *see page 8*

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Calculation of useful life

The useful life for a known ripple current load and ambient temperatures is determined on the basis of the below "useful life" table shown below :

Useful life (in khrs) at Different Ambient Temperature °C

Ripple Current Multiplier	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
0	226	160	113	80	57	40	28	20	14	10
0.1	225	159	112	79	56	40	28	20	14	10
0.2	220	156	110	78	55	39	28	19	14	10
0.3	213	150	106	75	53	38	27	19	13	9
0.4	203	143	101	72	51	36	25	18	13	9
0.5	190	135	95	67	48	34	24	17	12	8
0.6	176	125	88	62	44	31	22	16	11	8
0.7	161	114	81	57	40	28	20	14	10	7
0.8	145	103	73	51	36	26	18	13	9	6
0.9	129	91	65	46	32	23	16	11	8	6
1	113	80	57	40	28	20	14	10	7	5
1.1	98	69	49	35	24	17	12	9	6	
1.2	83	59	42	29	21	15	10	7	5	
1.3	70	50	35	25	18	12	9	6		
1.4	58	41	29	21	15	10	7	5		
1.5	48	34	24	17	12	8	6			
1.6	38	27	19	14	10	7				
1.7	31	22	15	11	8					
1.8	24	17	12	8						
1.9	19	13	9							
2	14	10								
2.1	11									

Example:

10000 MFD, 350 VDC, Size : 76 x 220

Specified Ripple Current (I_{85C}) at 100Hz, 85°C= 28.6A

If working conditions are as follows :

Applied Ripple Current (I_R) : 28.6A

Frequency = 100 Hz

Ambient temperature (close to the capacitor) : 55°C

Calculations :

1. I_R / I_{85C} = 28.6 / 28.6 = 1.00
2. From the above table it will be seen that the useful life works out to be 40,000 hours or about 5 years. If the ripple current applied is lower, say 20 amps then the useful life will be 57,000 hours or approximately 7 years.

Marking on capacitors

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

- The Company's symbol followed by the words ALCON ELECTROLYTIC
- The capacitor grade viz. PG-6DI
- The capacitance value __ MFD, rated voltage __VDC
- The surge voltage
- Capacity tolerance
- Climatic category
- Part number on non-standard capacitors

Manufacturing Date Code Chart

The manufacturing code shall consists of four digits (alphanumeric). The first two shall denote the date (numeric). The third stands for the month (alphanumeric). The fourth stands for the year (alphabet)

First two spaces DATE	Third space MONTH	Fourth space YEAR
01	1 = JANUARY	A = 2012
02	2 = FEBRUARY	B = 2013
03	3 = MARCH	C = 2014
.	4 = APRIL	D = 2015
.	5 = MAY	E = 2016
.	6 = JUNE	F = 2017
10	7 = JULY	G = 2018
11	8 = AUGUST	H = 2019
.	9 = SEPTEMBER	J = 2020
.	X = OCTOBER	K = 2021
.	Y = NOVEMBER	L = 2022
31	Z = DECEMBER	M = 2023

For example :

1) Manufacturing code 023A will mean 2nd March, 2012
2) Manufacturing code 10XA will mean 10th October, 2012

PG - 6DI

-40°C +85°C

Standard Capacitor Values

Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	MAX ESR at 100 Hz, 25°C (Ohms)	Impedance at 100 Hz, 25°C (Ohms)	Ripple at 100 Hz, 85°C (Amps)	Can size Nominal D x L mm
50	60	4700	0.082	0.343	4.29	35x62
		5000	0.078	0.322	4.40	35x62
		6800	0.069	0.238	4.68	35x62
		10000	0.047	0.162	6.05	35x80
		10000	0.051	0.162	7.26	50x80
		15000	0.022	0.107	9.70	35x105
		22000	0.020	0.073	11.66	50x80
		27000	0.016	0.060	13.11	50x80
		33000	0.012	0.049	16.24	50x105
		47000	0.011	0.035	19.67	63x105
		68000	0.012	0.025	21.45	76x105
		82000	0.011	0.021	22.55	76x120
		100000	0.009	0.017	23.96	76x120
		150000	0.009	0.012	27.12	76x146
		200000	0.009	0.010	30.77	76x220
63	75	4700	0.065	0.341	4.84	35x62
		5000	0.052	0.320	5.39	35x62
		6800	0.039	0.235	6.60	35x80
		10000	0.029	0.160	7.70	35x80
		10000	0.031	0.160	9.35	50x80
		15000	0.024	0.107	10.60	50x80
		22000	0.019	0.073	13.26	50x105
		27000	0.016	0.060	14.30	50x105
		33000	0.017	0.049	16.06	63x105
		47000	0.014	0.035	19.81	76x105
		68000	0.011	0.024	22.31	76x120
		82000	0.010	0.020	23.10	76x120
		100000	0.010	0.017	26.05	76x146
75	90	4700	0.043	0.340	6.34	35x80
		5000	0.040	0.319	5.53	35x80
		6800	0.026	0.235	9.09	35x105
		10000	0.023	0.160	10.79	50x80
		10000	0.025	0.160	11.44	50x105
		15000	0.019	0.107	13.26	50x105
		22000	0.016	0.073	16.46	63x105
		27000	0.015	0.060	17.05	63x105
		33000	0.014	0.049	19.80	76x105
		47000	0.012	0.035	20.96	76x120
		68000	0.011	0.024	24.24	76x146
		100000	0.011	0.017	28.30	76x220

Custom designed capacitors available

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PG - 6DI

-40°C +85°C

Standard Capacitor Values

Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	MAX ESR at 100 Hz, 25°C (Ohms)	Impedance at 100 Hz, 25°C (Ohms)	Ripple at 100 Hz, 85°C (Amps)	Can size Nominal D x L mm
100	115	2200	0.102	0.727	3.85	35x62
		2500	0.098	0.640	4.18	35x80
		3300	0.093	0.486	4.29	35x80
		4700	0.036	0.340	6.93	35x80
		5000	0.035	0.319	8.80	50x80
		6800	0.041	0.236	8.14	50x80
		10000	0.019	0.160	13.26	50x105
		15000	0.017	0.107	15.95	63x105
		20000	0.016	0.080	17.85	63x120
		22000	0.014	0.073	19.25	76x105
		27000	0.014	0.060	19.80	76x105
		33000	0.009	0.049	24.94	76x120
		47000	0.008	0.034	28.31	76x146
		68000	0.008	0.024	33.00	76x220
		100000	0.007	0.016	38.50	90x220
150	172	1000	0.207	1.598	3.19	35x105
		2000	0.074	0.798	6.05	50x80
		2200	0.071	0.725	6.19	50x80
		2500	0.063	0.638	7.22	50x105
		3300	0.053	0.484	8.99	63x105
		4700	0.039	0.340	10.92	63x105
		5000	0.038	0.319	10.63	63x105
		6800	0.029	0.235	12.10	63x105
		10000	0.019	0.160	16.50	63x146
		12000	0.016	0.133	20.34	76x146
		15000	0.014	0.107	21.54	76x146
		20000	0.013	0.080	22.77	76x146
		22000	0.013	0.073	25.51	76x220
		27000	0.009	0.059	30.80	76x220
		33000	0.006	0.048	37.40	76x220
		40000	0.006	0.040	39.60	90x220
200	230	1000	0.158	1.595	3.30	35x80
		1500	0.142	1.065	3.85	35x105
		2200	0.060	0.725	7.40	50x105
		3300	0.048	0.483	9.50	63x105
		4700	0.039	0.340	11.23	63x120
		5000	0.034	0.319	12.16	63x120
		5600	0.031	0.285	12.65	63x120
		6800	0.022	0.235	15.51	76x120
		8200	0.021	0.195	16.40	76x120
		10000	0.016	0.160	20.49	76x146
		12000	0.013	0.133	22.13	76x146
		15000	0.013	0.106	25.51	76x220
		22000	0.009	0.073	30.80	76x220
		27000	0.008	0.059	33.00	76x220
		33000	0.006	0.048	39.60	90x220

Custom designed capacitors available

PG - 6DI

-40°C +85°C

Standard Capacitor Values

Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	MAX ESR at 100 Hz, 25°C (Ohms)	Impedance at 100 Hz, 25°C (Ohms)	Ripple at 100 Hz, 85°C (Amps)	Can size Nominal D x L mm
250	288	470	0.326	3.394	2.16	35x62
		680	0.186	2.345	3.37	35x105
		1000	0.133	1.595	4.51	50x80
		2000	0.066	0.797	7.04	50x105
		2200	0.059	0.725	7.45	50x105
		2500	0.048	0.638	9.42	63x105
		3300	0.047	0.483	9.58	63x105
		4700	0.041	0.340	11.00	63x120
		5000	0.034	0.319	12.10	63x120
		5600	0.031	0.285	12.65	63x120
		6800	0.018	0.234	19.16	76x146
		8200	0.017	0.194	19.80	76x146
		10000	0.014	0.159	21.54	76x146
		12000	0.013	0.133	22.00	76x146
		15000	0.012	0.106	26.40	76x220
		22000	0.008	0.073	36.30	90x220
		27000	0.007	0.059	38.50	90x220
315	362	2200	0.060	0.725	8.50	63x105
		3300	0.057	0.484	9.70	76x120
		4700	0.037	0.340	12.10	76x120
		5000	0.035	0.319	12.40	76x120
		5600	0.030	0.285	13.30	76x146
		6800	0.023	0.235	16.90	76x146
		8200	0.022	0.195	19.70	76x220
		10000	0.015	0.159	24.20	76x220
		12000	0.013	0.133	25.40	76x220
		15000	0.009	0.106	32.70	90x220
		20000	0.008	0.080	36.30	90x220
350	385	330	0.406	4.832	2.06	35x80
		1000	0.124	1.594	5.15	50x105
		1500	0.102	1.630	6.50	63x105
		2200	0.056	0.725	9.37	63x120
		3300	0.042	0.483	10.89	63x120
		3300	0.041	0.483	11.44	76x120
		4700	0.033	0.339	13.95	76x146
		5000	0.027	0.319	15.43	76x146
		5600	0.026	0.285	15.95	76x146
		6800	0.022	0.235	17.24	76x146
		8200	0.024	0.195	18.95	76x220
		10000	0.010	0.159	28.60	76x220
		15000	0.006	0.106	40.70	90x220

Custom designed capacitors available

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PG - 6DI

-40°C +85°C

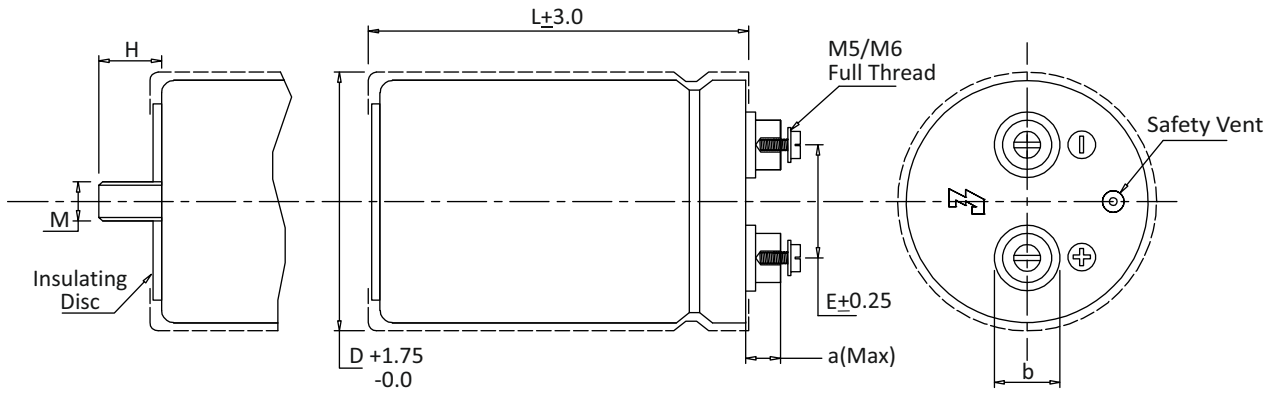
Standard Capacitor Values

Rated Voltage (VDC)	Surge Voltage (VDC)	Capacitance Nominal (MFD)	MAX ESR at 100 Hz, 25°C (Ohms)	Impedance at 100 Hz, 25°C (Ohms)	Ripple at 100 Hz, 85°C (Amps)	Can size Nominal D x L mm
400	440	680	0.227	2.346	3.46	50x80
		1000	0.114	1.594	5.36	50x105
		1000	0.118	1.594	6.04	63x105
		1500	0.108	1.064	6.32	63x105
		2200	0.069	0.725	8.49	63x120
		3300	0.050	0.484	10.39	76x120
		4700	0.040	0.340	12.74	76x146
		5000	0.038	0.319	13.07	76x146
		5600	0.036	0.285	13.37	76x146
		6800	0.034	0.235	15.84	76x220
		8200	0.028	0.195	17.33	76x220
		10000	0.023	0.160	20.79	90x220
		15000	0.019	0.107	22.77	90x220
450	495	470	0.312	3.400	2.95	50x80
		680	0.130	2.343	5.03	50x105
		1000	0.115	1.594	6.10	63x105
		1500	0.106	1.064	6.82	63x120
		2200	0.080	0.726	7.87	63x120
		3300	0.052	0.484	11.20	76x146
		4700	0.034	0.339	13.92	76x146
		5000	0.031	0.319	14.52	76x146
		5600	0.028	0.285	15.13	76x146
		6800	0.028	0.235	17.55	76x220
		8200	0.023	0.195	19.36	76x220
		10000	0.019	0.160	22.99	90x220
		15000	0.010	0.106	31.46	90x220
500	550	820	0.154	1.944	4.95	50x105
		1000	0.138	1.595	5.23	50x105
		1500	0.100	1.064	7.02	63x105
		2200	0.069	0.725	9.44	76x105
		3300	0.051	0.484	12.10	76x146
		4700	0.041	0.340	14.88	90x146
		5600	0.035	0.285	15.95	90x146
		6800	0.033	0.235	18.70	90x220
		8200	0.028	0.195	20.35	90x220
		10000	0.020	0.160	22.00	90x220

Custom designed capacitors available

PG - 6DI -40°C +85°C

Screw Terminals type AEST/AEST-D



AEST -Screw terminals with plain insulated base.

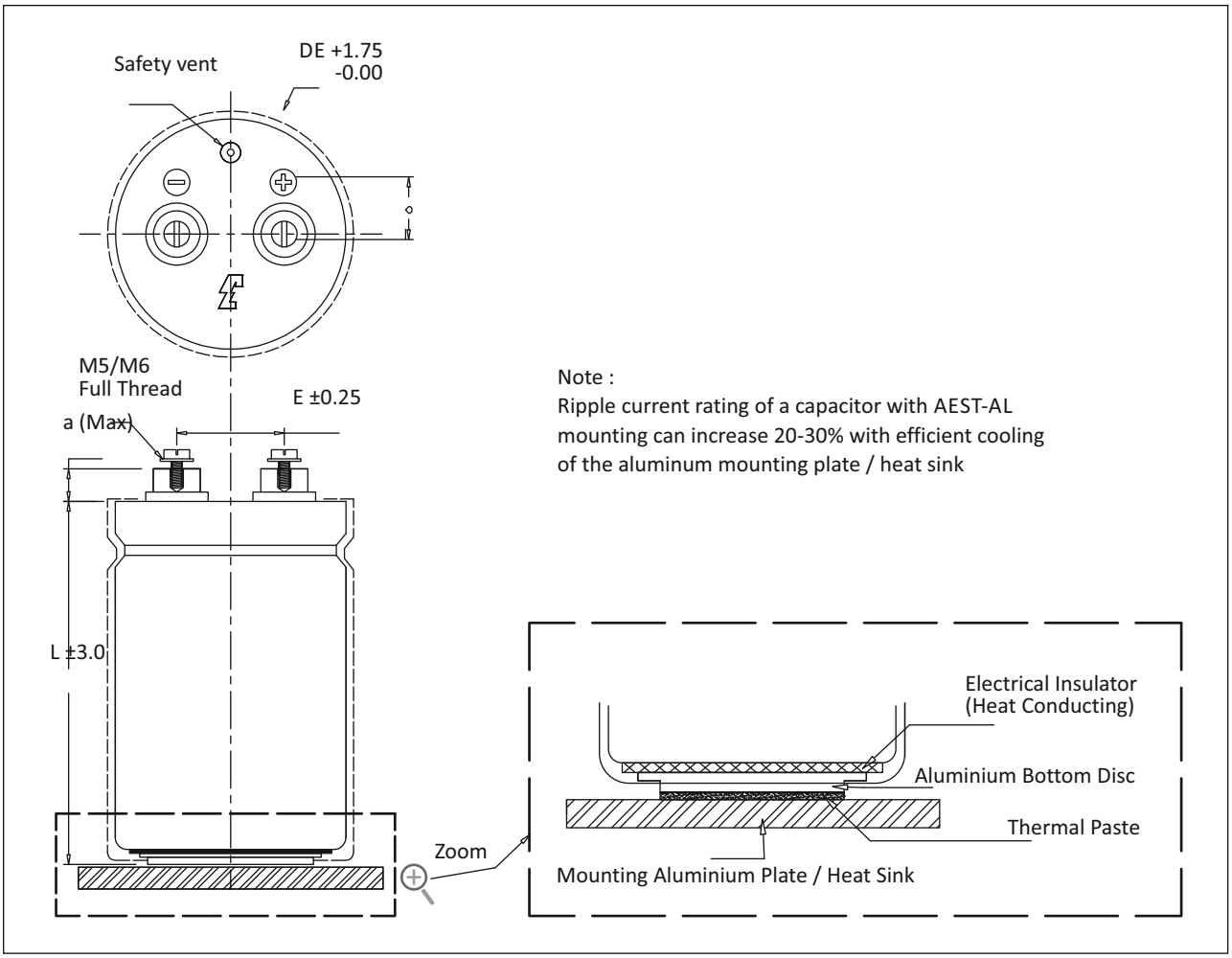
AEST-D - Screw terminals with stud mounting.

Dimension in mm.

Terminal	D	E	L	a (Max)	b±0.1	M	H±1.0
M5	35	12.6	62	7.8	9.5	—	—
M5	35	12.6	80	7.8	9.5	—	—
M5	35	12.6	105	7.8	9.5	—	—
M5	50	22.1	80	7.8	9.5	M 12	16.0
M5	50	22.1	105	7.8	9.5	M 12	16.0
M5	63	28.5	105	7.8	12.0	M 12	16.0
M5	63	28.5	120	7.8	12.0	M 12	16.0
M5	63	28.5	146	7.8	12.0	M 12	16.0
M5	76	31.6	105	7.8	12.0	M 12	16.0
M5	76	31.6	120	7.8	12.0	M 12	16.0
M5	76	31.6	146	7.8	12.0	M 12	16.0
M5	76	31.6	175	7.8	12.0	M 12	16.0
M5	76	31.6	220	7.8	12.0	M 12	16.0
M6	76	31.6	105	5.3 *	16.0	M 12	16.0
M6	76	31.6	120	5.3 *	16.0	M 12	16.0
M6	76	31.6	146	5.3 *	16.0	M 12	16.0
M6	76	31.6	175	5.3 *	16.0	M 12	16.0
M6	76	31.6	220	5.3 *	16.0	M 12	16.0
M6	90	32	105	5.3 *	16.0	M 12	16.0
M6	90	32	146	5.3 *	16.0	M 12	16.0
M6	90	32	220	5.3 *	16.0	M 12	16.0

* Low Post Design

Screw Terminals type AEST-AL



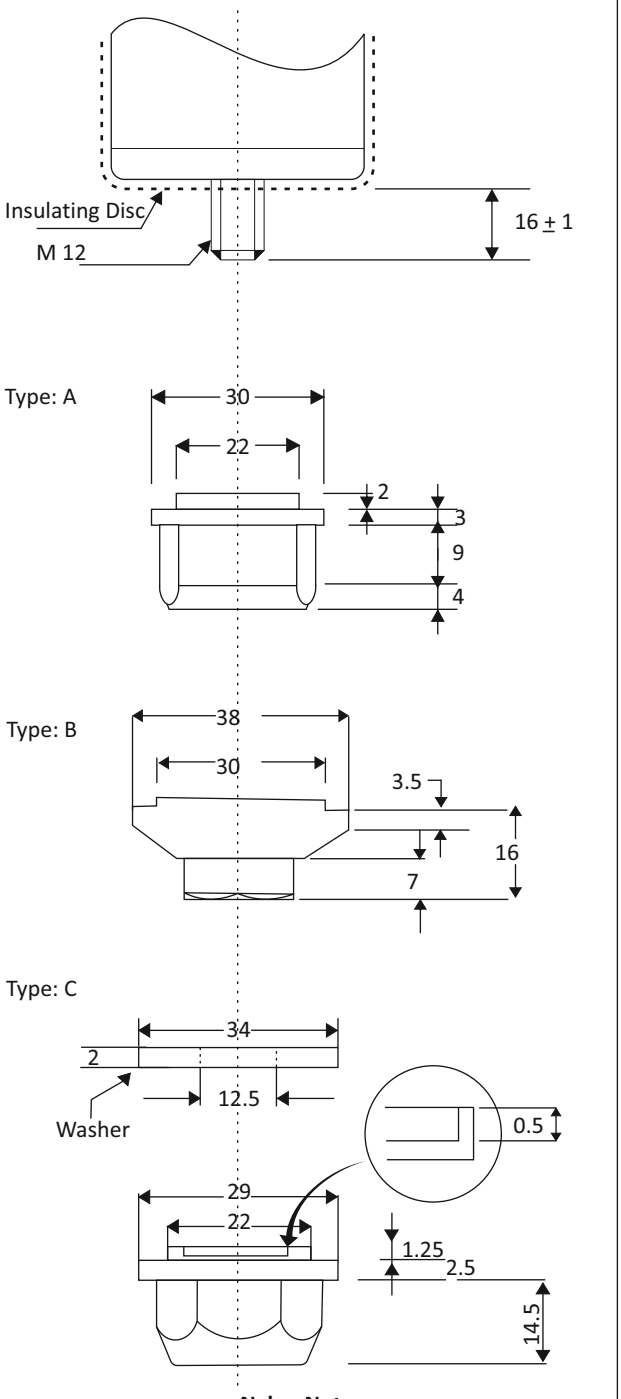
Dimension in mm.

Terminal	D	E	L	a (Max)	b±0.1
M 5	63	28.5	105	7.8	12.0
M 5	63	28.5	120	7.8	12.0
M 5	63	28.5	146	7.8	12.0
M 5	76	31.6	105	7.8	12.0
M 5	76	31.6	120	7.8	12.0
M 5	76	31.6	146	7.8	12.0
M 5	76	31.6	175	7.8	12.0
M 5	76	31.6	220	7.8	12.0
M 6	76	31.6	105	5.3 *	16.0
M 6	76	31.6	120	5.3 *	16.0
M 6	76	31.6	146	5.3 *	16.0
M 6	76	31.6	175	5.3 *	16.0
M 6	76	31.6	220	5.3 *	16.0
M 6	90	32	105	5.3 *	16.0
M 6	90	32	146	5.3 *	16.0
M 6	90	32	220	5.3 *	16.0

* Low Post Design

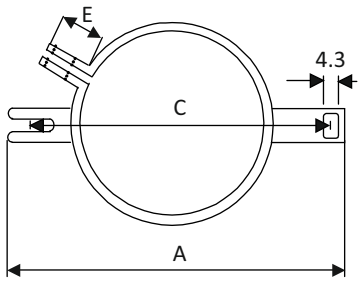
Mounting Accessories

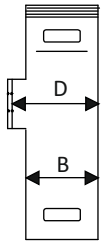
▪ **Mounting Nut and Washers for Cans**



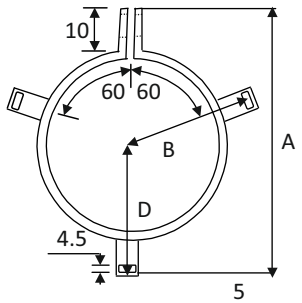
Nylon Nut
Internal Threads M12 x 15 mm Depth

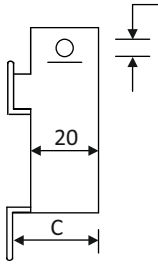
▪ **Vertical Mounting Clamps**





CAN	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

Dimension in mm.

Catalogue No. AEPL PG-6DI-July-2012

The specification shown herein (page 1 to 9) pertain to the current manufacturing range of the Company. The Company reserves the right to change and /or modify any part of or whole of the specifications as a result of research and development and as may be necessary, without prior notice.