

# Surface Mount Aluminum Electrolytic Capacitors



SHTL Series  
(105°C, 2000 hours)

MERITEK

## FEATURES

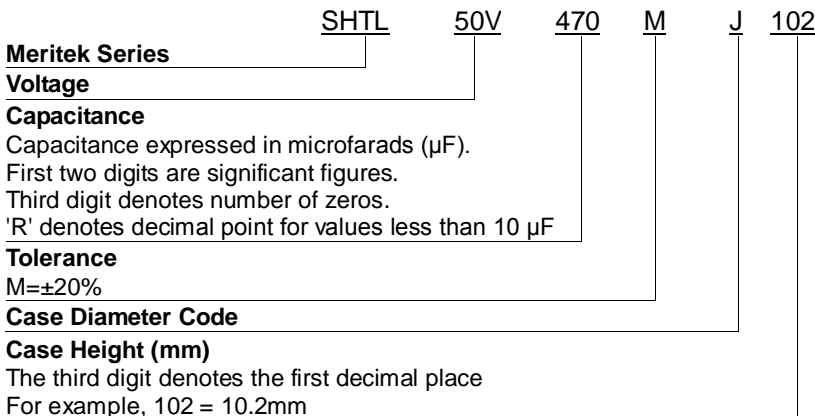
- Load life : 105°C 2000 hours.



## SPECIFICATIONS

Item	Characteristic								
Operation Temperature Range	-55 ~ +105°C								
Rated Working Voltage	4 ~ 50VDC								
Capacitance Tolerance (120Hz 20°C)	±20%(M)								
Leakage Current (20°C)	$I \leq 0.01CV$ or $3 (\mu A)$ *Whichever is greater after 2 minutes I: Leakage Current ( $\mu A$ )      C: Rated Capacitance ( $\mu F$ )      V: Working Voltage (V)								
Surge Voltage (20°C)	W.V.	4	6.3	10	16	25	35	50	
	S.V.	5	8	13	20	32	44	63	
Dissipation Factor ( $\tan \delta$ ) (120Hz 20°C)	W.V.	4	6.3	10	16	25	35	50	
	$\tan \delta$	Φ4~ Φ6.3	0.50	0.30	0.22	0.16	0.14	0.12	0.12
		Φ8~ Φ10	0.50	0.35	0.26	0.20	0.16	0.14	0.12
Low Temperature Stability	Impedance ratio at 120Hz								
	Rated Voltage (V)	4	6.3	10	16	25	35	50	
	-25°C / +20°C	7	4	3	2	2	2	2	
	-40°C / +20°C	15	8	6	4	4	3	3	
Load Life	After 2000 hours application of W.V. and +105°C ripple current value, the capacitor shall meet the following limits. (DC + ripple peak voltage ≤ rate working voltage)								
	Capacitance Change	≤ ±25% of initial value (4WV± 35%)							
	Dissipation Factor	≤ 200% of initial specified value							
	Leakage Current	≤ initial specified value							
Shelf Life	At +105°C, no voltage application after 1000 hours, the capacitor shall meet the limits for load life characteristics. (With voltage treatment)								
Resistance to Soldering Heat	Capacitors placed on a 250°C hot plate for 30 seconds with their electrode terminals facing downward will fulfill the following conditions after being cooled to room temperature.								
	Capacitance Change	≤ ±10% of initial value							
	Dissipation Factor	≤ initial specified value							
	Leakage current	≤ initial specified value							

## PART NUMBERING SYSTEM



Case Diameter Code	Φ D
D	Φ 4.0
E	Φ 5.0
F	Φ 6.3
H	Φ 8.0
J	Φ 10.0

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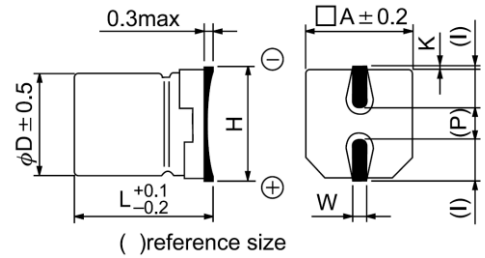


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## DIMENSIONS (mm)

ΦD	L	A	H	I	W	P	K
Φ 4.0	5.8	4.3	5.5MAX	1.8	0.65±0.1	1.0	0.35 <sup>+0.15</sup> <sub>-0.20</sub>
Φ 5.0	5.8	5.3	6.5MAX	2.2	0.65±0.1	1.5	0.35 <sup>+0.15</sup> <sub>-0.20</sub>
Φ 6.3	5.8	6.6	7.8MAX	2.6	0.65±0.1	2.1	0.35 <sup>+0.15</sup> <sub>-0.20</sub>
Φ 8.0	6.2	8.3	9.5MAX	3.4	0.65±0.1	2.2	0.35 <sup>+0.15</sup> <sub>-0.20</sub>
Φ 8.0	10.2	8.3	10.0MAX	3.4	0.90±0.2	3.1	0.70 ± 0.2
Φ 10.0	10.2	10.3	12.0MAX	3.5	0.90±0.2	4.6	0.70 ± 0.2



## CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)  
Max ripple current : mA(rms) 105°C 120Hz

Cap. (μF)	V	4		6.3		10		16		25		35		50	
		DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.
0.10	0R1													4x5.8	3
0.22	R22													4x5.8	4
0.33	R33													4x5.8	5
0.47	R47													4x5.8	6
1.0	010													4x5.8	8
2.2	2R2													4x5.8	12
3.3	3R3													4x5.8	15
4.7	4R7									4x5.8	15	4x5.8	18	5x5.8	20
6.8	6R8									4x5.8	18	5x5.8	22	5x5.8	24
10	100							4x5.8	20	5x5.8	25	5x5.8	26	6.3x5.8	33
22	220	4x5.8	20	4x5.8	24	5x5.8	30	5x5.8	34	6.3x5.8	42	6.3x5.8	45	8x10.2	75
33	330	4x5.8	25	4x5.8	30	5x5.8	37	6.3x5.8	48	6.3x5.8	50	8x6.2	70	8x10.2	90
47	470	4x5.8	30	5x5.8	41	6.3x5.8	50	6.3x5.8	55	8x6.2	75	8x10.2	100	10x10.2	120
100	101	5x5.8	49	6.3x5.8	70	6.3x5.8	75	8x10.2	120	8x10.2	140	10x10.2	170		
150	151	6.3x5.8	70	8x6.2	95	8x6.2	110	8x10.2	150	8x10.2	170				
220	221	6.3x5.8	85	8x10.2	140	8x10.2	160	10x10.2	210	10x10.2	230				
330	331	8x10.2	140	8x10.2	170	8x10.2	200	10x10.2	260						
470	470	8x10.2	170	8x10.2	200	10x10.2	270								

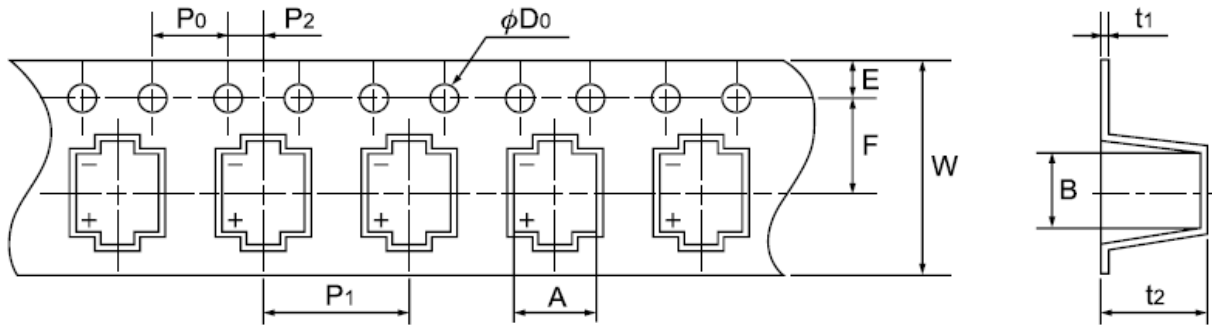
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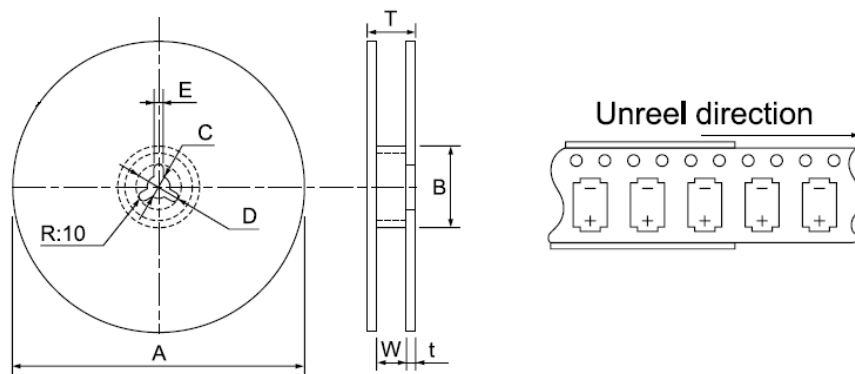
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## TAPING



D x L	W $\pm 0.3$	A $\pm 0.2$	B $\pm 0.2$	$P_0$ $\pm 0.1$	$P_1$ $\pm 0.1$	$P_2$ $\pm 0.1$	F $\pm 0.1$	$\phi D_0$ $\pm 0.1$	$t_1$ $\pm 0.1$	E $\pm 0.1$	$t_2$ $\pm 0.2$
$\phi 4 \times 5.4$	12.0	4.7	4.7	4.0	8.0	2.0	5.5	1.5	0.4	1.75	5.7
$\phi 5 \times 5.4$	12.0	5.7	5.7	4.0	12.0	2.0	5.5	1.5	0.4	1.75	5.7
$\phi 6.3 \times 5.4$	16.0	7.0	7.0	4.0	12.0	2.0	7.5	1.5	0.4	1.75	5.7
$\phi 4 \times 5.8$	12.0	4.7	4.7	4.0	8.0	2.0	5.5	1.5	0.4	1.75	6.3
$\phi 5 \times 5.8$	12.0	5.7	5.7	4.0	12.0	2.0	5.5	1.5	0.4	1.75	6.4
$\phi 6.3 \times 5.8$	16.0	7.0	7.0	4.0	12.0	2.0	7.5	1.5	0.4	1.75	6.4
$\phi 6.3 \times 7.7$	16.0	7.0	7.0	4.0	12.0	2.0	7.5	1.5	0.4	1.75	8.2
$\phi 8 \times 6.2$	16.0	8.7	8.7	4.0	12.0	2.0	7.5	1.5	0.4	1.75	6.8
$\phi 8 \times 10.2$	24.0	8.7	8.7	4.0	16.0	2.0	11.5	1.5	0.4	1.75	11.0
$\phi 10 \times 10.2$	24.0	10.7	10.7	4.0	16.0	2.0	11.5	1.5	0.4	1.75	11.0

## PACKAGE



D x L	A $\pm 2.0$	B MIN	C $\pm 0.5$	D $\pm 0.8$	E $\pm 0.5$	W $\pm 1.0$	T $\pm 1.0$	t $\pm 0.5$
$\phi 4 \phi 5$	380	50	13	21	2.0	14.0	20.0	3.0
$\phi 6.3$	380	50	13	21	2.0	18.0	24.0	3.0
$\phi 8 \times 6.2$	380	50	13	21	2.0	18.0	24.0	3.0
$\phi 8 \times 10.2$	380	50	13	21	2.0	26.0	32.0	3.0
$\phi 10 \times 10.2$	380	50	13	21	2.0	26.0	32.0	3.0

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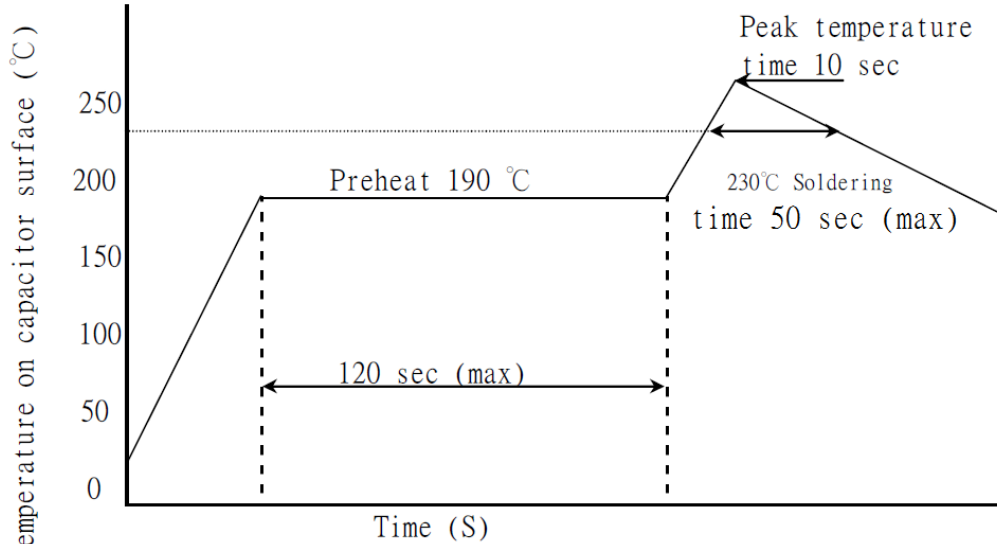


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## PERMISSIBLE REFLOW CONDITION

### AIR REFLOW AND IR REFLOW



Preheat: Within 120sec., 190°C or less.

Soldering Time: Within 50 sec., 230°C

Peak Temperature: Less than 250°C, within 10 sec.

Possible Reflow Cycle: 2 Cycles

The final test values should be as following:

- (A) Capacitance change:  $\leq \pm 10\%$  of initial value
- (B) Dissipation factor:  $\leq$  initial specified value
- (C) Leakage current:  $\leq$  initial specified value
- (D) Visual: No damage