

# Surface Mount Aluminum Electrolytic Capacitors



SHT Series  
(High Temperature)

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## FEATURES

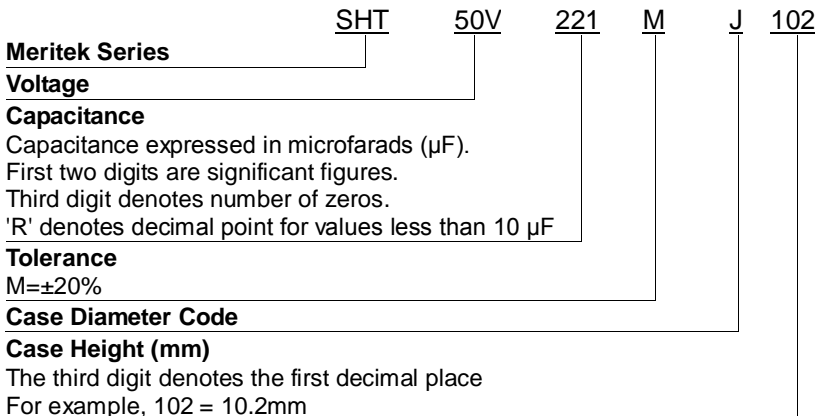
- 105°C 1000 hours
- For high density mounting



## SPECIFICATIONS

Item	Characteristic							
Operation Temperature Range	-55 ~ +105°C							
Rated Working Voltage	6.3 ~ 50VDC							
Capacitance Tolerance (120Hz 20°C)	±20%(M)							
Leakage Current (20°C)	I ≤ 0.01CV or 3 (μA) *Whichever is greater after 2 minutes I: Leakage Current (μA)      C: Rated Capacitance (μF)      V: Working Voltage (V)							
Surge Voltage (20°C)	W.V.	6.3	10	16	25	35	50	
	S.V.	8	13	20	32	44	63	
Dissipation Factor (tan δ) (120Hz 20°C)	W.V.	6.3	10	16	25	35	50	
	tan δ	Φ4~Φ6.3	0.30	0.22	0.16	0.14	0.12	0.12
		Φ8~Φ10	0.35	0.26	0.20	0.16	0.14	0.12
Low Temperature Stability	Impedance ratio at 120Hz							
	Rated Voltage (V)	6.3	10	16	25	35	50	
	-25°C / +20°C	4	3	2	2	2	2	
	-40°C / +20°C	8	6	4	4	3	3	
Load Life	After 1000 hours application of W.V. and +105°C ripple current value, the capacitor shall meet the following limits. (DC + ripple peak voltage ≤ rated working voltage)							
	Capacitance Change	≤ ±30% of initial value for 6.3 W.V., ≤ ±25% of initial value for 10~50 W.V.						
	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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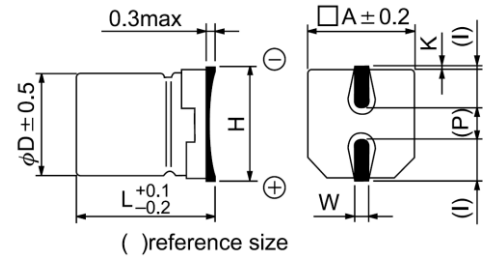


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## DIMENSIONS (mm)

ΦD	L	A	H	I	W	P	K
Φ 4.0	5.4	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	5.4	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	5.4	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. (uF)	V	6.3		10		16		25		35		50	
		Item	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL	R.C.	DxL
0.1	0R1											4x5.4	2
0.22	R22											4x5.4	4
0.33	R33											4x5.4	4
0.47	R47											4x5.4	5
1	010											4x5.4	8
2.2	2R2											4x5.4	11
3.3	3R3											4x5.4	14
4.7	4R7							4x5.4	14	4x5.4	15	5x5.4	19
10	100					4x5.4	19	5x5.4	23	5x5.4	25	6.3x5.4	31
22	220	4x5.4	23	5x5.4	29	5x5.4	32	6.3x5.4	39	6.3x5.4	42	8x6.2	60
33	330	5x5.4	32	5x5.4	35	6.3x5.4	45	6.3x5.4	48	6.3x5.4	50	8x10.2	90
										8x6.2	70		
47	470	5x5.4	38	6.3x5.4	48	6.3x5.4	55	6.3x5.4	60	8x10.2	100	8x10.2	110
								8x6.2	75			10x10.2	120
100	101	6.3x5.4	65	6.3x5.4	70	6.3x5.4	80	8x10.2	140	8x10.2	150	8x10.2	160
				8x6.2	90	8x10.2	120			10x10.2	170	10x10.2	180
220	221	6.3x5.4	95	8x10.2	160	8x10.2	180	8x10.2	200	8x10.2	220	10x10.2	270
						10x10.2	210	10x10.2	230	10x10.2	250		
330	331	8x10.2	170			8x10.2	220	8x10.2	250	10x10.2	300		
						10x10.2	260	10x10.2	290				
470	471			8x10.2	230	8x10.2	270	10x10.2	340				
				10x10.2	270	10x10.2	300						
1000	102	8x10.2	290										
		10x10.2	340										
1500	152	10x10.2	410										

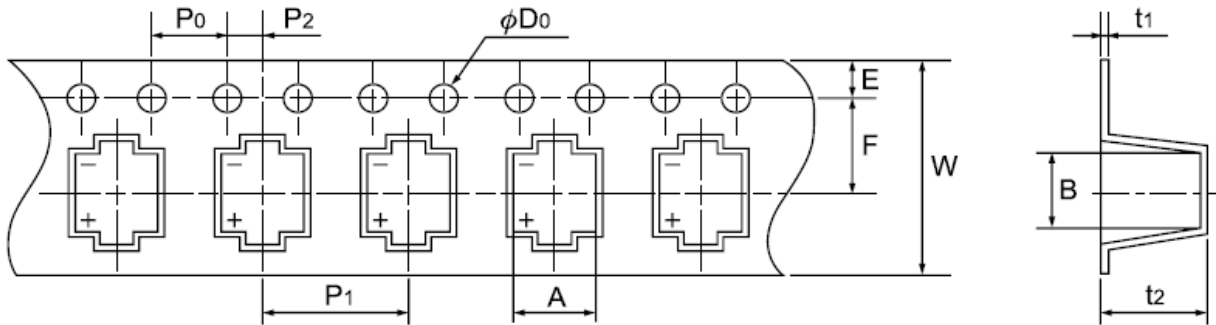
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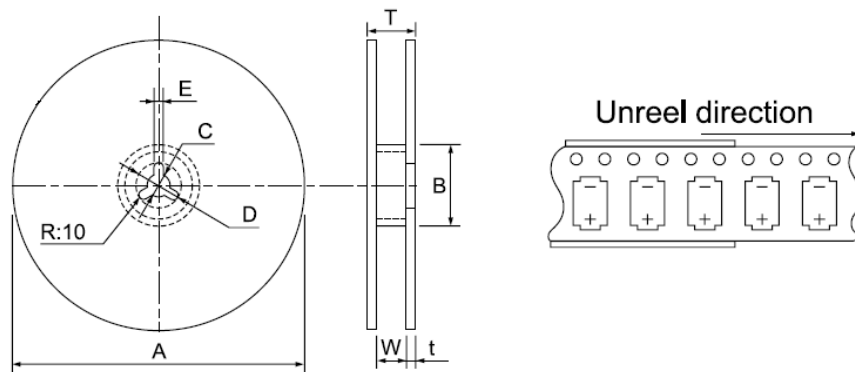
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## TAPING



D x L	W ±0.3	A ±0.2	B ±0.2	P <sub>0</sub> ±0.1	P <sub>1</sub> ±0.1	P <sub>2</sub> ±0.1	F ±0.1	ØD <sub>0</sub> ±0.1	t <sub>1</sub> ±0.1	E ±0.1	t <sub>2</sub> ±0.2
Ø4x5.4	12.0	4.7	4.7	4.0	8.0	2.0	5.5	1.5	0.4	1.75	5.7
Ø5x5.4	12.0	5.7	5.7	4.0	12.0	2.0	5.5	1.5	0.4	1.75	5.7
Ø6.3x5.4	16.0	7.0	7.0	4.0	12.0	2.0	7.5	1.5	0.4	1.75	5.7
Ø4x5.8	12.0	4.7	4.7	4.0	8.0	2.0	5.5	1.5	0.4	1.75	6.3
Ø5x5.8	12.0	5.7	5.7	4.0	12.0	2.0	5.5	1.5	0.4	1.75	6.4
Ø6.3x5.8	16.0	7.0	7.0	4.0	12.0	2.0	7.5	1.5	0.4	1.75	6.4
Ø6.3x7.7	16.0	7.0	7.0	4.0	12.0	2.0	7.5	1.5	0.4	1.75	8.2
Ø8x6.2	16.0	8.7	8.7	4.0	12.0	2.0	7.5	1.5	0.4	1.75	6.8
Ø8x10.2	24.0	8.7	8.7	4.0	16.0	2.0	11.5	1.5	0.4	1.75	11.0
Ø10x10.2	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 ±2.0	B MIN	C ±0.5	D ±0.8	E ±0.5	W ±1.0	T ±1.0	t ±0.5
Ø4 Ø5	380	50	13	21	2.0	14.0	20.0	3.0
Ø6.3	380	50	13	21	2.0	18.0	24.0	3.0
Ø8x6.2	380	50	13	21	2.0	18.0	24.0	3.0
Ø8x10.2	380	50	13	21	2.0	26.0	32.0	3.0
Ø10x10.2	380	50	13	21	2.0	26.0	32.0	3.0

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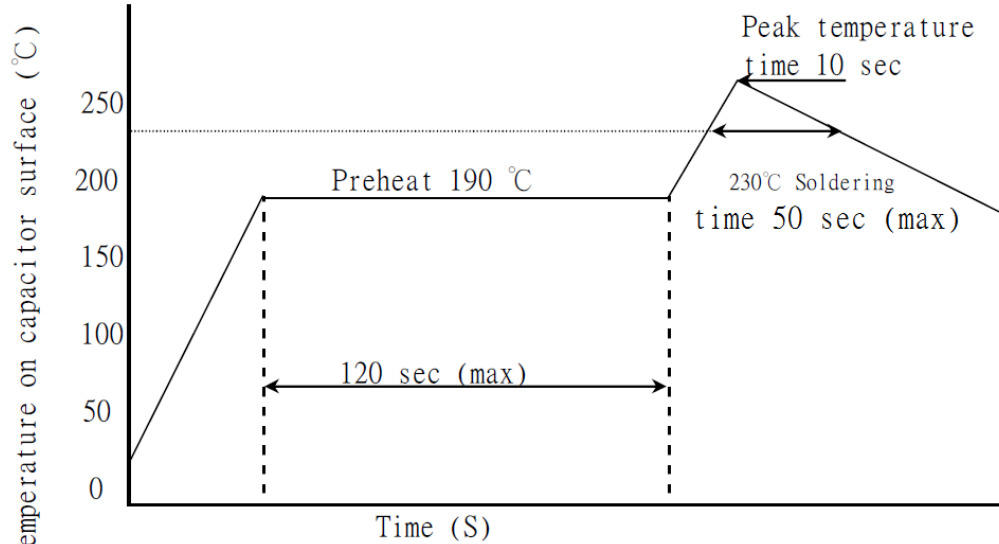


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## PERMISSIBLE REFLOW CONDITION

### 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