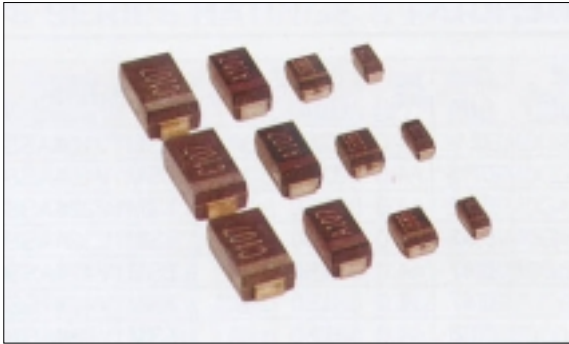
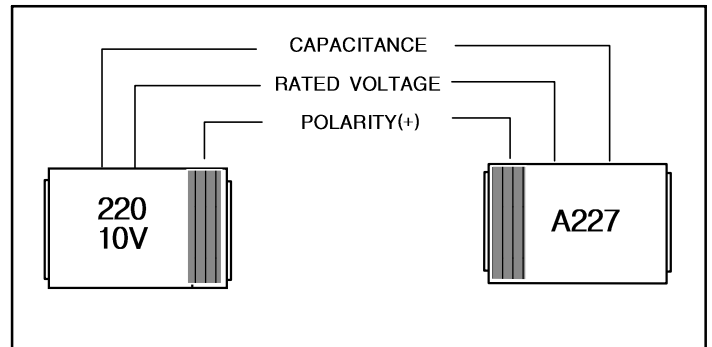
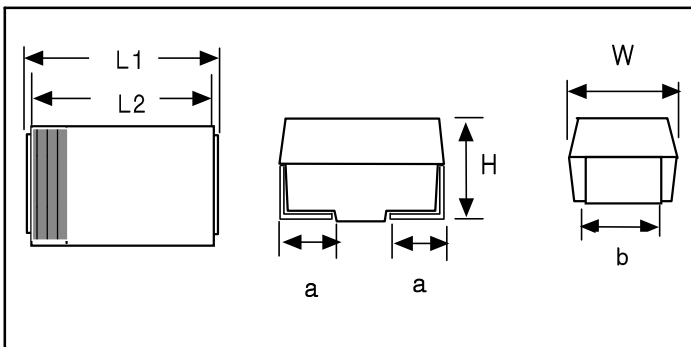


FEATURES



- Capacitance : 1.0 μ F to 680 μ F
- 100% Surge current test on each sizes (A,B2,C,D)
- Capacitance tolerance : $\pm 10\%$ (K), $\pm 20\%$ (M)
- Standard Range Values
- Voltage : 4VDC to 35VDC

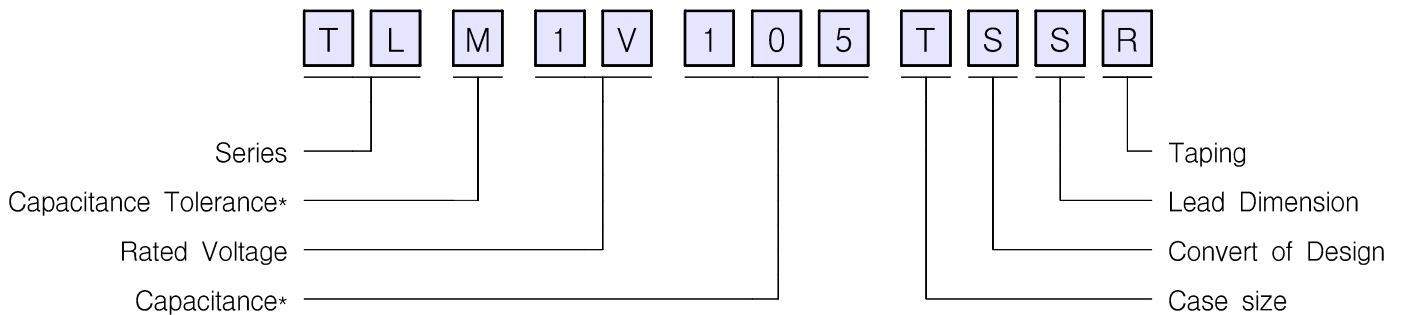
CASE DIMENSIONS AND MARKINGS



(unit : millimeters)

Size	Code	L1	L2	W	H	a	b
A	A	3.2 \pm 0.2 -0.1	2.9 \pm 0.1	1.6 \pm 0.2	1.6 \pm 0.2	0.8 \pm 0.3	1.2 \pm 0.2
B2	T	3.5 \pm 0.3	3.2 \pm 0.1	2.8 \pm 0.3	1.9 \pm 0.3	0.8 \pm 0.3	2.2 \pm 0.2
C	C	6.0 \pm 0.3	5.8 \pm 0.1	3.2 \pm 0.3	2.5 \pm 0.3	1.3 \pm 0.3	2.2 \pm 0.2
D	D	7.3 \pm 0.3	7.1 \pm 0.1	4.3 \pm 0.3	2.8 \pm 0.3	1.3 \pm 0.3	2.4 \pm 0.2

ORDERING INFORMATION



Capacitance* : First two digits represent significant figures.
Third digit specifies number of zeros to follow.

Capacitance Tolerance* : M - $\pm 20\%$
K - $\pm 10\%$

SPECIFICATIONS

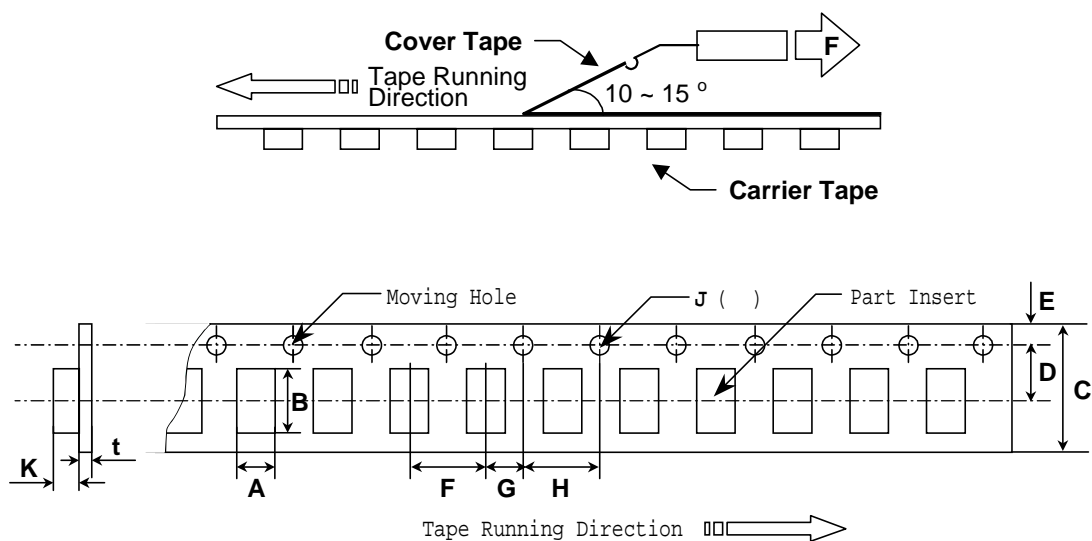
Capacitance	Range	1.0 μ F to 680 μ F							
	Tolerance	\pm 20%(M), \pm 10%(K)							
Dissipation Factor (tan δ)	C \leq 1.0 μ F	D.F \leq 4.0%							
	1.5 μ F \leq C \leq 6.8 μ F	D.F \leq 6.0%							
	10 μ F \leq C \leq 68 μ F	D.F \leq 8.0%							
	C \geq 100 μ F	D.F \leq 10.0%							
Leakage Current		between 0.01CV and 0.5 μ A, whichever is larger							
Rated Voltage (V _R)		4.0	6.3	10.0	16.0	20.0	25.0	35.0	50.0
Operating Voltage (V _O)	T \leq 85 $^{\circ}$ C	4.0	6.3	10.0	16.0	20.0	25.0	35.0	50.0
	85 < T \leq 125 $^{\circ}$ C	2.5	4.0	6.3	10.0	13.0	16.0	22.0	32.0
Surge Voltage (V _S)	T \leq 85 $^{\circ}$ C	5.2	8.0	13.0	20.0	25.0	32.0	44.0	63.0
	85 < T \leq 125 $^{\circ}$ C	3.2	5.0	8.0	13.0	16.0	20.0	28.0	40.0
Operating Temperature		-55 $^{\circ}$ C to 125 $^{\circ}$ C							

CAPACITANCE AND VOLTAGE RANGE

W.V		4	6.3	10	16	20	25	35
cap(μ F)								
1.0	105							
1.5	155							
2.2	225						(A)	
3.3	335							
4.7	475					(A)		
6.8	685				A			
10	106				A			C
15	156			A				
22	226		A	A			C	D
33	336	A	A	B2		C	D	
47	476	(A)	(A)	B2	C			
68	686	B2	B2			(D)		
100	107	B2	B2	C	D			
150	157	C	(C)					
220	227	C	(C)	D				
330	337	D	D	(D)				
470	477	(D)	(D)					
680	687	(D)						() : Under Development

TAPE AND REEL DIMENSIONS

- Tape : Semitransparent emboss tape
- Cover tape : Attached for heating press polyester or adhesive cover tape
- The tension of removing cover tape
 - Heating press : $F = 50 \pm 20g$
 - Adhesive : $F = 30 \pm 15g$



- TL series Carrier tape dimensions

Classification	Size A	Size B2	Size C	Size D	Size E
A	1.90 ± 0.1	3.2 ± 0.1	3.69 ± 0.1	4.80 ± 0.1	4.80 ± 0.1
B	3.50 ± 0.1	3.83 ± 0.1	6.49 ± 0.1	7.79 ± 0.1	7.79 ± 0.1
C	8.0 ± 0.3	8.0 ± 0.3	12.0 ± 0.3	12.0 ± 0.3	12.0 ± 0.3
D	3.5 ± 0.05	3.5 ± 0.05	5.50 ± 0.05	5.50 ± 0.05	5.70 ± 0.05
E	1.75 ± 0.1	1.75 ± 0.1	1.75 ± 0.1	1.75 ± 0.1	1.75 ± 0.1
F	4.0 ± 0.1	4.0 ± 0.1	8.0 ± 0.1	8.0 ± 0.1	8.0 ± 0.1
G	2.0 ± 0.05				
H	4.0 ± 0.1				
J	$1.5 + 0.1, -0.0$				
t	0.23 ± 0.02	0.23 ± 0.02	0.28 ± 0.02	0.28 ± 0.02	0.6 max
K	1.92 ± 0.1	2.17 ± 0.1	2.75 ± 0.2	3.0 ± 0.2	4.7 ± 0.2

TL SERIES RATINGS & PART NUMBER REFERENCE

Rated Voltage(V)	Cap (μ F)	tan δ (%)	D.C.L (μ A)	Size	Part No.
4	33	8.0	1.32	A	TLM0G336ASSR
4	47	8.0	1.88	A	TLM0G476ASSR
4	68	8.0	2.72	B2	TLM0G686TSSR
4	100	10.0	4.00	B2	TLM0G107TSSR
4	150	10.0	6.00	C	TLM0G157CSSL
4	220	10.0	8.80	C	TLM0G227CSSL
4	330	10.0	13.20	D	TLM0G337DSSL
4	470	10.0	18.80	D	TLM0G477DSSL
4	680	10.0	27.20	D	TLM0G687DSSL
6.3	22	8.0	1.39	A	TLM0J226ASSR
6.3	33	8.0	2.08	A	TLM0J336ASSR
6.3	47	8.0	2.96	A	TLM0J476ASSR
6.3	68	8.0	4.28	B2	TLM0J686TSSR
6.3	100	10.0	6.30	B2	TLM0J107TSSR
6.3	150	10.0	9.45	C	TLM0J157CSSL
6.3	220	10.0	13.86	C	TLM0J227DSSL
6.3	330	10.0	20.79	D	TLM0J337DSSL
6.3	470	10.0	29.61	(D)	TLM0J477ESSR
10	15	8.0	1.50	A	TLM1A156ASSR
10	22	8.0	2.20	A	TLM1A226ASSR
10	33	8.0	3.30	B2	TLM1A336TSSR
10	47	8.0	4.70	B2	TLM1A476TSSR
10	100	10.0	10.00	C	TLM1A107CSSL
10	220	10.0	22.00	D	TLM1A227DSSL
16	6.8	6.0	1.09	A	TLM1C685ASSR
16	10	8.0	1.60	A	TLM1C106ASSR
16	47	8.0	7.52	C	TLM1C476CSSL
16	100	10.0	16.00	D	TLM1C107DSSL
20	6.8	6.0	1.36	A	TLM1D685ASSR
20	33	8.0	6.60	C	TLM1D336CSSL
20	68	8.0	13.60	D	TLM1D686DSSL
25	2.2	6.0	0.55	A	TLM1E225ASSR
25	22	8.0	5.50	C	TLM1E226CSSL
25	33	8.0	8.25	D	TLM1E336DSSL
35	10	8.0	3.50	C	TLM1V106CSSL
35	22	8.0	7.70	D	TLM1V226DSSL