

TL SERIES

- High Ripple
- High Reliability
- Ultra Long Life
- RoHS

- All-welded construction ensures reliable electrical contact
- High reliability and high ripple current capability.
- Endurance with ripple current: 20000 hours at 85°C.
- Applications: Train, Mechanical equipment and Large control equipment



◆ SPECIFICATIONS

Items	Characteristics								
Operating Temperature Range	-40~+85°C								
Rated Working Voltage Range	350~450V								
Capacitance Range	1000~12000μ F								
Capacitance Tolerance	±20% (20°C, 120Hz)								
Dissipation Factor (MAX) 20°C, 120Hz	<table border="1" style="display: inline-table;"> <tr> <td>U_R(V)</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>tanδ</td> <td colspan="3">0.15</td> </tr> </table>	U _R (V)	350	400	450	tanδ	0.15		
U _R (V)	350	400	450						
tanδ	0.15								
Leakage Current (MAX)	I=0.01C _R U _R or 5mA whichever is minimum. (at 20°C, After 5 minutes application of rated voltage) I=Leakage Current (μA) U _R =Rated Voltage (V) C _R =Rated Capacitance (μF)								

	Useful Life		Load Life	Endurance Test	Shelf Life
Life Time	25000h	>250000h	20000h	20000h	1000h
Leakage Current	≤ Specified value		≤ Specified value	≤ Specified value	≤ Specified value
tanδ Change	≤300% of specified value		≤300% of specified value	≤ 175% of specified value	≤ 150% of specified value
Capacitance Change	Within ±30% of initial value		Within ±30% of initial value	Within ±15% of initial value	Within ±15% of initial value
Condition Applied Voltage Applied Ripple Current Applied Temperature Failure Rate Level	U _R I _R 85°C ≤1% Failure rate	U _R 1.2×I _R 40°C ≤1% Failure rate	U _R I _R 85°C 0%	U _R I _R =0 85°C 0%	U _R =0 I _R =0 85°C 0% Back up to 20 °C and placed more than 24 hours. U _R to be applied for 60 min before measurement.

- ◆ Dimensions
- Terminal Code

L-Type: Small terminal M5 thread
S-Type: Large terminal M6 thread

Ring Clip: T (Φ35 Standard) Ring Clip: S (Φ51~Φ89 Standard)

Ring Clip Dimensions:

ΦD	A	B	a	b
51	73.0	63.5	4.5	7
64	85.1	76.2	4.5	7
76	98.4	88.9	4.5	7
89	111.1	101.6	4.5	7

For detailed dimension & tolerance, please refer to P90

- Please consult to us for the terminal type not displayed in content.

◆ PART NUMBER SYSTEM

● Example TL350V10000μF Φ89×157 ±20%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
T	L	H	1	0	3	M	8	9	1	5	7	S	V	A

special requirement
 Sleeve Code
 Lead Form Code
 (e.g.157→157) The height of the code (mm)
 (e.g.76→76, 89→89) Diameter code (mm)
 (e.g.±20%→M) Capacitance Tolerance code
 (e.g.8200→822, 12000→123) Capacitance Code (μF)
 (e.g.350V→H, 400V→G) Rated Voltage Code (V)
 (e.g.TL→TL) Series Code

◆ Rated Ripple Current Multiplies

● Frequency coefficient

Frequency (Hz)	50(60)	100(120)	300	1k	≥10k
Coefficient	0.80	1.00	1.10	1.30	1.40

● Temperature coefficient

Temperature (°C)	+40	+60	+85
Coefficient	1.89	1.67	1.00

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◆ Standard Ratings

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C/120Hz	Ripple Current 85°C/120Hz (Arms)	Catalog Part Number
350 (400)	1000	51×80	0.15	3.9	TLH102M51080□VA
	1200	51×80	0.15	4.2	TLH122M51080□VA
	1500	51×95	0.15	5.2	TLH152M51095□VA
	1800	51×95	0.15	5.7	TLH182M51095□VA
	2200	51×130	0.15	7.1	TLH222M51130□VA
	2700	64×95	0.15	7.7	TLH272M64095□VA
	3300	64×115	0.15	11.1	TLH332M64115□VA
	3900	64×130	0.15	12.8	TLH392M64130□VA
	4700	76×115	0.15	14.7	TLH472M76115□VA
	5600	76×130	0.15	16.9	TLH562M76130□VA
	6800	76×155	0.15	20.2	TLH682M76155□VA
	8200	89×157	0.15	23.1	TLH822M89157□VA
10000	89×157	0.15	26.6	TLH103M89157□VA	
12000	89×195	0.15	32.0	TLH123M89195□VA	
400 (450)	1000	51×80	0.15	4.0	TLG102M51080□VA
	1200	51×95	0.15	4.6	TLG122M51095□VA
	1500	51×115	0.15	5.6	TLG152M51115□VA
	1800	51×130	0.15	6.4	TLG182M51130□VA
	2200	64×95	0.15	7.3	TLG222M64095□VA
	2700	64×115	0.15	10.1	TLG272M64115□VA

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C/120Hz	Ripple Current 85°C/120Hz (Arms)	Catalog Part Number
400 (450)	3300	64×130	0.15	11.7	TLG332M64130□VA
	3900	76×115	0.15	14.7	TLG392M76115□VA
	4700	76×130	0.15	15.5	TLG472M76130□VA
	5600	76×155	0.15	18.3	TLG562M76155□VA
	6800	89×157	0.15	21.0	TLG682M89157□VA
	8200	89×157	0.15	24.1	TLG822M89157□VA
	10000	89×195	0.15	29.1	TLG103M89195□VA
	1000	51×95	0.15	4.2	TLE102M51095□VA
450 (500)	1200	51×115	0.15	5.0	TLE122M51115□VA
	1500	51×130	0.15	5.9	TLE152M51130□VA
	1800	64×95	0.15	6.5	TLE182M64095□VA
	2200	64×115	0.15	9.1	TLE222M64115□VA
	2700	64×130	0.15	10.6	TLE272M64130□VA
	3300	76×130	0.15	13.0	TLE332M76130□VA
	3900	76×155	0.15	14.4	TLE392M76155□VA
	4700	76×155	0.15	16.7	TLE472M76155□VA
	5600	89×157	0.15	19.9	TLE562M89157□VA
	6800	89×195	0.15	23.0	TLE682M89195□VA
	8200	89×195	0.15	26.4	TLE822M89195□VA

*□Enter the appropriate terminal code

*Please ask for advice for other sizes.

*Aluminum electrolytic capacitor will emit heat when ripple current is applied, the performance will deteriorate when temp. rises. the useful life will be half of original life when temp rises every 5°C. Please reduce the ripple current when using capacitor.