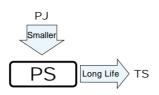
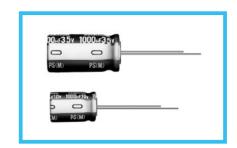


- Wide temperature range type, miniature sized.
- Compliant to the RoHS directive (2002/95/EC).



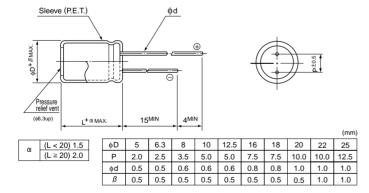




### ■Specifications

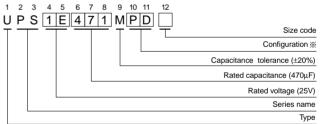
Item					Perform	nance C	haracte	ristics				
Category Temperature Range	−55 to +105°C (6.3	3 to 100V)	, -40 to +	+105°C (16	0 to 400V	), -25 to	+105°C	C (450V)				
Rated Voltage Range	6.3 to 450V											
Rated Capacitance Range	0.47 to 15000µF											
Capacitance Tolerance	±20% at 120Hz, 2	20°C										
Leakage Current	Rated voltage (V) Leakage current			6.3 to 1	d voltage, le		ent		0.1CV+40 (j	uA)max. (1 m		
Tangent of loss angle (tan $\delta$ )	For capacitance of n Rated voltage (V) tan δ (MAX.)	more than 1000µF, add 6.3 10 0.24 0.20		d 0.02 for ev	very increas 25 0.14	se of 1000 35 0.12	0μF 50	63	nt frequence 100 0.08	<u>,                                      </u>		
Stability at Low Temperature	Rated v Impedance ratio (MAX.)	oltage (V) Z-25°C / Z-40°C / Z-55°C /	Z+20°C	6.3 · 10 — — 5	16 · 25 — — 4	35 · 50 — — — 3	2	3 4	250 3 6 —			450 15 —
Endurance	capacitors are rest current is applied f	ored to 20 or 3000 ho	°C after Dours (2000	C. bias pl hours for	us rated ri	0) at	tan δ		200% or le	0.08		ified value
Shelf Life		MAX.) Z-55°C / Z+20°C 5 4 3 — — — — — — — — — — — — — — — — — —										
Marking	Printed with white	color lette	r on dark l	orown slee	ve.							

### ■Radial Lead Type



• Please refer to page 20 about the end seal configulation.

## Type numbering system (Example : $25V 470\mu F$ )



n
Pb-free leadwire Pb-free PET sleeve
DD
ED
PD
HD
RD

### Frequency coefficient of rated ripple current

' '		•				
V	Cap.(µF) Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
	Less than 47	_	0.17	0.40	0.65	1.00
6.2 to 100	100 to 220	s than 47     —     0.17     0.40     0.65     1.00       0 to 220     0.30     0.50     0.65     0.80     1.00       0 to 680     0.57     0.71     0.82     0.90     1.00       0 to 15000     0.75     0.87     0.96     0.98     1.00	1.00			
6.3 to 100	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 150	0.47 to 220	0.80	1.00	1.25	1.40	1.60
160 to 450	330 to 470	0.90	1.00	1.10	1.13	1.15

Please refer to page 20, 21, 22 about the formed or taped product spec. Please refer to page 4 for the minimum order quantity.



# ■Standard Ratings

	V (Code)		6.3 (0J)			10 (1A)			16 (1C)			25 (1E)	
	Item	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple
Can (uE)		φD×L	(Ω) MAX. 20°C/100kHz	(mArms) 105°C/100kHz	φD×L	(Ω) MAX. 20°C/100kHz	(mArms) 105°C/100kHz	φD×L	(Ω) MAX. 20°C/100kHz	(mArms) 105°C/100kHz	φD×L	(Ω) MAX. 20°C/100kHz	(mArms) 105°C/100kHz
Cap. (µF)	6	(mm)	20 C/100KHZ	105 C/100KHZ	(mm)	20 C/100KHZ	105 C/100KHZ	(mm)	20 C/100kH2	105 C/100KHZ	(mm)	20 C/100KHZ	105 C/100KHZ
4.7	4R7										5×11	1.50	160
10	100							5×11	1.50	160	5×11	1.50	160
22	220	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160
33	330	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160
47	470	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160
100	101	5×11	1.50	160	5×11	1.50	160	6.3×11	0.50	250	6.3×11	0.50	250
150	151	6.3×11	0.50	250	6.3×11	0.50	250	6.3×11	0.50	250	8×11.5	0.28	410
220	221	6.3×11	0.50	250	6.3×11	0.50	250	8×11.5	0.28	410	8×11.5	0.28	410
330	331	6.3×11	0.50	250	8×11.5	0.28	410	8×11.5	0.28	410	10×12.5	0.19	600
470	471	8×11.5	0.28	410	8×11.5	0.28	410	10×12.5	0.19	600	10×16	0.14	800
680	681	10×12.5	0.19	600	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	1000
1000	102	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	1000	$12.5 \times 20$	0.075	1250
1500	152	10×20	0.11	1000	10×20	0.11	1000	12.5×20	0.075	1250	16×25	0.038	1900
2200	222	$12.5 \times 20$	0.075	1250	12.5×20	0.075	1250	12.5×25	0.057	1550	16×25	0.038	1900
3300	332	12.5×20	0.075	1250	12.5×25	0.057	1550	16×25	0.038	1900	16×31.5	0.033	2350
4700	472	16×25	0.038	1900	16×25	0.038	1900	16×31.5	0.033	2350	18×35.5	0.030	2700
6800	682	16×25	0.038	1900	16×31.5	0.033	2350	18×35.5	0.030	2700	18×40	0.027	3300
10000	103	16×31.5	0.033	2350	18×35.5	0.030	2700	18×40	0.027	3300			
15000	153	18×35.5	0.030	2700	18×40	0.027	3300						

	V (Code)		35 (1V)			50 (1H)			63 (1J)			100 (2A)	
Cap. (µF)	Item	Case size $\phi D \times L$ (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size $\phi D \times L$ (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size $\phi D \times L$ (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz
0.47	R47				5×11	7.50	25				5×11	43.0	20
1	010				5×11	5.30	40				5×11	20.0	30
2.2	2R2				5×11	4.50	55				5×11	9.80	44
3.3	3R3				5×11	3.90	65				5×11	6.60	58
4.7	4R7	5×11	1.50	160	5×11	3.50	90	5×11	4.70	68	5×11	4.60	74
10	100	5×11	1.50	160	5×11	2.10	120	5×11	2.10	110	6.3×11	1.80	130
22	220	5×11	1.50	160	5×11	1.80	150	6.3×11	0.98	180	8×11.5	0.68	230
33	330	5×11	1.50	160	6.3×11	0.65	250	6.3×11	0.71	220	10×12.5	0.46	320
47	470	6.3×11	0.50	250	6.3×11	0.65	250	8×11.5	0.65	310	10×16	0.37	420
100	101	8×11.5	0.28	410	8×11.5	0.36	340	10×12.5	0.31	390	$12.5 \times 20$	0.18	580
150	151	8×11.5	0.28	410	10×12.5	0.26	490	10×16	0.25	440	$12.5 \times 25$	0.13	710
220	221	10×12.5	0.19	600	10×16	0.18	650	10×20	0.20	700	16×25	0.10	890
330	331	10×16	0.14	800	10×20	0.15	810	12.5×20	0.12	980	16×25	0.090	1080
470	471	10×20	0.11	1000	12.5×20	0.13	1100	12.5×25	0.081	1200	16×31.5	0.076	1310
680	681	$12.5 \times 20$	0.075	1250	12.5×25	0.10	1200	16×25	0.058	1300	16×35.5	0.064	1410
1000	102	12.5×25	0.057	1550	16×25	0.058	1600	16×31.5	0.049	1380	18×40	0.047	1520
1500	152	16×25	0.038	1900	16×31.5	0.040	2000	18×35.5	0.038	1750			
2200	222	16×31.5	0.033	2350	18×35.5	0.035	2300	18×40	0.032	2120			
3300	332	18×35.5	0.030	2700									
4700	472	18×40	0.027	3300									

	V	160		200		250		315		350		400		450	
Cap.(µF)	Code	2C		2D		2E		2F		2V		2G		2W	
0.47	R47	6.3 × 11	12	6.3 × 11	12	6.3 × 11	12	8 × 11.5	11	8 × 11.5	11				
1	010	6.3 × 11	17	6.3 × 11	17	6.3 × 11	17	8 × 11.5	16	10 × 12.5	17	10 × 12.5	16	10 × 12.5	18
2.2	2R2	6.3 × 11	25	6.3 × 11	25	8 × 11.5	29	10 × 12.5	28	10 × 16	31	10 × 16	27	10 × 20	29
3.3	3R3	8 × 11.5	36	8 × 11.5	36	10 × 12.5	42	$10 \times 12.5$	34	10 × 16	38	10 × 20	36	12.5 × 20	41
4.7	4R7	8 × 11.5	43	10 × 12.5	50	10 × 12.5	50	10 × 16	45	10 × 20	49	10 × 20	43	12.5 × 20	49
10	100	10 × 12.5	70	10 × 16	80	10 × 20	88	10 × 20	72	12.5 × 20	82	12.5 × 25	72	16 × 25	75
22	220	10 × 20	130	10 × 20	140	12.5 × 25	155	12.5 × 25	120	16 × 25	130	16 × 25	110	16 × 31.5	115
33	330	12.5 × 20	180	12.5 × 25	190	12.5 × 25	190	16 × 25	155	16 × 31.5	160	16 × 31.5	140	•18 × 35.5	145
47	470	12.5 × 25	220	12.5 × 25	220	16 × 25	230	16 × 35.5	190	●18 × 35.5	200	●18 × 35.5	170	20 × 40	175
100	101	16 × 25	330	16 × 31.5	335	•18 × 35.5	340	$\Delta$ 18 $\times$ 40	285	20 × 40	290	22 × 50	350	25 × 50	350
220	221	•18 × 35.5	500	$\Delta$ 18 $\times$ 40	515	20 × 40	525	22 × 50	540	25 × 50	550				
330	331	20 × 40	900	22 × 40	1100	22 × 50	1150		!		!		!	Case size	Rated
470	471	22 × 50	1200	22 × 50	1310	25 × 50	1350							$\phi D \times L (mm)$	ripple

Rated ripple current (mArms ) at 105°C 120Hz