

KNR Large Capacitance Aluminum Electrolytic Capacitors

Series KNR Screw Terminal, Miniaturized, High Ripple Capacitors

Extended range up to $\Phi 100 \times 250$.

Guaranteed 5000 hours at 85°C.

RoHS

Photo



Marking color: White print on black sleeve

Specifications

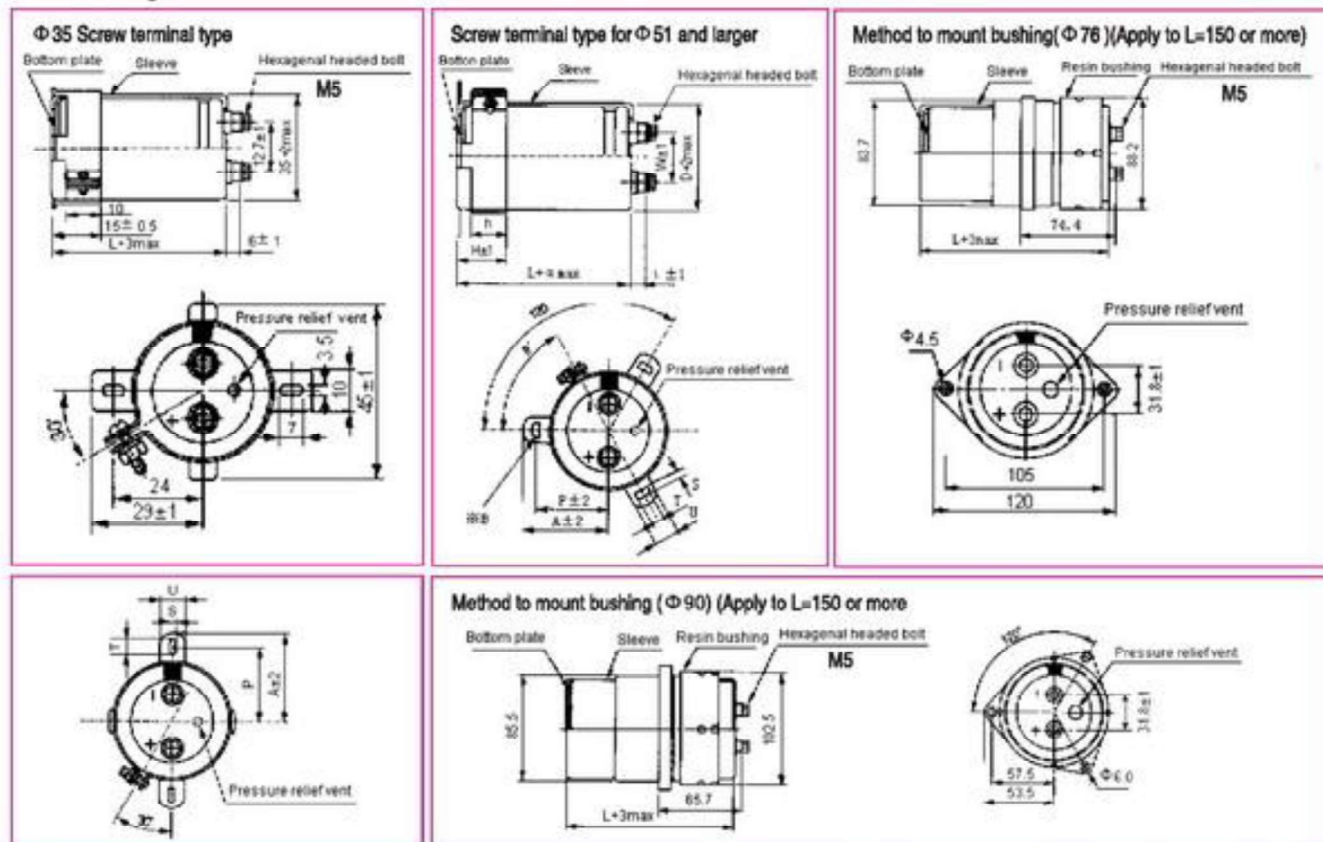
No.	Item	Performance													
1	Temperature range(℃)	-40 to +85 (10~100V)						-25 to +85 (160~550V)							
2	Leakage current(μ A)	Less than 3 $\sqrt{CV}$ μ A or 5mA (after five minutes)						C: Rated Capacitance(μ F); V: Rated voltage(V) 20℃							
3	Capacitance tolerance (%)	±20						(20℃, 120Hz)							
4	Tangent of the loss angle (Tan δ)	Tan δ (max)	Rated voltage (V)		10	16	25	35	50	63	80	100	160 to 250	350 to 550	20℃ 120Hz
			ΦD	L											
			35	80~100	0.60	0.40	0.35	0.30	0.25	0.25	0.20	0.12	0.15	—	
				120	0.70	0.55	0.40	0.30	0.25	0.25	0.20	0.15	0.15	—	
			51	60~100	0.90	0.60	0.45	0.35	0.25	0.25	0.20	0.15	0.15	0.20	
				110~150	1.00	0.80	0.50	0.40	0.30	0.25	0.20	0.15	0.15	0.20	
			63.5	90~100	0.90	—	—	0.50	0.35	0.30	0.25	—	0.20	0.20	
				110~190	1.20	0.75	0.65	—	—	0.30	0.30	0.20	0.20	0.20	
			76	90~100	1.60	—	—	0.65	—	—	—	—	0.20	0.20	
				110~220	1.60	1.10	0.75	0.75	0.55	0.50	0.35	0.30	0.20	0.20	
			90	130~220	2.00	1.50	1.00	0.90	0.75	0.60	0.40	0.30	0.25	0.20	
			100	190~250	2.40	1.50	1.00	0.90	0.75	0.60	0.40	0.30	0.25	0.20	
5	Low temperature characteristics	Rated voltage (V)		10~100					160~550					120Hz	
		Impedance ratio (max)		$Z_{(-40℃)}/Z_{(+20℃)}$					$Z_{(-25℃)}/Z_{(+20℃)}$						
				12					8						
6	Endurance (85℃) (Applied ripple current)	Test time			5000hours										
		Leakage current			The initial specified value or less										
		Percentage of capacitance change			Within ±15% (350V~550V: ±20%) of initial value										
		Tangent of the loss angle			175% (350V~550V:300%) or less of the initial specified value										
7	Shelf Life(85℃)	Test time			1000hours										
		Leakage current			The initial specified value or less										
		Percentage of capacitance change			Within ±20% of initial value										
		Tangent of the loss angle			175% (350V~550V:300%) or less of the initial specified value										
		Pretreatment performed JIS-C-5102													
8	Applicable standards	JIS-C-5102 and JIS-C- 5141													

Coefficient of Frequency for Ripple Current

Rated Voltage (v)	Frequency (Hz)				
	60	120	360	1K	10K~
10~100	0.90	1.00	1.08	1.15	1.15
160~250	0.88	1.00	1.08	1.15	1.20
350~550	0.82	1.00	1.20	1.35	1.40

Outline Drawing

Unit: mm



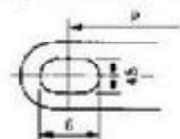
Note:

Capacitors with body dia. Φ 51 or larger are furnished with 3-leg brackets shown above as standard.

If these capacitors are preferred to have 2-leg brackets as shown right, add "B" in the 12th digit of type numbering system.

※ B

3-leg brackets for Φ 90 capacitors have different hole shapes from the ordinary ones as illustrated below.



Dimensions of mounting bracket

Symbol	Leg shape Φ D	3-Legs					2-Legs			
		51	63.5	76	90	100	51	63.5	76	90
P		32.5	38.1	44.5	50.8	56.3	33.2	40.5	46.5	53
A		38.5	43	49.2	58.5	62	40	46.5	53	59
T		7.5	8.0	7.0	8.0	8.0	6.0	7.0	6.0	6.0
S		5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
U		12	14	14	16	16	14	14	14	14
0°		60	60	60	60	60	30	30	30	30
H		20	25	30	35	36	25	35	35	35
h		15	20	24	25	30	15	20	20	20

Dimension of terminal pitch (W) and length (ι) and Nominal dia. of bolt

Φ D	W	ι	α	Nominal dia. of bolt
51	22.0	6	3	M5
63.5	28.6	6	3	M5
76	31.8	6	3	M5
90	31.8	6	3	M5
100	41.5	10	4	M5

KNR Large Capacitance Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	10V		16V		25V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A
33000					35X80	6.2
47000	35X80	6.0	35X80	6.4	35X100	8.2
68000	35X80	7.2	35X100	7.9	35X120	9.4
100000	35X100	8.8	35X120	10.6	51X100	12.0
150000	51X80	10.7	51X100	11.5	51X120	15.3
220000	51X100	13.0	51X120	15.6	63.5X120	18.9
330000	63.5X100	15.9	63.5X120	25.1	76X120	24.8
470000	63.5X120	19.0	76X120	30.5	90X170	30.8
680000	76X120	22.8	90X170	33.0	90X220	33.3
1000000	90X170	27.7	90X220	36.0	100X250	36.4
1500000	90X220	33.9	100X250	39.7		
2200000	100X250	41.1				

V.DC Contents μF	35V		50V		63V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A
10000					35X80	4.1
15000			35X80	5.4	35X100	5.5
22000			35X100	6.1	35X120	7.1
33000	35X80	6.2	51X70	7.0	51X80	8.8
47000	35X120	8.2	51X90	8.6	51X120	11.7
68000	51X80	9.3	51X100	11.0	63.5X100	15.0
100000	51X120	13.6	63.5X100	14.2	63.5X140	20.8
150000	63.5X100	14.5	76X120	18.6	76X140	26.0
220000	76X100	16.8	90X140	20.3	90X170	28.3
330000	76X140	24.8	90X170	25.3	90X220	31.2
470000	90X170	32.6	90X220	33.2	100X250	33.6
680000	90X220	35.2	100X250	36.0		
1000000	100X250	38.5				

KNR Large Capacitance Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	80V		100V		160V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A
2200					35X80	3.2
3300					35X120	4.7
4700			35X80	3.8	51X80	5.0
6800			35X100	4.5	51X100	6.4
10000	35X80	4.2	35X120	5.3	63.5X100	9.1
15000	35X120	6.0	51X80	6.0	76X100	12.0
22000	51X80	6.5	51X100	6.8	76X140	16.9
33000	51X120	9.2	51X140	10.0	90X140	19.2
47000	63.5X100	12.7	63.5X140	14.4	90X170	20.6
68000	63.5X140	15.5	76X140	18.2	90X220	22.3
100000	76X140	21.3	90X170	22.1	100X250	24.4
150000	90X170	26.5	90X220	27.0		
220000	90X220	28.9	100X250	32.7		
330000	100X250	31.8				

V.DC Contents μF	200V		250V	
	Φ DXL	A	Φ DXL	A
1000			35X80	2.4
1500	35X80	2.9	35X100	3.0
2200	35X100	3.5	51X80	4.0
3300	51X80	4.8	51X100	5.4
4700	51X100	6.3	63.5X100	7.3
6800	51X140	7.3	63.5X120	8.9
10000	63.5X120	9.8	76X120	11.8
15000	76X120	13.0	90X140	16.4
22000	90X140	15.9	90X170	17.9
33000	90X170	19.5	90X220	19.7
47000	90X220	20.9	100X250	21.2
68000	100X250	22.6		

KNR Large Capacitance Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	350V		400V		450V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A
1000	51X60	3.5	51X70	3.8	51X80	4.0
1200	51X70	4.2	51X80	4.5	51X100	4.7
1500	51X80	4.9	51X100	5.3	51X110	5.4
1800	51X90	5.6	51X110	6.0	51X130	6.4
					63.5X90	6.1
2200	51X110	6.7	51X130	7.0	63.5X110	7.2
			63.5X90	6.8	76X90	7.1
2700	51X130	8.0	63.5X110	8.2	63.5X130	8.6
	63.5X90	7.7	76X90	8.1	76X100	8.3
3300	51X150	9.2	63.5X130	9.6	63.5X150	10.0
	63.5X100	9.0	76X100	9.3	76X110	9.7
3900	63.5X110	10.4	63.5X150	11.0	63.5X170	11.4
	76X90	10.3	76X100	10.5	76X130	11.2
4700	63.5X130	12.0	63.5X170	12.6	63.5X190	13.0
	76X100	11.9	76X130	12.3	76X150	12.9
5600	63.5X150	14.0	63.5X190	14.7	76X170	15.4
	76X110	13.5	76X150	14.3	90X150	15.3
6800	63.5X170	16.3	76X170	16.7	76X190	17.3
	76X130	16.0	90X130	16.3	90X150	17.1
8200	76X150	18.7	76X190	19.3	76X220	20.3
	90X130	18.2	90X150	19.0	90X170	19.8
10000	76X170	21.8	76X220	22.7	90X190	23.0
	90X150	21.3	90X170	22.2		
12000	76X190	25.1	90X190	25.5	90X220	26.9
	90X150	24.8				
15000	90X190	29.0	100X190	29.6	100X220	31.1
18000	90X220	32.4	100X220	33.0	100X250	37.0
22000	100X220	38.0	100X250	41.4		
27000	100X250	42.0				

KNR Large Capacitance Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 85°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	500V		550V	
	Φ DXL	A	Φ DXL	A
1000	51X110	4.2	51X130	4.3
1200	63.5X90	4.8	63.5X110	5.0
1500	63.5X90	5.5	63.5X130	6.0
1800	63.5X110	6.5	76X110	6.7
2200	63.5X130	7.7	76X130	8.0
2700	76X110	8.8	76X150	9.4
3300	76X130	10.4	76X170	11.0
3900	76X150	12.1	90X150	12.5
4700	90X130	13.7	90X170	14.5
5600	90X150	15.9	90X190	16.6
6800	90X170	18.5	90X220	19.5
8200	90X190	21.4	100X220	21.6
10000	100X190	23.8	100X250	25.2
12000	100X220	27.8		

KNT Large Capacitance Aluminum Electrolytic Capacitors

Series KNT Screw Terminal, Wide Temperature Range, High Ripple Capacitors

Guaranteed 5000 hours at 105°C

RoHS

Photo



Marking color: White print on a black sleeve

Specifications

No.		Item		Performance												
1		Temperature range(°C)		-40 to +105 (10~100V)						-25 to +105 (160~500V)						
2		Leakage current(μ A)		Less than 3√CV μ A or 5mA (after five minutes)						C: Rated Capacitance(μ F); V: Rated voltage(V) 20℃						
3		Capacitance tolerance (%)		±20						(20℃, 120Hz)						
4	Tangent of the loss angle (Tan δ)	Tan δ (max)	Rated voltage (V)		10	16	25	35	50	63	80	100	160 to 250	350 to 500	20℃ 120Hz	
			Φ D	L												
			35	80~100	0.65	0.45	0.40	0.30	0.25	0.25	0.20	0.12	0.15	0.20		
			51	80~100	0.90	0.60	0.50	0.40	0.25	0.25	0.20	0.15	0.15	0.20		
				120	0.85	0.60	0.50	0.40	0.30	-	-	-	-	0.20		
			63.5	100	-	-	0.65	-	0.35	0.30	0.25	0.20	0.20	0.20		
				110~130	1.20	0.80	0.70	0.50	0.35	0.30	-	-	0.20	0.20		
			76	100	2.00	1.20	0.90	0.70	0.55	0.50	0.30	0.30	-	0.20		
				120~150	2.00	1.20	0.90	0.70	0.55	0.50	0.35	0.30	0.20	0.20		
			90	140~220	2.40	2.00	1.50	1.00	0.75	0.60	0.40	0.30	0.25	0.20		
	100	220,250	2.40	2.00	1.50	1.00	0.75	0.60	0.40	0.30	0.25	0.20				
5	Low temperature characteristics	Rated voltage (V)		10~100						160~500						120Hz
		Impedance ratio (max)		Z(-40℃)/Z(+20℃)						Z(-25℃)/ Z(+20℃)						
				12						8						
6	Endurance (105℃) (Applied ripple current)	Test time		5000hours(10~250V、500V:2000hours)												
		Leakage current		The initial specified value or less												
		Percentage of capacitance change		Within ±20% of initial value												
		Tangent of the loss angle		300% or less of the initial specified value												
7	Shelf Life (105℃)	Test times		1000hours												
		Leakage current		The initial specified value or less												
		Percentage of capacitance change		Within ±20% of initial value												
		Tangent of the loss angle		300% or less of the initial specified value												
		Pretreatment performed JIS-C-5102														
8	Applicable standards		JIS-C-5102 and JIS-C- 5141													

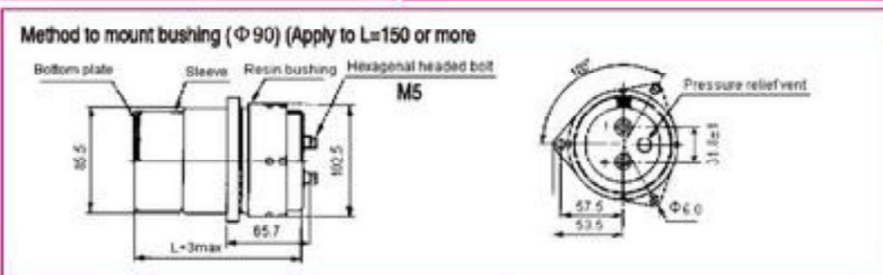
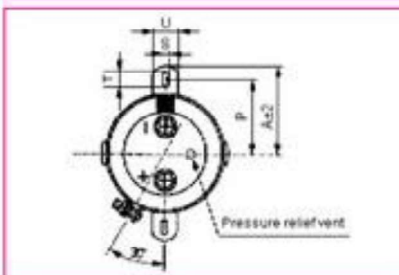
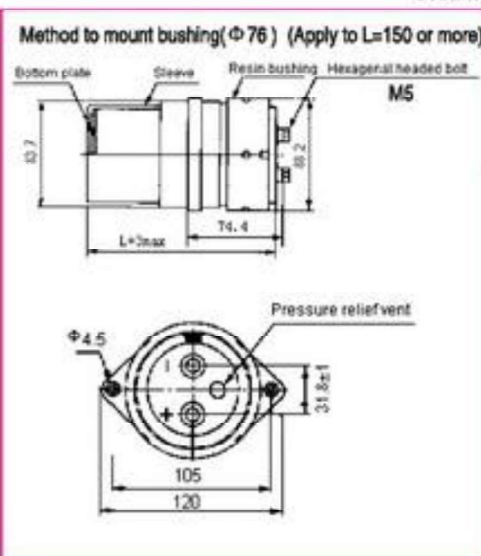
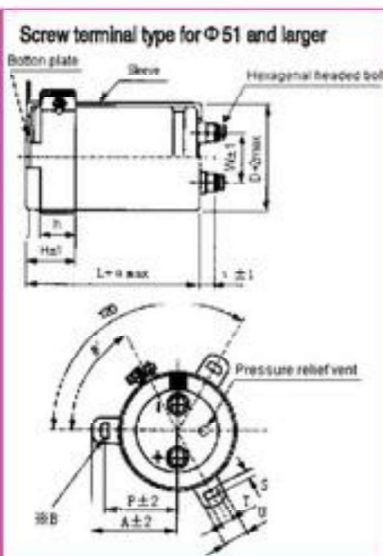
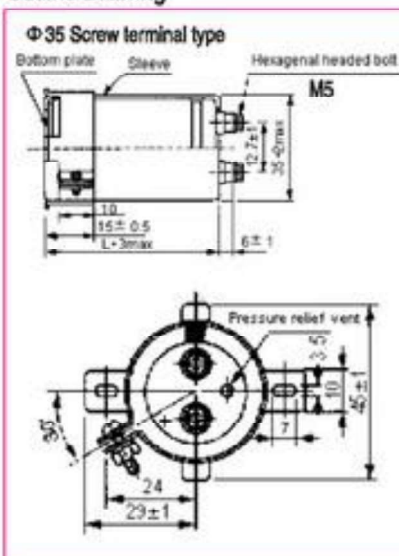
Coefficient of Frequency for Ripple Current

Frequency (Hz)	60	120	360	1K	10K~
Rated Voltage (v)					
10~100	0.90	1.00	1.08	1.15	1.15
160~250	0.88	1.00	1.08	1.15	1.20
350~500	0.82	1.00	1.20	1.35	1.40

KNT Large Capacitance Aluminum Electrolytic Capacitors

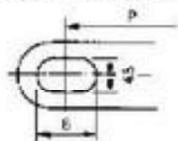
Outline Drawing

Unit: mm



✖ B

3-leg brackets for $\Phi 90$ capacitors have different hole shapes from the ordinary ones as illustrated below.



Dimensions of mounting bracket

Dimension of terminal pitch (W) and length (L) and Nominal dia. of bolt

ΦD	W	t	α	Nominal dia. of bolt
51	22.0	6	3	M5
63.5	28.6	6	3	M5
76	31.8	6	3	M5
90	31.8	6	3	M5
100	41.5	10	4	M5

Symbol \ Leg shape Φ D	3-Legs					2-Legs			
	51	63.5	76	90	100	51	63.5	76	90
P	32.5	38.1	44.5	50.8	56.3	33.2	40.5	46.5	53
A	38.5	43	49.2	58.5	62	40	46.5	53	59
T	7.5	8.0	7.0	8.0	8.0	6.0	7.0	6.0	6.0
S	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
U	12	14	14	16	16	14	14	14	14
θ °	60	60	60	60	60	30	30	30	30
H	20	25	30	35	36	25	35	35	35
h	15	20	24	25	30	15	20	20	20

KNT Large Capacitance Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	10V		16V		25V		35V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
10000							35X80	4.7
15000							35X80	5.1
22000					35X80	4.9	35X100	5.6
33000	35X80	4.8	35X80	5.2	35X100	6.2	51X80	7.4
47000	35X100	6.2	35X100	6.8	51X80	8.3	51X100	8.4
68000	51X80	6.8	51X80	7.1	51X120	10.2	51X120	12.3
100000	51X100	8.6	51X100	9.6	63.5X100	11.5	63.5X120	13.6
150000	51X120	10.8	51X120	11.0	63.5X120	13.8	76X120	15.1
220000	63.5X120	13.2	63.5X120	14.1	76X120	17.0	90X140	17.4
330000	76X120	15.8	76X120	20.6	90X140	20.8	90X170	21.3
470000	90X140	17.0	90X140	22.1	90X170	22.4	90X220	25.4
680000	90X170	18.4	90X170	24.0	90X220	24.2	100X250	27.5
1000000	90X220	20.1	90X220	26.1	100X220	26.4		
1500000	100X220	22.1	100X250	28.8				

V.DC Contents μF	50V		63V		80V		100V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
2200							35X80	2.4
3300							35X80	3.3
4700					35X80	3.5	35X100	3.8
6800					35X100	3.9	51X80	5.2
10000	35X80	4.9	35X100	5.0	51X80	5.4	51X100	6.7
15000	35X100	5.5	51X80	5.9	51X100	6.4	63.5X100	7.8
22000	51X80	6.3	51X100	6.9	63.5X100	8.4	76X100	9.9
33000	51X120	8.0	63.5X100	9.4	76X100	9.9	76X140	12.7
47000	63.5X100	9.9	63.5X120	11.2	76X120	13.4	90X140	17.0
68000	63.5X120	12.8	76X120	13.5	90X140	17.0	90X170	18.2
100000	76X120	16.8	90X140	17.8	90X170	18.6	90X220	20.6
150000	90X140	19.5	90X170	21.0	90X220	21.6	100X220	23.4
220000	90X170	22.0	90X220	23.7	100X250	24.8		
330000	90X220	24.3	100X250	26.1				
470000	100X250	26.1						

KNT Large Capacitance Aluminum Electrolytic Capacitors

Dimension: Φ DXL(mm)

Ripple Current: A/rms at 120Hz, 105°C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC Contents μF	160V		200V		250V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A
680					35X80	1.4
1000	35X80	1.8	35X80	1.7	35X100	1.9
1500	35X80	2.1	35X100	2.3	51X80	2.4
2200	35X100	2.7	51X80	2.9	51X100	3.2
3300	51X80	3.8	51X100	3.9	63.5X100	4.3
4700	51X100	4.5	63.5X100	5.1	63.5X120	5.9
6800	63.5X100	6.8	63.5X120	7.0	76X120	7.1
10000	63.5X120	7.8	76X120	8.2	90X140	9.6
15000	76X120	9.8	76X140	10.4	90X170	12.7
22000	76X140	12.5	90X140	15.1	90X220	15.4
33000	90X140	13.4	90X220	16.6	100X250	17.0
47000	90X220	17.2	90X250	19.9		
68000	100X250	19.2				

V.DC Contents μF	350V		400V		450V		500V	
	Φ DXL	A	Φ DXL	A	Φ DXL	A	Φ DXL	A
220			35X80	1.6	35X80	1.8		
330	35X80	2.1	35X80	2.3	35X100	2.4	51X80	2.7
470	35X80	2.8	35X100	3.1	51X80	3.4	51X80	3.2
680	51X80	4.1	51X80	4.2	51X100	4.4	51X100	4.2
1000	51X80	6.5	51X80	6.6	51X100	7.0	51X120	5.5
1500	51X100	8.6	51X120	9.1	51X120	9.2	63.5X110	7.1
2200	51X120	11.0	63.5X100	11.5	63.5X110	11.8	63.5X130	9.3
2700	63.5X100	12.7	63.5X110	13.1	63.5X130	13.8	63.5X150	11.0
					76X110	14.5	76X130	11.0
3300	63.5X100	14.4	63.5X130	15.4	63.5X150	16.5	63.5X170	12.9
					76X130	17.1	76X150	13.0
3900	63.5X130	16.8	63.5X150	17.9	63.5X170	18.3		
			76X110	18.2			76X150	14.1
4700	63.5X150	19.8	63.5X170	20.7			76X190	17.2
	76X120	19.7	76X130	20.3	76X150	21.7	90X150	16.3
	63.5X170	22.7						
5600	76X130	22.2	76X150	23.7	76X190	26.4		
					90X150	24.1	90X150	17.8
6800	76X150	26.2	76X170	27.6				
			90X150	26.9	90X170	28.3	90X170	20.7
8200	76X170	30.3						
	90X150	29.3	90X170	31.0	90X190	32.5	90X220	25.5
10000	90X150	32.4	90X190	32.9	90X220	35.1	90X250	29.9
12000	90X190	36.0	90X220	38.3	90X220	39.2		
15000	90X220	42.9	100X220	44.5	90X250	45.6		
22000	100X250	48.0						

Screw Terminal Type