

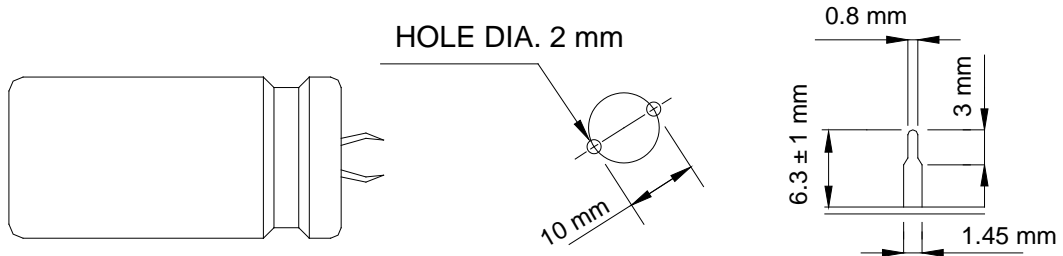
TR SERIES

Withstand high ripple current. Suitable for filter of consumer electronic products, Such as TV sets, power supplies and high power stereos, etc./Large capacitance

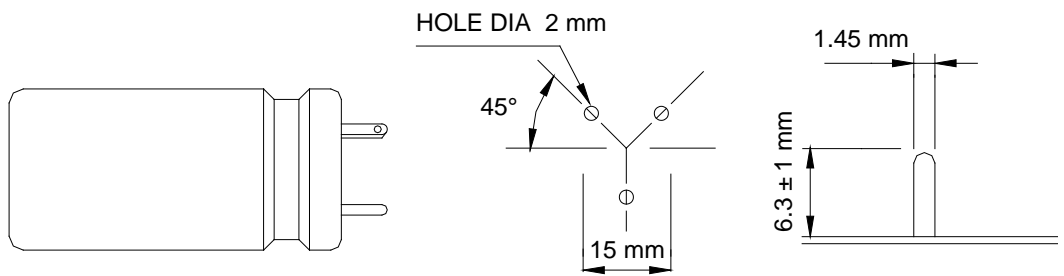
SPECIFICATION :

ITEMS	CHARACTERISTIC									
Rated Voltage Range(vdc)	-40 °C ~ +85°C					-25°C ~ +85 °C				
Operating TemperatureRange	6.3v ~ 100v DC					160v ~ 500v DC				
Capacitance Tolerance	±20% (M) 120Hz 20°C									
Leakage Current	I = 0.03CV + 15 (uA) Whichever is smaller after 5 minutes where I = Leakage Current , C = Rated Capacitance , V = rated DC working voltage									
Dissipation Factor (tanδ) 120Hz, 20°C	WV(vdc)	6.3	10	16	25	35	50	63 to 100	160 to 250	300 to 500
	DF(tan δ)	0.60	0.50	0.45	0.35	0.30	0.25	0.20	0.15	0.25
Low Characteristics	Impedance ratio at 120Hz									
	Rated Voltage (v)	6.3~16		25	35	50~63		80~100	160~400	450~500
	-25°C / +20°C	4		3	3	2		2	4	8
		-40°C / +20°C		15	10	8	6		5	--
Load Life	*The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2000 hrs at 85°C.									
	Test Time	2000 Hrs								
	Capacitance Change	≤±25% of initial value								
	Dissipation Factor	Less than 200% of specified value								
	Leakage Current	Within specified value								
Shelf Life	* The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hrs at 85°C without voltage applied.									
	Test Time	500Hrs								
	Capacitance Change	≤±25%								
	Dissipation Factor	Less than 200% of specified value								
	Leakage Current	Less than 200% of specified value								

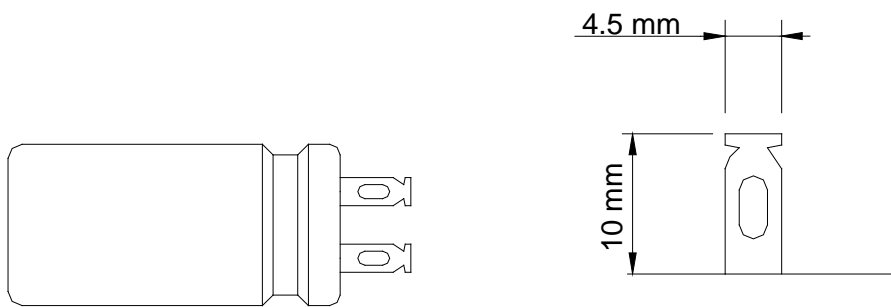
STANDARD MOUNTING DIMENSIONS



OPTION PS
TWO TERMINAL SNAP-IN TYPE PCB HOLE POSITION LUG DIMENSIONS



OPTION PC3
THREE TERMINAL PC TYPE PCB HOLE POSITION PIN DIMENSIONS



OPTION SL
SOLDER LUG TYPE LUG DIMENSIONS

OTHER TYPES AVAILABLE UPON REQUEST

RICHEY ALUMINUM ELECTROLYTIC CAPACITORS TR series

Standard Products Table

WV(vdc)	μ F	ψ DxL(mm)	Ripple Current Arms 85 °C 120Hz	WV(vdc)	μ F	ψ DxL(mm)	Ripple Current Arms 85°C, 120Hz
6.3v	18000	25X25	2.7	16v	22000	35X25	4.1
	22000	25X25	3.0		27000	25X45	4.7
	27000	25X30	3.5		27000	30X35	4.8
	27000	30X25	3.5		33000	30X40	5.3
	33000	25X35	4.0		33000	35X30	5.1
	33000	30X25	3.9		39000	30X45	6.0
	39000	25X40	4.5		39000	35X35	5.9
	39000	30X30	4.4		47000	30X50	6.7
	39000	35X25	4.5		47000	35X40	6.7
	47000	25X45	5.0		56000	35X45	7.6
	47000	30X35	5.0	68000	35X50	8.6	
	47000	35X30	5.0	25v	6800	25X25	2.5
	56000	25X50	5.7		8200	25X25	2.8
	56000	30X45	5.7		10000	25X30	3.2
	56000	35X30	5.7		10000	30X25	3.2
	68000	30X45	6.4		12000	25X35	3.4
	68000	35X40	6.4		12000	30X30	3.8
	82000	30X50	7.3		15000	25X40	3.9
	82000	35X45	7.2		15000	30X30	4.0
	100000	35X50	8.3		15000	35X25	3.9
10v	12000	22X25	2.3		18000	25X50	4.4
	15000	22X30	2.7	18000	30X35	4.4	
	15000	25X25	2.7	18000	35X30	4.6	
	18000	22X35	3.1	22000	25X50	5.0	
	18000	25X30	3.0	22000	30X45	5.2	

	22000	22X40	3.5		22000	35X35	5.1
	22000	25X35	3.4		27000	30X50	5.9
	22000	30X25	3.5		27000	35X45	5.9
	27000	30X35	3.7		33000	35X45	6.7
	33000	25X40	4.5		39000	35X50	7.5
	33000	30X30	4.1		4700	25X25	2.4
	33000	35X25	4.1		5600	25X30	2.6
	39000	25X45	5.0		6800	23X35	2.7
	39000	30X35	5.0		8200	25X40	3.1
	47000	25X50	5.7		8200	30X30	3.1
	47000	30X40	5.7		8200	35X25	2.7
	47000	35X30	5.2		10000	22X50	3.5
	56000	30X45	6.4		10000	25X45	3.5
	56000	35X35	6.3		10000	30X35	3.4
	68000	30X50	7.2		10000	35X30	3.0
	68000	35X40	7.2		12000	25X50	3.8
	82000	35X50	8.4		12000	30X40	4.0
	16v	10000	25X25		2.7	35v	12000
12000		25X30	2.9	15000	25X50		4.5
15000		22X40	3.2	15000	30X45		4.5
15000		25X30	3.4	15000	35X35		5.0
15000		30X25	2.6	18000	30X50		4.7
18000		25X35	3.9	18000	35X40		5.5
22000		22X50	4.3	22000	30X50		5.3
22000		25X40	4.2	22000	35X45		6.0
22000		30X30	4.2	27000	35X50		6.8

RICHEY ALUMINUM ELECTROLYTIC CAPACITORS TR series

Standard Products Table

WV(vdc)	μF	ψDxL(mm)	Ripple Current Arms 85°C,120Hz	WV(vdc)	μF	ψDxL(mm)	Ripple Current Arms 85°C,120Hz
50v	3300	25X25	2.3	80v	3900	35X30	3.5
	3900	25X30	2.6		4700	25X50	4.0
	3900	30X25	2.5		4700	30X45	4.0
	4700	25X35	3.0		4700	35X35	4.0
	4700	30X30	2.8		5600	30X50	4.5
	5600	25X40	3.3		5600	35X40	4.5
	5600	30X30	3.3		6800	30X60	5.1
	5600	35X25	3.4		6800	35X50	5.1
	6800	25X45	3.8		8200	35X45	5.8
	6800	30X35	3.8		10000	35X50	6.6
	6800	35X30	3.8	100v	1200	25X30	2.1
	8200	25X50	4.3		1500	25X35	2.4
	8200	30X40	4.3		1500	30X25	2.4
	8200	35X30	4.4		1800	25X40	2.7
	10000	30X45	4.9		1800	30X30	2.7
	10000	35X35	4.9		2200	25X45	3.1
	12000	30X50	5.6		2200	30X35	3.0
	12000	35X40	5.5		2200	35X30	3.1
	15000	35X50	6.4		2700	25X50	3.5
	18000	35X60	6.7		2700	30X40	3.5
63v	2200	25X25	2.3	2700	35X40	3.7	
	2700	25X30	2.4	3300	25X50	4.0	
	3300	25X35	2.6	3300	30X45	4.0	
	3300	30X25	2.7	3300	35X35	4.0	
	3900	25X40	2.9	3900	30X50	4.5	
	3900	30X30	3.0	3900	35X40	4.4	
	3900	35X25	3.0	4700	30X60	5.1	
	4700	25X45	3.3	4700	35X50	5.1	

	4700	30X35	3.3	160v	5600	35X50	5.7
	4700	35X30	3.3		6800	35X60	6.5
	5600	25X45	3.7		470	25X30	1.8
	5600	30X35	3.7		560	25X30	2.1
	5600	35X30	3.7		680	25X35	2.3
	6800	25X50	4.2		680	30X30	2.3
	6800	30X40	4.2		820	25X40	2.6
	6800	35X35	4.1		820	30X30	2.6
	8200	30X50	4.8		1000	25X45	3.0
	8200	35X40	4.7		1000	30X35	2.9
	10000	30X50	5.4		1000	35X30	3.1
	10000	35X45	5.4		1200	25X50	3.4
	12000	35X50	6.1		1200	30X40	3.4
	80v	1800	25X30		2.2	1200	35X35
2200		25X35	2.4	1500	25X50	3.9	
2200		30X25	2.4	1500	30X45	3.9	
2700		25X40	2.8	1500	35X40	3.9	
2700		30X30	2.7	1800	30X50	4.3	
3300		25X45	3.2	1800	35X45	4.2	
3300		30X35	3.1	2200	30X60	4.9	
3300		35X30	3.2	2200	35X50	4.9	
3900		25X50	3.5	2700	35X50	5.5	
3900		30X40	3.5	200v	330	25X25	1.4

RICHEY ALUMINUM ELECTROLYTIC CAPACITORS TR series

Standard Products Table

WV(vdc)	μF	ψDxL(mm)	Ripple Current Arms 85°C,120Hz	WV(vdc)	μF	ψDxL(mm)	Ripple Current Arms 85°C,120Hz
200v	390	25X30	1.7	300v	560	25X60	2.4
	470	25X30	1.9		560	30X50	2.6
	560	25X35	2.1		560	35X40	2.6
	560	30X30	2.1		680	30X50	2.8
	680	25X40	2.4		680	35X45	3.0
	680	30X35	2.4		820	30X50	3.2
	820	25X50	2.7		820	35X50	3.4
	820	30X40	2.8		1000	35X60	3.5
	820	35X30	2.8		350v	150	25X30
	1000	25X50	3.2	180		25X30	1.3
	1000	30X45	3.1	220		25X35	1.5
	1000	35X35	3.2	220		30X30	1.5
	1200	25X60	3.6	270		25X45	1.7
	1200	30X50	3.6	270		30X35	1.8
	1200	35X40	3.5	330		25X50	1.9
	1500	30X60	4.1	330		30X35	2.0
	1500	35X50	4.0	330		35X30	1.8
	1800	35X50	4.6	390		25X50	2.1
2200	35X60	5.2	390	30X40	2.2		
250v	220	25X25	1.2	390	35X35	2.3	
	330	25X30	1.6	470	25X50	2.5	
	390	25X35	1.8	470	30X45	2.5	
	390	30X30	1.8	470	35X40	2.5	
	470	25X40	2.1	560	30X50	2.7	
	470	30X30	2.0	560	35X45	2.7	
	560	25X45	2.3	680	35X50	3.1	
	560	30X35	2.3	400v	100	25X25	0.8
	680	25X45	2.6		120	25X35	1.1

	680	30X40	2.7		150	25X30	1.2
	680	35X30	2.5		150	30X25	1.2
	820	25X50	3.0		180	25X35	1.4
	820	30X45	2.9		180	30X30	1.5
	820	35X35	2.9		220	25X40	1.6
	1000	30X45	3.5		220	30X35	1.6
	1000	35X40	3.4		220	35X30	1.4
	1200	30X50	3.9		270	25X50	1.7
	1200	35X45	3.8		270	30X40	1.8
	1500	35X50	4.3		270	35X30	1.6
	1800	35X60	4.5		330	25X50	2.0
300v	180	25X30	1.3	330	30X45	2.0	
	220	25X35	1.4	330	35X30	2.0	
	270	25X40	1.7	390	25X60	2.1	
	270	30X30	1.5	390	30X50	2.2	
	330	25X45	1.9	390	35X35	2.2	
	330	30X35	1.9	470	30X50	2.5	
	390	25X50	2.1	470	35X45	2.5	
	390	30X40	2.1	560	30X60	2.8	
	390	35X30	1.9	560	35X50	2.5	
	470	25X45	2.3	680	35X60	3.1	
	470	30X45	2.3	820	40X50	3.3	
	470	35X35	2.4	1000	40X60	3.6	

RICHEY ALUMINUM ELECTROLYTIC CAPACITORS TR series

Standard Products Table

WV(vdc)	μF	ψDxL(mm)	Ripple Current Arms 85°C,120Hz
450v	100	25X30	0.9
	120	25X35	1.0
	120	30X30	1.1
	150	25X40	1.2
	150	30X30	1.2
	180	25X45	1.4
	180	30X35	1.4
	180	35X25	1.3
	220	25X50	1.5
	220	30X40	1.6
	220	35X30	1.6
	270	25X50	1.7
	270	30X45	1.8
	270	35X35	1.9
	330	25X60	2.1
	330	30X50	2.1
	330	35X40	2.1
	390	30X50	2.3
	390	35X45	2.3
	470	30X60	2.6
470	35X50	2.6	
560	35X60	2.8	
680	40X60	3,1	
820	40X70	3.3	
1000	40X70	3.5	
500v	100	30X30	0.9
	120	30X30	1.0
	120	35X25	1.0

	150	30X35	1.2
	180	30X40	1.4
	180	35X30	1.3
	220	30X45	1.6
	220	35X35	1.5
	270	30X50	1.8
	270	35X40	1.7
	330	35X45	2.0
	390	35X50	2.2
	470	35X60	2.3
	560	40X60	2.4
	680	40X70	2.8

Capacitance 120Hz 20°C (uf)	W.V (V.DC) V	Series	DF 120Hz 20°C tan δ	ESR. 120Hz 20°C mΩ	Ripple Current 120Hz 85°C (mA)	# Of Solder Lugs
47	350	TR	0.15	3.54	240	2
100	350	TR	0.15	1.67	430	2
220	350	TR	0.15	1.29	880	2
330	350	TR	0.15	0.94	1100	2
470	350	TR	0.15	0.68	1500	2
22	450	TR	0.15	7.58	210	2
33	450	TR	0.15	5.05	230	2
47	450	TR	0.15	3.56	280	2
100	450	TR	0.15	1.96	550	2
220	450	TR	0.15	1.12	1010	2
10	500	TR	0.15	12.28	190	2
22	500	TR	0.15	9.17	210	2
33	500	TR	0.15	7.15	250	2
47	500	TR	0.15	5.36	355	2
100	500	TR	0.15	3.52	600	2
220	500	TR	0.15	1.96	1100	2
47 + 47	350	HUA	0.15	3.24	220	3
100 + 100	350	HUA	0.15	1.56	550	3
220 + 220	350	HUA	0.15	1.16	700	3
10 + 10	450	HUA	0.15	11.06	110	3
22 + 22	450	HUA	0.15	7.19	160	3
33 + 33	450	HUA	0.15	4.82	200	3
47 + 47	450	HUA	0.15	3.36	200	3
100 + 100	450	HUA	0.15	1.81	550	3
10 + 10	500	HUA	0.15	12.03	170	3
16 + 16	500	HUA	0.15	10.02	180	3
22 + 22	500	HUA	0.15	8.36	210	3
33 + 33	500	HUA	0.15	6.88	245	3
40 + 40	500	HUA	0.15	5.60	255	3
47 + 47	500	HUA	0.15	5.12	270	3
100 + 100	500	HUA	0.15	3.30	650	3

Ordering Code

TR	-	XXYY	-	10	-	500	-	MS
SERIES		CAN SIZE		CAPACITANCE		WORKING VOLTAGE		# of LUGS
TR		XX= Dia (mm)		10uF		350V		MS = 2 Lug
TRH		YY= Length (mm)		20uF		450V		MS3 = 3 Lugs
TH				40uF		500V		
CT				100uF				
HUA				150uF				
				250uF				
				500uF				



Actual ESR Readings (*)

	10uF 500V	20uF 500V	40uF 500V	100uF 500V	150uF 500V	250uF 500V	350uF 500V	500uF 500V
Ecap 1	1.9	1.0	0.78	0.90	0.55	0.66	0.29	0.29
Ecap 2	1.8	0.97	0.85	0.75	0.50	0.48	0.29	0.22
Ecap 3	1.8	0.93	0.88	0.85	0.61	0.44	0.29	0.22
Ecap 4	1.8	1.0	0.90	0.98	0.55	0.50	0.35	0.31
Ecap 5	1.8	1.0	0.87	0.86	0.53	0.47	0.30	0.27
Ecap 6	1.8	1.0	0.87	0.87	0.52	0.50	0.37	0.25
Ecap 7	1.9	1.0	0.80	0.84	0.52	0.51	0.28	0.29
Ecap 8	1.8	1.0	0.84	0.78	0.50	0.45	0.29	0.19
Ecap 9	1.7	1.0	0.83	0.80	0.54	0.49	0.33	0.24
Ecap 10	1.8	1.0	0.95	0.76	0.49	0.48	0.26	0.31
ESR Rang	1.7 - 1.9	0.93 - 1.0	0.78 - 0.95	0.75 - 0.98	0.49 - 0.61	0.44 - 0.66	0.26 - 0.37	0.19 - 0.31
ESR Aver	1.81	0.99	0.86	0.84	0.53	0.50	0.31	0.26

- Notes: * 10 Ecaps of each size randomly selected from same production batch.
 * ESR measured using EVB ESR/LOW OHMS METER pictured above.
 * Above ESR meter has "better than +/- 5% accuracy" per the manufacturer EVB.
 * No two ESR meters will give "100% identical" readings.

(*) The above ESR information assembled by D.Cantelon of JustRadios - Capacitors & Resistors (Authorized Dealer)