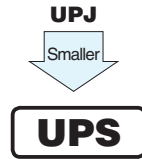
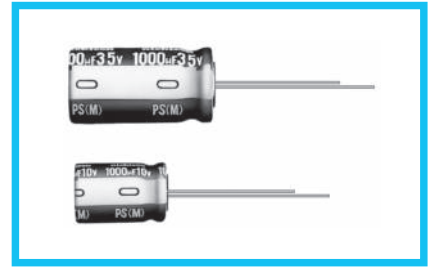


ALUMINUM ELECTROLYTIC CAPACITORS

UPS

Miniature Sized, Low Impedance,
For Switching Power Supplies

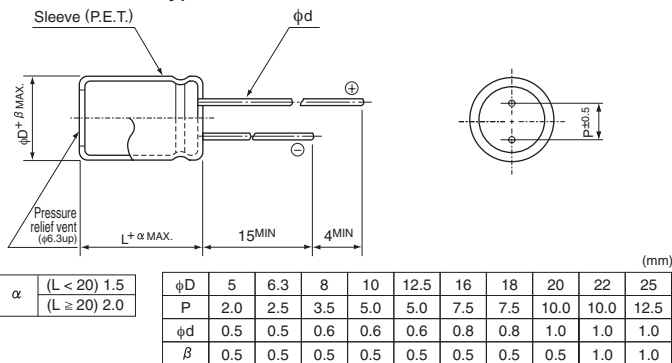


- Wide temperature range type, miniature sized.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

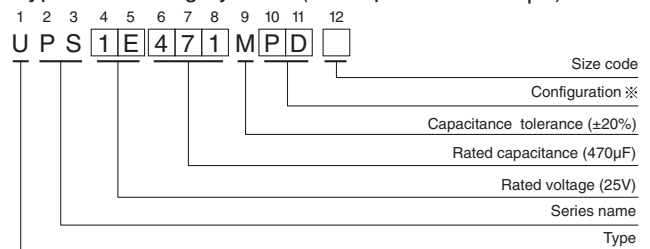
Specifications

Item	Performance Characteristics	
Category Temperature Range	-55 to +105°C (6.3 to 100V), -40 to +105°C (160 to 400V), -25 to +105°C (450V)	
Rated Voltage Range	6.3 to 450V	
Rated Capacitance Range	0.47 to 15000µF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Leakage Current	Rated voltage (V)	6.3 to 100
	Leakage current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (µA), whichever is greater.
Tangent of loss angle (tan δ)	For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF	
	Rated voltage (V)	Measurement frequency : 120Hz at 20°C
Stability at Low Temperature	Measurement frequency : 120Hz	
	Rated voltage (V)	Impedance ratio (MAX.)
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours (2000 hours for φD= 5 to 10) at 105°C, the peak voltage shall not exceed the rated voltage.	
	Capacitance change	tan δ
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.	
	Marking	

Radial Lead Type



Type numbering system (Example : 25V 470µF)



φ D	Pb-free leadwire	Pb-free PET sleeve
5	DD	
6.3	ED	
8 · 10	PD	
12.5 to 18	HD	
20 to 25	RD	

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

Frequency coefficient of rated ripple current

V	Frequency					
	Cap.(µF)	50Hz	120Hz	300Hz	1kHz	10kHz or more
6.3 to 100	2.2 to 47	—	0.17	0.40	0.65	1.00
	100 to 220	0.30	0.50	0.65	0.80	1.00
	330 to 680	0.57	0.71	0.82	0.90	1.00
	1000 to 15000	0.75	0.87	0.96	0.98	1.00
160 to 450	0.47 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 470	0.90	1.00	1.10	1.13	1.15

• Dimension table in next page.

UPS

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 1 minute)	Impedance (Ω) MAX. (20°C/100kHz)	Rated Ripple (mArms)		Part Number
						105°C/100kHz	105°C/120Hz	
6.3 (0J)	22	5×11	0.24	4.158	1.50	160	—	UPS0J220MDD
	33	5×11	0.24	6.237	1.50	160	—	UPS0J330MDD
	47	5×11	0.24	8.883	1.50	160	—	UPS0J470MDD
	100	5×11	0.24	18.9	1.50	160	—	UPS0J101MDD
	150	6.3×11	0.24	28.35	0.50	250	—	UPS0J151MED
	220	6.3×11	0.24	41.58	0.50	250	—	UPS0J221MED
	330	6.3×11	0.24	62.37	0.50	250	—	UPS0J331MED
	470	8×11.5	0.24	88.83	0.28	410	—	UPS0J471MPD
	680	10×12.5	0.24	128.52	0.19	600	—	UPS0J681MPD
	1000	10×12.5	0.24	189	0.19	600	—	UPS0J102MPD
	1500	10×20	0.24	283.5	0.11	1000	—	UPS0J152MPD
	2200	12.5×20	0.26	415.8	0.075	1250	—	UPS0J222MHD
	3300	12.5×20	0.28	623.7	0.075	1250	—	UPS0J332MHD
	4700	16×25	0.30	888.3	0.038	1900	—	UPS0J472MHD
	6800	16×25	0.34	1285.2	0.038	1900	—	UPS0J682MHD
10000	16×31.5	0.42	1890	0.033	2350	—	UPS0J103MHD	
15000	18×35.5	0.52	2835	0.030	2700	—	UPS0J153MHD	
10 (1A)	22	5×11	0.20	6.6	1.50	160	—	UPS1A220MDD
	33	5×11	0.20	9.9	1.50	160	—	UPS1A330MDD
	47	5×11	0.20	14.1	1.50	160	—	UPS1A470MDD
	100	5×11	0.20	30	1.50	160	—	UPS1A101MDD
	150	6.3×11	0.20	45	0.50	250	—	UPS1A151MED
	220	6.3×11	0.20	66	0.50	250	—	UPS1A221MED
	330	8×11.5	0.20	99	0.28	410	—	UPS1A331MPD
	470	8×11.5	0.20	141	0.28	410	—	UPS1A471MPD
	680	10×12.5	0.20	204	0.19	600	—	UPS1A681MPD
	1000	10×16	0.20	300	0.14	800	—	UPS1A102MPD
	1500	10×20	0.20	450	0.11	1000	—	UPS1A152MPD
	2200	12.5×20	0.22	660	0.075	1250	—	UPS1A222MHD
	3300	12.5×25	0.24	990	0.057	1550	—	UPS1A332MHD
	4700	16×25	0.26	1410	0.038	1900	—	UPS1A472MHD
	6800	16×31.5	0.30	2040	0.033	2350	—	UPS1A682MHD
10000	18×35.5	0.38	3000	0.030	2700	—	UPS1A103MHD	
15000	18×40	0.48	4500	0.027	3300	—	UPS1A153MHD	
16 (1C)	10	5×11	0.16	4.8	1.50	160	—	UPS1C100MDD
	22	5×11	0.16	10.56	1.50	160	—	UPS1C220MDD
	33	5×11	0.16	15.84	1.50	160	—	UPS1C330MDD
	47	5×11	0.16	22.56	1.50	160	—	UPS1C470MDD
	100	6.3×11	0.16	48	0.50	250	—	UPS1C101MED
	150	6.3×11	0.16	72	0.50	250	—	UPS1C151MED
	220	8×11.5	0.16	105.6	0.28	410	—	UPS1C221MPD
	330	8×11.5	0.16	158.4	0.28	410	—	UPS1C331MPD
	470	10×12.5	0.16	225.6	0.19	600	—	UPS1C471MPD
	680	10×16	0.16	326.4	0.14	800	—	UPS1C681MPD
	1000	10×20	0.16	480	0.11	1000	—	UPS1C102MPD
	1500	12.5×20	0.16	720	0.075	1250	—	UPS1C152MHD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).
 If there is no size code in the part number, please add size code "1" and then add the appropriate code.

UPS

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 1 minute)	Impedance (Ω) MAX. (20°C/100kHz)	Rated Ripple (mArms)		Part Number
						105°C/100kHz	105°C/120Hz	
16 (1C)	2200	12.5×25	0.18	1056	0.057	1550	—	UPS1C222MHD
	3300	16×25	0.20	1584	0.038	1900	—	UPS1C332MHD
	4700	16×31.5	0.22	2256	0.033	2350	—	UPS1C472MHD
	6800	18×35.5	0.26	3264	0.030	2700	—	UPS1C682MHD
	10000	18×40	0.34	4800	0.027	3300	—	UPS1C103MHD
25 (1E)	4.7	5×11	0.14	4	1.50	160	—	UPS1E4R7MDD
	10	5×11	0.14	7.5	1.50	160	—	UPS1E100MDD
	22	5×11	0.14	16.5	1.50	160	—	UPS1E220MDD
	33	5×11	0.14	24.75	1.50	160	—	UPS1E330MDD
	47	5×11	0.14	35.25	1.50	160	—	UPS1E470MDD
	100	6.3×11	0.14	75	0.50	250	—	UPS1E101MED
	150	8×11.5	0.14	112.5	0.28	410	—	UPS1E151MPD
	220	8×11.5	0.14	165	0.28	410	—	UPS1E221MPD
	330	10×12.5	0.14	247.5	0.19	600	—	UPS1E331MPD
	470	10×16	0.14	352.5	0.14	800	—	UPS1E471MPD
	680	10×20	0.14	510	0.11	1000	—	UPS1E681MPD
	1000	12.5×20	0.14	750	0.075	1250	—	UPS1E102MHD
	1500	16×25	0.14	1125	0.038	1900	—	UPS1E152MHD
	2200	16×25	0.16	1650	0.038	1900	—	UPS1E222MHD
	3300	16×31.5	0.18	2475	0.033	2350	—	UPS1E332MHD
4700	18×35.5	0.20	3525	0.030	2700	—	UPS1E472MHD	
6800	18×40	0.24	5100	0.027	3300	—	UPS1E682MHD	
35 (1V)	4.7	5×11	0.12	4.935	1.50	160	—	UPS1V4R7MDD
	10	5×11	0.12	10.5	1.50	160	—	UPS1V100MDD
	22	5×11	0.12	23.1	1.50	160	—	UPS1V220MDD
	33	5×11	0.12	34.65	1.50	160	—	UPS1V330MDD
	47	6.3×11	0.12	49.35	0.50	250	—	UPS1V470MED
	100	8×11.5	0.12	105	0.28	410	—	UPS1V101MPD
	150	8×11.5	0.12	157.5	0.28	410	—	UPS1V151MPD
	220	10×12.5	0.12	231	0.19	600	—	UPS1V221MPD
	330	10×16	0.12	346.5	0.14	800	—	UPS1V331MPD
	470	10×20	0.12	493.5	0.11	1000	—	UPS1V471MPD
	680	12.5×20	0.12	714	0.075	1250	—	UPS1V681MHD
	1000	12.5×25	0.12	1050	0.057	1550	—	UPS1V102MHD
	1500	16×25	0.12	1575	0.038	1900	—	UPS1V152MHD
	2200	16×31.5	0.14	2310	0.033	2350	—	UPS1V222MHD
	3300	18×35.5	0.16	3465	0.030	2700	—	UPS1V332MHD
4700	18×40	0.18	4935	0.027	3300	—	UPS1V472MHD	
50 (1H)	2.2	5×11	0.10	4	4.50	55	—	UPS1H2R2MDD
	3.3	5×11	0.10	4.95	3.90	65	—	UPS1H3R3MDD
	4.7	5×11	0.10	7.05	3.50	90	—	UPS1H4R7MDD
	10	5×11	0.10	15	2.10	120	—	UPS1H100MDD
	22	5×11	0.10	33	1.80	150	—	UPS1H220MDD
	33	6.3×11	0.10	49.5	0.65	250	—	UPS1H330MED
	47	6.3×11	0.10	70.5	0.65	250	—	UPS1H470MED
	100	8×11.5	0.10	150	0.36	340	—	UPS1H101MPD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).
 If there is no size code in the part number, please add size code "1" and then add the appropriate code.

UPS

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μ F)	Case Size ϕ D \times L (mm)	tan δ	Leakage Current (μ A) (at 20°C after 1 minute)	Impedance (Ω) MAX. (20°C/100kHz)	Rated Ripple (mArms)		Part Number
						105°C/ 100kHz	105°C/ 120Hz	
50 (1H)	150	10 \times 12.5	0.10	225	0.26	490	—	UPS1H151MPD
	220	10 \times 16	0.10	330	0.18	650	—	UPS1H221MPD
	330	10 \times 20	0.10	495	0.15	810	—	UPS1H331MPD
	470	12.5 \times 20	0.10	705	0.13	1100	—	UPS1H471MHD
	680	12.5 \times 25	0.10	1020	0.10	1200	—	UPS1H681MHD
	1000	16 \times 25	0.10	1500	0.058	1600	—	UPS1H102MHD
	1500	16 \times 31.5	0.10	2250	0.040	2000	—	UPS1H152MHD
	2200	18 \times 35.5	0.12	3300	0.035	2300	—	UPS1H222MHD
63 (1J)	4.7	5 \times 11	0.09	8.883	4.70	68	—	UPS1J4R7MDD
	10	5 \times 11	0.09	18.9	2.10	110	—	UPS1J100MDD
	22	6.3 \times 11	0.09	41.58	0.98	180	—	UPS1J220MED
	33	6.3 \times 11	0.09	62.37	0.71	220	—	UPS1J330MED
	47	8 \times 11.5	0.09	88.83	0.65	310	—	UPS1J470MPD
	100	10 \times 12.5	0.09	189	0.31	390	—	UPS1J101MPD
	150	10 \times 16	0.09	283.5	0.25	440	—	UPS1J151MPD
	220	10 \times 20	0.09	415.8	0.20	700	—	UPS1J221MPD
	330	12.5 \times 20	0.09	623.7	0.12	980	—	UPS1J331MHD
	470	12.5 \times 25	0.09	888.3	0.081	1200	—	UPS1J471MHD
	680	16 \times 25	0.09	1285.2	0.058	1300	—	UPS1J681MHD
	1000	16 \times 31.5	0.09	1890	0.049	1380	—	UPS1J102MHD
	1500	18 \times 35.5	0.09	2835	0.038	1750	—	UPS1J152MHD
2200	18 \times 40	0.11	4158	0.032	2120	—	UPS1J222MHD	
100 (2A)	2.2	5 \times 11	0.08	6.6	9.80	44	—	UPS2A2R2MDD
	3.3	5 \times 11	0.08	9.9	6.60	58	—	UPS2A3R3MDD
	4.7	5 \times 11	0.08	14.1	4.60	74	—	UPS2A4R7MDD
	10	6.3 \times 11	0.08	30	1.80	130	—	UPS2A100MED
	22	8 \times 11.5	0.08	66	0.68	230	—	UPS2A220MPD
	33	10 \times 12.5	0.08	99	0.46	320	—	UPS2A330MPD
	47	10 \times 16	0.08	141	0.37	420	—	UPS2A470MPD
	100	12.5 \times 20	0.08	300	0.18	580	—	UPS2A101MHD
	150	12.5 \times 25	0.08	450	0.13	710	—	UPS2A151MHD
	220	16 \times 25	0.08	660	0.10	890	—	UPS2A221MHD
	330	16 \times 25	0.08	990	0.090	1080	—	UPS2A331MHD
	470	16 \times 31.5	0.08	1410	0.076	1310	—	UPS2A471MHD
	680	16 \times 35.5	0.08	2040	0.064	1410	—	UPS2A681MHD
1000	18 \times 40	0.08	3000	0.047	1520	—	UPS2A102MHD	

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).

If there is no size code in the part number, please add size code "1" and then add the appropriate code.

UPS

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μ F)	Case Size ϕ D \times L (mm)	tan δ	Leakage Current (μ A) (at 20°C after 1 minute)	Rated Ripple (mArms)		Part Number
					105°C/ 100kHz	105°C/ 120Hz	
160 (2C)	0.47	6.3 \times 11	0.15	47.52	—	12	UPS2CR47MED
	1	6.3 \times 11	0.15	56	—	17	UPS2C010MED
	2.2	6.3 \times 11	0.15	75.2	—	25	UPS2C2R2MED
	3.3	8 \times 11.5	0.15	92.8	—	36	UPS2C3R3MPD
	4.7	8 \times 11.5	0.15	115.2	—	43	UPS2C4R7MPD
	10	10 \times 12.5	0.15	164	—	70	UPS2C100MPD
	22	10 \times 20	0.15	240.8	—	130	UPS2C220MPD
	33	12.5 \times 20	0.15	311.2	—	180	UPS2C330MHD
	47	12.5 \times 25	0.15	400.8	—	220	UPS2C470MHD
	100	16 \times 25	0.15	740	—	330	UPS2C101MHD
	220	18 \times 35.5	0.15	1508	—	500	UPS2C221MHD
	220	20 \times 31	0.15	1508	—	500	UPS2C221MRD6
	330	20 \times 40	0.15	2212	—	900	UPS2C331MRD
470	22 \times 50	0.15	3108	—	1200	UPS2C471MRD	
200 (2D)	0.47	6.3 \times 11	0.15	49.4	—	12	UPS2DR47MED
	1	6.3 \times 11	0.15	60	—	17	UPS2D010MED
	2.2	6.3 \times 11	0.15	84	—	25	UPS2D2R2MED
	3.3	8 \times 11.5	0.15	106	—	36	UPS2D3R3MPD
	4.7	10 \times 12.5	0.15	134	—	50	UPS2D4R7MPD
	10	10 \times 16	0.15	180	—	80	UPS2D100MPD
	22	10 \times 20	0.15	276	—	140	UPS2D220MPD
	33	12.5 \times 25	0.15	364	—	190	UPS2D330MHD
	47	12.5 \times 25	0.15	476	—	220	UPS2D470MHD
	100	16 \times 31.5	0.15	900	—	335	UPS2D101MHD
	220	18 \times 40	0.15	1860	—	515	UPS2D221MHD
	220	20 \times 35	0.15	1860	—	515	UPS2D221MRD6
	330	22 \times 40	0.15	2740	—	1100	UPS2D331MRD
470	22 \times 50	0.15	3860	—	1310	UPS2D471MRD	
250 (2E)	0.47	6.3 \times 11	0.15	51.75	—	12	UPS2ER47MED
	1	6.3 \times 11	0.15	65	—	17	UPS2E010MED
	2.2	8 \times 11.5	0.15	95	—	29	UPS2E2R2MPD
	3.3	10 \times 12.5	0.15	122.5	—	42	UPS2E3R3MPD
	4.7	10 \times 12.5	0.15	147	—	50	UPS2E4R7MPD
	10	10 \times 20	0.15	200	—	88	UPS2E100MPD
	22	12.5 \times 25	0.15	320	—	155	UPS2E220MHD
	33	12.5 \times 25	0.15	430	—	190	UPS2E330MHD
	47	16 \times 25	0.15	570	—	230	UPS2E470MHD
	100	18 \times 35.5	0.15	1100	—	340	UPS2E101MHD
	100	20 \times 31	0.15	1100	—	340	UPS2E101MRD6
	220	20 \times 40	0.15	2300	—	525	UPS2E221MRD
	330	22 \times 50	0.15	3400	—	1150	UPS2E331MRD
470	25 \times 50	0.15	4800	—	1350	UPS2E471MRD	

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If there is no size code in the part number, please add size code "1" and then add the appropriate code.

UPS

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μ F)	Case Size ϕ D \times L (mm)	tan δ	Leakage Current (μ A) (at 20°C after 1 minute)	Rated Ripple (mArms)		Part Number
					105°C/ 100kHz	105°C/ 120Hz	
315 (2F)	0.47	8 \times 11.5	0.20	54.805	—	11	UPS2FR47MPD
	1	8 \times 11.5	0.20	71.5	—	16	UPS2F010MPD
	2.2	10 \times 12.5	0.20	109.3	—	28	UPS2F2R2MPD
	3.3	10 \times 12.5	0.20	141.58	—	34	UPS2F3R3MPD
	4.7	10 \times 16	0.20	159.22	—	45	UPS2F4R7MPD
	10	10 \times 20	0.20	226	—	72	UPS2F100MPD
	22	12.5 \times 25	0.20	377.2	—	120	UPS2F220MHD
	33	16 \times 25	0.20	515.8	—	155	UPS2F330MHD
	47	16 \times 35.5	0.20	692.2	—	190	UPS2F470MHD
	100	18 \times 40	0.20	1360	—	285	UPS2F101MHD
	100	20 \times 35	0.20	1360	—	285	UPS2F101MRD6
220	22 \times 50	0.20	2872	—	540	UPS2F221MRD	
350 (2V)	0.47	8 \times 11.5	0.20	56.45	—	11	UPS2VR47MPD
	1	10 \times 12.5	0.20	75	—	17	UPS2V010MPD
	2.2	10 \times 16	0.20	117	—	31	UPS2V2R2MPD
	3.3	10 \times 16	0.20	146.2	—	38	UPS2V3R3MPD
	4.7	10 \times 20	0.20	165.8	—	49	UPS2V4R7MPD
	10	12.5 \times 20	0.20	240	—	82	UPS2V100MHD
	22	16 \times 25	0.20	408	—	130	UPS2V220MHD
	33	16 \times 31.5	0.20	562	—	160	UPS2V330MHD
	47	18 \times 35.5	0.20	758	—	200	UPS2V470MHD
	47	20 \times 31	0.20	758	—	200	UPS2V470MRD6
	100	20 \times 40	0.20	1500	—	290	UPS2V101MRD
220	25 \times 50	0.20	3180	—	550	UPS2V221MRD	
400 (2G)	1	10 \times 12.5	0.25	80	—	16	UPS2G010MPD
	2.2	10 \times 16	0.25	128	—	27	UPS2G2R2MPD
	3.3	10 \times 20	0.25	152.8	—	36	UPS2G3R3MPD
	4.7	10 \times 20	0.25	175.2	—	43	UPS2G4R7MPD
	10	12.5 \times 25	0.25	260	—	72	UPS2G100MHD
	22	16 \times 25	0.25	452	—	110	UPS2G220MHD
	33	16 \times 31.5	0.25	628	—	140	UPS2G330MHD
	47	18 \times 35.5	0.25	852	—	170	UPS2G470MHD
	47	20 \times 31	0.25	852	—	170	UPS2G470MRD6
100	22 \times 50	0.25	1700	—	350	UPS2G101MRD	
450 (2W)	1	10 \times 12.5	0.25	85	—	18	UPS2W010MPD
	2.2	10 \times 20	0.25	139	—	29	UPS2W2R2MPD
	3.3	12.5 \times 20	0.25	159.4	—	41	UPS2W3R3MHD
	4.7	12.5 \times 20	0.25	184.6	—	49	UPS2W4R7MHD
	10	16 \times 25	0.25	280	—	75	UPS2W100MHD
	22	16 \times 31.5	0.25	496	—	115	UPS2W220MHD
	33	18 \times 35.5	0.25	694	—	145	UPS2W330MHD
	33	20 \times 31	0.25	694	—	145	UPS2W330MRD6
	47	20 \times 40	0.25	946	—	175	UPS2W470MRD
100	25 \times 50	0.25	1900	—	350	UPS2W101MRD	

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).

If there is no size code in the part number, please add size code "1" and then add the appropriate code.

- For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.