Rescon

Aluminium Electrolytic Capacitors
Large Can, Screw Terminals

PROFESSIONAL GRADE CAPACITOR TYPE "PG - 2I"

Design Features :

- Latest anodizing with multiple thermal & chemical stabilizing processes for better anodic oxide stability.
- Low and medium gain foils for high ripple current ratings.
- Low impedance and inductance achieved by special construction with multiple anode and cathode connections.
- Special purpose electrolyte for low ESR, and long life.
- Cans are specially designed to facilitate heat dissipation from element core.
- Specially designed top cover discs ensure firm placement of the element in the can.
- The disc is provided with safety vent.

Basic Data :

Type	:	**PG - 2I**
Capacitance range and tolerance	:	1000 to 3,00,000 µF and -10 to + 15%
Rated voltage range	:	16 to 450 VDC.
Surge voltage	:	1.15 x rated voltage ≤ 250 V 1.10 x rated voltage > 250 V
Operating temperature range	:	-40°C to + 85°C
Leakage current limit	:	0.005 CV (C - Capacitance in mF, V - Working Voltage in DC)
Ripple current	:	*see details in product range*
Endurance test at +85°C	:	2000 Hrs.
Operational life (T_{AMB} = 50°C, I_{AC} = 1.2 I_{RAC})	:	> 70000 Hrs.
Test standards	:	IEC 60384-4, IS 4317
Climatic category IEC 60 068	:	40/085/56

Marking :

The capacitors are marked with the following information :

- Name of manufacturer • Grade • Climatic category
- Rated capacitance (in mfd) • Tolerance • Rated voltage (in V DC) • Surge voltage (in V DC)
- Date code in 'yy mm' format • Rescon ordering code.

DATE CODE SYSTEM :

8500	N	01
Internal Traceability Code	Year (2004)	Month (January)

Ordering Information for PG - 2I type without stud capacitors :

PG 2I	3K3	350	607
Type	Capacitance Value	Rated Voltage	Case Code (Ø 63.5 *107)

Note : For ordering stud type capacitor add suffix '(S)' to the case code.

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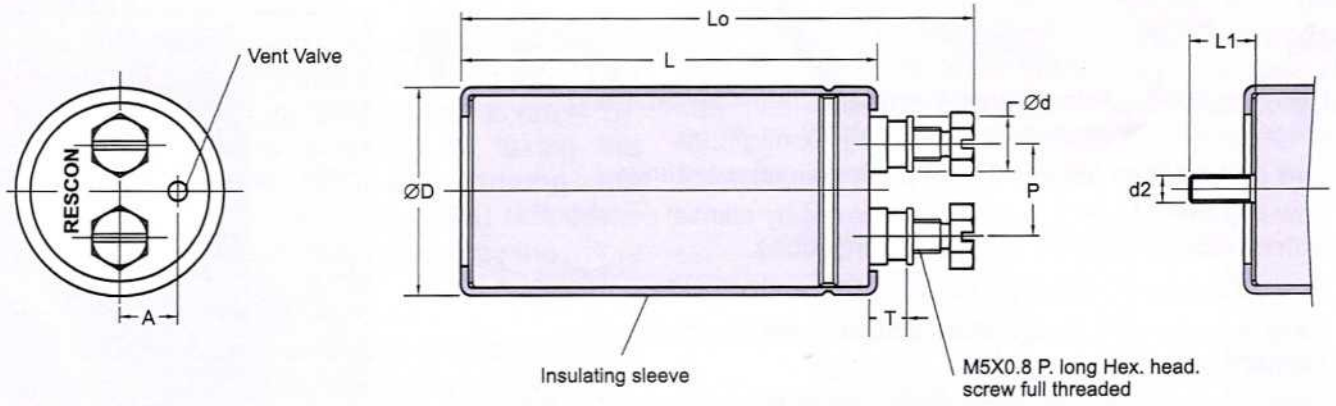
FIG. 1



For dimensions see **table 1**. Maximum permissible torque : 2.5 Nm.
The capacitors are delivered with screws and washers. For mounting accessories & stud details, see **fig. 2 and 3.**
'L' is length of can, where as 'Lo' is length of can + screw in half closed position.
For 98 mm dia can the screw is M6x10 with long hexagonal head.

PG 2I TERMINAL STYLE : Table 1

Case (Ø D)	L(mm) ±1.0	Ød(mm) ±0.25	P(mm) ±0.1	A(mm) ±0.1	Thread 10mm lg Type	T(mm) ±0.1	Lo(mm) approx.
35	84	9.5	15	9	M5 x 0.8	5.5	96.00
50	84	9.5	22	14	M5 x 0.8	5.5	96.00
50	105	9.5	22	14	M5 x 0.8	5.5	117.00
63.5	107	12.6	29	14	M5 x 0.8	5.5	119.00
63.5	125	12.6	29	14	M5 x 0.8	5.5	137.00
76	107	12.6	31.6	16	M5 x 0.8	5.5	119.00
76	125	12.6	31.6	16	M5 x 0.8	5.5	137.00
76	149	12.6	31.6	16	M5 x 0.8	5.5	161.00
89	107	16.0	33	16	M6 x 1.0	5.5	119.00
89	125	16.0	33	16	M6 x 1.0	5.5	137.00

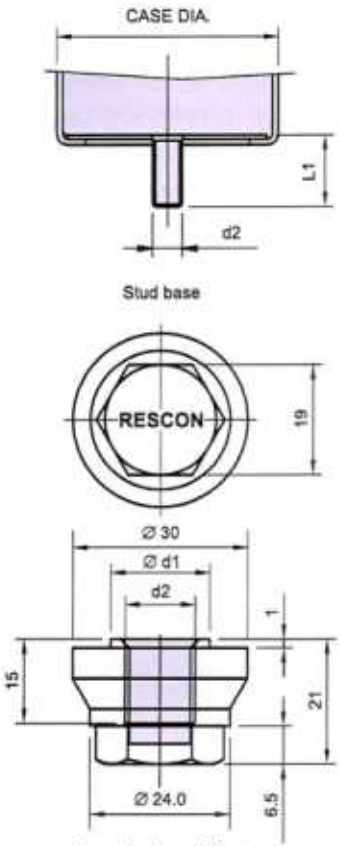
Packing Details : Table 2

D (mm)	L (mm)	Mass (gms)	Packaging quantities (units per box)	Cardboard box l x w x h (mm)	Weight per box (Kg) approx	Case code without stud
35	84	≈ 105	70	320 x270 x200	15.20	384
50	84	≈ 175	30	320 x270 x135	5.70	584
50	105	≈ 270	30	355 x295 x175	9.20	505
63.5	107	≈ 450	20	355 x295 x175	10.10	607
63.5	125	≈ 600	20	355 x295 x190	13.00	625
76	107	≈ 800	12	345 x250 x165	10.40	707
76	125	≈ 930	12	345 x250 x190	12.00	725
76	149	≈ 970	12	345 x250 x190	12.50	749
89	107	≈ 970	9	275x275x145	9.20	807
89	125	≈ 1200	9	275x275x145	11.20	825

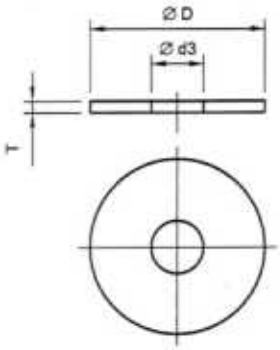
Note : Minimum order quantity as per cardboard box or in Multiples thereof

Mounting Accessories

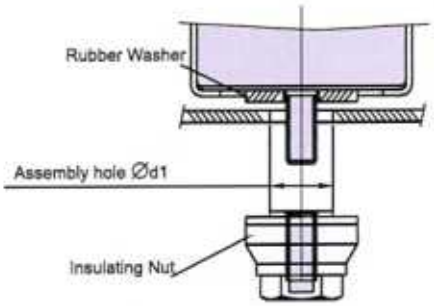
FIG.(3)



Insulating Nut



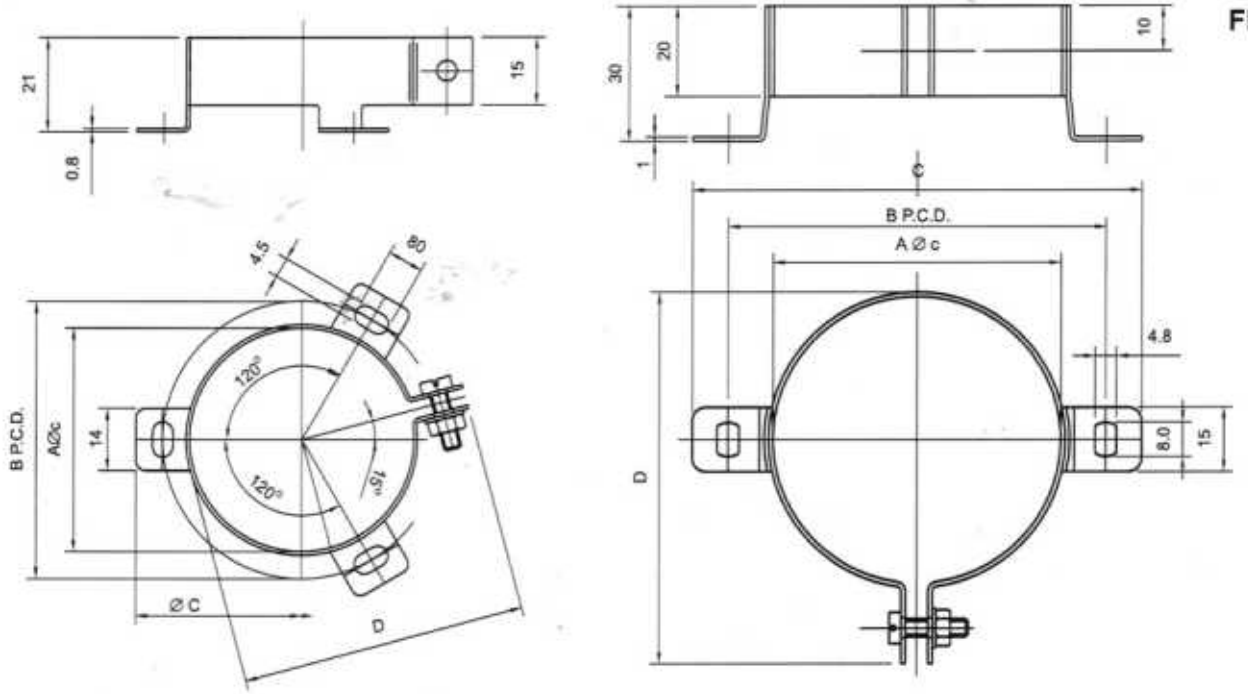
Nitrile Rubber Washer
for Stud Type



	Stud Base & Insulating Nut			Insulating Rubber Washer		
Case dia.	Ø d1	Thread d2	L1	Ø D	Ø d3	Ø T
35	13	M8	12	30	9.0	2.0
50	13	M8	12	30	9.0	2.0
63.5	17	M12	16	30	13.0	2.0
76	17	M12	16	30	13.0	2.0

Note : Dimensions are in mm. For nuts the maximum permissible torque is 2 Nm (M8) and 4 Nm (M12). In stud type can, the stud is not isolated from negative terminal, hence it is recommended to isolate the chassis.

FIG. (2)



Clamps For Flat Base Type

Dimnensions Of Clamp For Case Dia. 35 & 50				
Case dia.	A Øc	B P.C.D.	Ø C	D
35	35	45.0	57.0	48.0
50	50	62.0	74.0	63.5

Dimnensions Of Clamp For Case Dia. 63.5 & 76				
Case dia.	Ø C	B P.C.D.	C	D
63.5	64	84.0	100.0	83.0
76	76	99.0	113.0	92.0

Note : To avoid damaging the insulating sleeve, do not tighten the clamp screw.

Life Expectancy at Various Ripple Current / Temperature

The life of electrolytic capacitors is mainly determined by the temperature in the hottest part of the winding. If hot spot temperature is (say) TH. Then this temperature is found by taking the ambient temperature (TA) and adding the capacitor's temperature rise (TH - TA) due to its electrical power losses mainly caused by the ripple current load and ESR.

The operational life matrix below shows minimum operational life (Lop) as the function of ambient.

Temperature (TA), ripple current load factor (KAC) & maximum expected capacitor case temperature (TC) at operational frequency 100 Hz.

KAC - ripple current load factor = IAC / IRAC

LOP - operational life (thousand hours).

IAC - applied ripple current at operating frequency and operating temperature.

IRAC - maximum IRAC is stated at 100 Hz and upper category temperature (85°C)

KAC - IAC / IRAC (85°C, 100 Hz)

Ripple Current Frequency Characteristics

The ESR (Equivalent Series Resistance) value decreases with increased frequency allowing for higher ripple current, for the same power loss and life. The rated current values shall therefore, be multiplied by the frequency correction factor K at frequencies other than 100 Hz

Freq. In Hz	Correction factor
100	1.0
300	1.15
600	1.25
1200	1.32
> 1500	1.35

Ripple Current Temperature Characteristics

When capacitors are operated at temperature other than 85°C, the ripple current specified at 85°C must be multiplied by the factor Kt.

Temp. °C	Kt
35	2.40
45	2.20
50	1.80
65	1.60
70	1.40
85	1.0

Operational Life Matrix
Kac = Ripple Load Factor - Iac / Irac (85°C, 100hz)

KAC	0	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4
TAMB	LOP	LOP	LOP	LOP	LOP	LOP	LOP	LOP	LOP	LOP	LOP
40	175	158	142	132	110	98	88	70	62	44	32
45	165	142	136	110	94	62	58	44	32	20	28
50	154	138	118	96	70	52	48	32	28	22	16
55	142	110	66	62	44	26	22	18	14	12	10
60	100	70	50	50	33	22	18	14	12	10	
65	70	60	39	32	24	18	16	12	9	8	
70	62	49	24	18	15	13	11	9	7		
75	50	34	16	12	9	7	6	5			
80	35	23	12	5	4	3	2				
85	26	17	10	2							
90	19	11	6								

Lop = operational life (Thousand hours)

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