

## Type TYRE Series Low Impedance Series

### Key Features

- Low impedance polarized aluminum foil electrolytic capacitors
- High ripple current rating per unit size
- Radial leads
- Aluminum case with insulating sleeve
- Wide temperature range: -55°C to +105°C
- 4000 to 7000 hours load life assured
- RoHS Compliant



TE Connectivity’s radial lead aluminum electrolytic capacitors are designed for through-hole PCB population where board space is restricted.

The TYRE series offers low impedance and higher ripple current for unit size. Extended temperature range (-55°C to +105°C) for use in applications where high reliability is required under extreme conditions.

### Characteristics - Electrical

		Test Conditions JIS C5101-4								
<b>Operating Temp. Range</b>	-55°C ~ +105°C	—								
<b>Rated Voltage</b>	DC 6.3 ~ 100V	105°C								
<b>Capacitance</b>	0.47 ~ 15000µF	105°C								
<b>Capacitance Tolerance</b>	±20%	120Hz, 20°C								
<b>Leakage Current</b>	$I = 0.01 CV$ or $3\mu A$ whichever is greater after 2 minutes	C = rated capacitance (µF) V = rated DC working voltage (V) Temperature = 20°C								
<b>Dissipation Factor (Tanδ)</b>	Rated Voltage	6.3	10	16	25	35	50	63	100	120Hz, 20°C
	Tanδ max	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	
<b>Low Temperature Characteristics</b>	Rated Voltage	6.3	10	16	25	35	50	63	100	120Hz
	Impedance Ratio (max) $Z(-55°C)/Z(+20°C)$	3	3	3	3	3	3	3	3	
<b>Load Life Test</b>	Test Time	4000 Hrs for øD ≤ 6.3mm 5000 Hrs for øD = 8mm 6000 Hrs for øD = 10mm 7000 Hrs for øD ≥ 12.5mm								Specifications satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 4000~7000 hrs at 105°C
	Capacitance Change	Within ±25% of initial value								
	Dissipation Factor	Less than 200% of specified value								
	Leakage Current	Within specified value								
<b>Shelf Life Test</b>	Test Time	1000 hrs								Specifications satisfied when the capacitors are restored to 20°C after exposing them for 1000 hrs at 105°C without voltage applied.
	Capacitance Change	Within ±25% of initial value								
	Dissipation Factor	Less than 200% of specified value								
	Leakage Current	Within specified value								
<b>Ripple Current &amp; Multipliers Frequency</b>	Frequency (Hz)	120	1k	10k	100k and above					—
	C (µF) < 33	0.42	0.70	0.90	1.0					
	C (µF) 39 ~ 270	0.5	0.73	0.92	1.0					
	C (µF) 330 ~ 680	0.55	0.77	0.94	1.0					
	C (µF) 820 ~ 1800	0.6	0.8	0.96	1.0					
	C (µF) 2200 ~ 15000	0.7	0.85	0.98	1.0					

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#### Product Availability Chart

Capacitance		Rated Voltage (V.DC)															
		6.3		10		16		25		35		50		63		100	
µF	Code	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch
0.47	474															5x11	2.0
1.0	105															5x11	2.0
2.2	225															5x11	2.0
3.3	335															5x11	2.0
4.7	475							5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0
6.8	685													5x11	2.0	5x11	2.0
10	106					5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	6.3x11	2.5
12	126													5x11	2.0		
15	156													6.3x11	2.5	8x11.5	3.5
18	186											5x11	2.0			6.3x15	2.5
22	226	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	6.3x11	2.5	8x11.5	3.5
27	276									5x11	2.0						
33	336	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	6.3x11	2.5	6.3x11	2.5	8x15	3.5
																10x12.5	5.0
39	396							5x11	2.0					6.3x15	2.5		
47	476	5x11	2.0	5x11	2.0	5x11	2.0	5x11	2.0	6.3x11	2.5	6.3x11	2.5	8x11.5	3.5	8x20	3.5
																10x16	5.0
56	566					5x11	2.0			6.3x11	2.5	6.3x15	2.5				
68	686													8x11.5	3.5	10x20	5.0
82	826			5x11	2.0			6.3x11	2.5	6.3x15	2.5	8x11.5	3.5			10x25	5.0
100	107	5x11	2.0	5x11	2.0	6.3x11	2.5	6.3x11	2.5	8x11.5	3.5	8x11.5	3.5	8x15	3.5	12.5x20	5.0
														10x12.5	5.0		
120	127					6.3x11	2.5	6.3x15	2.5			8x15	3.5	10x16	5.0		
												10x12.5	5.0				
150	157	6.3x11	2.5	6.3x11	2.5	6.3x11	2.5	8x11.5	3.5	8x11.5	3.5	10x12.5	5.0	10x16	5.0	12.5x25	5.0
180	187			6.3x11	2.5	6.3x15	2.5					8x20	3.5	10x20	5.0	12.5x30	5.0
												10x16	5.0	12.5x16	5.0	16x20	7.5
220	227	6.3x11	2.5	6.3x11	2.5	8x11.5	3.5	8x11.5	3.5	8x15	3.5	10x16	5.0	10x20	5.0	16x25	7.5
				6.3x15	2.5					10x12.5	5.0	10x20	5.0	10x25	5.0	18x20	7.5
270	277											10x25	5.0	16x16	7.5		
330	337	6.3x11	2.5	8x11.5	3.5	8x11.5	3.5	8x15	3.5	8x20	3.5	10x20	5.0	12.5x20	5.0	16x25	7.5
		6.3x15	2.5					10x12.5	5.0	10x16	5.0	10x30	5.0				
390	397									10x20	5.0	12.5x20	5.0	12.5x25	5.0	18x25	7.5
													18x16	7.5			
470	477	8x11.5	3.5	8x11.5	3.5	8x15	3.5	8x20	3.5	10x20	5.0	12.5x20	5.0	12.5x25	5.0	16x31.5	7.5
						10x12.5	5.0	10x16	5.0					12.5x30	5.0		
														16x20	7.5		
560	567	8x11.5	3.5					10x20	5.0	10x25	5.0	12.5x25	5.0	16x25	7.5	18x31.5	7.5
																18x35.5	7.5
680	687	10x12.5	5.0	8x15	3.5	8x20	3.5	10x20	5.0	10x30	5.0	12.5x25	5.0	12.5x35	5.0		
				10x12.5	5.0	10x16	5.0			12.5x20	5.0	16x20	7.5	18x20	7.5		
820	827	8x15	3.5			10x20	5.0	10x25	5.0			12.5x35	5.0	16x31.5	7.5	18x40	7.5
		10x12.5	5.0									18x20	7.5	18x25	7.5		
1000	108	10x12.5	5.0	8x20	3.5	10x20	5.0	10x30	5.0	12.5x25	5.0	16x25	7.5	16x31.5	7.5		
				10x16	5.0			12.5x20	5.0					16x35.5	7.5		
1200	128	8x20	3.5	10x20	5.0	10x25	5.0			12.5x30	5.0	16x31.5	7.5	18x31.5	7.5		
		10x16	5.0							16x20	7.5	18x25	7.5				
1500	158	10x20	5.0	10x20	5.0	10x30	5.0	12.5x25	5.0	12.5x35	5.0	16x31.5	7.5	18x35.5	7.5		
				10x25	5.0	12.5x20	5.0	16x25	7.5	16x25	7.5	16x35.5	7.5				
1800	188							12.5x30	5.0	16x25	7.5	18x31.5	7.5				
								16x20	7.5	18x20	7.5						
2200	228	10x25	5.0	10x30	5.0	12.5x25	5.0	12.5x35	5.0	16x31.5	7.5	18x35.5	7.5	18x40	7.5		
		12.5x20	5.0	12.5x20	5.0			16x25	7.5	18x25	7.5						
								18x20	7.5								
2700	278	10x30	5.0	12.5x25	5.0	12.5x30	5.0	16x25	7.5	16x35.5	7.5						
						16x20	7.5			18x31.5	7.5						

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### Product Availability Chart (cont.)

Capacitance		Rated Voltage (V.DC)															
		6.3		10		16		25		35		50		63		100	
µF	Code	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch	Dia x L	Pitch
3300	338	12.5x20	5.0	12.5x25	5.0	12.5x35	5.0	16x31.5	7.5	18x35.5	7.5						
				12.5x30	5.0	16x25	7.5	18x25	7.5								
3900	398	12.5x25	5.0	12.5x35	5.0	16x25	7.5	16x35.5	7.5								
				16x20	7.5	18x20	7.5	18x31.5	7.5								
4700	478	12.5x30	5.0	16x25	7.5	16x31.5	7.5	18x35.5	7.5	18x40	7.5						
		16x25	7.5			18x25	7.5										
5600	568	12.5x35	5.0	16x25	7.5	16x35.5	7.5										
		16x20	7.5	18x20	7.5	18x31.5	7.5										
6800	688	16x25	7.5	16x31.5	7.5	18x35.5	7.5	18x40	7.5								
		18x20	7.5	18x25	7.5												
8200	828	16x31.5	7.5	16x35.5	7.5	18x35.5	7.5										
				18x31.5	7.5												
10000	109	16x31.5	7.5	18x35.5	7.5	18x40	7.5										
		18x25	7.5														
12000	129	18x31.5	7.5														
15000	159	18x35.5	7.5	18x40	7.5												

### Standard Product Table

Rated Voltage V.DC	Capacitance µF	Code	Case Size Dia x L	Lead Pitch	Case Code	Dissipation Factor (%)*	Ripple Current (mA)*	Impedance Max (Ω)*	Ripple Part Number
6.3	22	226	5 x 11	2.0	A11	22	180	0.6	TYRE0J226A11ML
6.3	33	336	5 x 11	2.0	A11	22	180	0.6	TYRE0J336A11ML
6.3	47	476	5 x 11	2.0	A11	22	180	0.6	TYRE0J476A11ML
6.3	100	107	5 x 11	2.0	A11	22	180	0.6	TYRE0J107A11ML
6.3	150	157	6.3 x 11	2.5	B11	22	290	0.25	TYRE0J157B11ML
6.3	220	227	6.3 x 11	2.5	B11	22	290	0.25	TYRE0J227B11ML
6.3	330	337	6.3 x 11	2.5	B11	22	290	0.25	TYRE0J337B11ML
6.3	330	337	6.3 x 15	2.5	B15	22	430	0.23	TYRE0J337B15ML
6.3	470	477	8 x 11.5	3.5	C11	22	555	0.117	TYRE0J477C11ML
6.3	560	567	8 x 11.5	3.5	C11	22	555	0.117	TYRE0J567C11ML
6.3	680	687	10 x 12.5	5.0	D12	22	755	0.09	TYRE0J687D12ML
6.3	820	827	8 x 15	3.5	C15	22	730	0.085	TYRE0J827C15ML
6.3	820	827	10 x 12.5	5.0	D12	22	755	0.09	TYRE0J827D12ML
6.3	1000	108	10 x 12.5	5.0	D12	22	755	0.09	TYRE0J108D12ML
6.3	1200	128	8 x 20	3.5	C20	22	955	0.065	TYRE0J128C20ML
6.3	1200	128	10 x 16	5.0	D16	22	1050	0.068	TYRE0J128D16ML
6.3	1500	158	10 x 20	5.0	D20	22	1220	0.052	TYRE0J158D20ML
6.3	2200	228	10 x 25	5.0	D25	22	1440	0.045	TYRE0J228D25ML
6.3	2200	228	12.5 x 20	5.0	E20	22	1815	0.038	TYRE0J228E20ML
6.3	2700	278	10 x 30	5.0	D30	22	1815	0.035	TYRE0J278D30ML
6.3	3300	338	12.5 x 20	5.0	E20	22	1655	0.038	TYRE0J338E20ML
6.3	3900	398	12.5 x 25	5.0	E25	22	1945	0.03	TYRE0J398E25ML
6.3	4700	478	12.5 x 30	5.0	E30	22	2310	0.025	TYRE0J478E30ML
6.3	4700	478	16 x 25	7.5	F25	22	2555	0.022	TYRE0J478F25ML
6.3	5600	568	12.5 x 35	5.0	E35	22	2510	0.022	TYRE0J568E35ML
6.3	5600	568	16 x 20	7.5	F20	22	2205	0.029	TYRE0J568F20ML
6.3	6800	688	16 x 25	7.5	F25	22	2555	0.022	TYRE0J688F25ML
6.3	6800	688	18 x 20	7.5	G20	22	2490	0.028	TYRE0J688G20ML
6.3	8200	828	16 x 31.5	7.5	F31	22	3010	0.018	TYRE0J828F31ML
6.3	10000	109	16 x 31.5	7.5	F31	22	3150	0.016	TYRE0J109F31ML
6.3	10000	109	18 x 25	7.5	G25	22	2740	0.02	TYRE0J109G25ML
6.3	12000	129	18 x 31.5	7.5	G31	22	3635	0.016	TYRE0J129G31ML
6.3	15000	159	18 x 35.5	7.5	G35	22	3680	0.015	TYRE0J159G35ML
10	22	226	5 x 11	2.0	A11	19	180	0.6	TYRE1A226A11ML
10	33	336	5 x 11	2.0	A11	19	180	0.6	TYRE1A336A11ML

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Standard Product Table (cont.)

Rated Voltage V.DC	Capacitance		Case Size Dia x L	Lead Pitch	Case Code	Dissipation Factor (%)*	Ripple Current (mA)*	Impedance Max (Ω)*	Ripple Part Number
	μF	Code							
10	47	476	5 x 11	2.0	A11	19	180	0.6	TYRE1A476A11ML
10	82	826	5 x 11	2.0	A11	19	180	0.6	TYRE1A826A11ML
10	100	107	5 x 11	2.0	A11	19	180	0.6	TYRE1A107A11ML
10	150	157	6.3 x 11	2.5	B11	19	290	0.25	TYRE1A157B11ML
10	180	187	6.3 x 11	2.5	B11	19	290	0.25	TYRE1A187B11ML
10	220	227	6.3 x 11	2.5	B11	19	290	0.25	TYRE1A227B11ML
10	220	227	6.3 x 15	2.5	B15	19	430	0.23	TYRE1A227B15ML
10	330	337	8 x 11.5	3.5	C11	19	555	0.117	TYRE1A337C11ML
10	470	477	8 x 11.5	3.5	C11	19	555	0.117	TYRE1A477C11ML
10	680	687	8 x 15	3.5	C15	19	730	0.085	TYRE1A687C15ML
10	680	687	10 x 12.5	5.0	D12	19	755	0.09	TYRE1A687D12ML
10	1000	108	8 x 20	3.5	C20	19	995	0.065	TYRE1A108C20ML
10	1000	108	10 x 16	5.0	D16	19	1050	0.068	TYRE1A108D16ML
10	1200	128	10 x 20	5.0	D20	19	1220	0.052	TYRE1A128D20ML
10	1500	158	10 x 20	5.0	D20	19	1220	0.052	TYRE1A158D20ML
10	1500	158	10 x 25	5.0	D25	19	1440	0.045	TYRE1A158D25ML
10	2200	228	10 x 30	5.0	D30	19	1815	0.035	TYRE1A228D30ML
10	2200	228	12.5 x 20	5.0	E20	19	1655	0.038	TYRE1A228E20ML
10	2700	278	12.5 x 25	5.0	E25	19	1945	0.03	TYRE1A278E25ML
10	3300	338	12.5 x 25	5.0	E25	19	1945	0.03	TYRE1A338E25ML
10	3300	338	12.5 x 30	5.0	E30	19	2310	0.025	TYRE1A338E30ML
10	3900	398	12.5 x 35	5.0	E35	19	2510	0.022	TYRE1A398E35ML
10	3900	398	16 x 20	7.5	F20	19	2205	0.029	TYRE1A398F20ML
10	4700	478	16 x 25	7.5	F25	19	2555	0.022	TYRE1A478F25ML
10	5600	568	16 x 25	7.5	F25	19	2555	0.022	TYRE1A568F25ML
10	5600	568	18 x 20	7.5	G20	19	2490	0.028	TYRE1A568G20ML
10	6800	688	16 x 31.5	7.5	F31	19	3010	0.018	TYRE1A688F31ML
10	6800	688	18 x 25	7.5	G25	19	2740	0.02	TYRE1A688G25ML
10	8200	828	16 x 35.5	7.5	F35	19	3150	0.016	TYRE1A828F35ML
10	8200	828	18 x 31.5	7.5	G31	19	3635	0.016	TYRE1A828G31ML
10	10000	109	18 x 35.5	7.5	G35	19	3680	0.015	TYRE1A109G35ML
10	15000	159	18 x 40	7.5	G40	19	3800	0.014	TYRE1A159G40ML
16	10	106	5 x 11	2.0	A11	16	180	0.6	TYRE1C106A11ML
16	22	226	5 x 11	2.0	A11	16	180	0.6	TYRE1C226A11ML
16	33	336	5 x 11	2.0	A11	16	180	0.6	TYRE1C336A11ML
16	47	476	5 x 11	2.0	A11	16	180	0.6	TYRE1C476A11ML
16	56	566	5 x 11	2.0	A11	16	180	0.6	TYRE1C566A11ML
16	100	107	6.3 x 11	2.5	B11	16	290	0.25	TYRE1C107B11ML
16	120	127	6.3 x 11	2.5	B11	16	290	0.25	TYRE1C127B11ML
16	150	157	6.3 x 11	2.5	B11	16	290	0.25	TYRE1C157B11ML
16	180	187	6.3 x 15	2.5	B15	16	430	0.23	TYRE1C187B15ML
16	220	227	8 x 11.5	3.5	C11	16	555	0.117	TYRE1C227C11ML
16	330	337	8 x 11.5	3.5	C11	16	555	0.117	TYRE1C337C11ML
16	470	477	8 x 15	3.5	C15	16	730	0.085	TYRE1C477C15ML
16	470	477	10 x 12.5	5.0	D12	16	755	0.09	TYRE1C477D12ML
16	680	687	8 x 20	3.5	C20	16	995	0.065	TYRE1C687C20ML
16	680	687	10 x 16	5.0	D16	16	1050	0.068	TYRE1C687D16ML
16	820	827	10 x 20	5.0	D20	16	1220	0.052	TYRE1C827D20ML
16	1000	108	10 x 20	5.0	D20	16	1220	0.052	TYRE1C108D20ML
16	1200	128	10 x 25	5.0	D25	16	1440	0.045	TYRE1C128D25ML
16	1500	158	10 x 30	5.0	D30	16	1815	0.035	TYRE1C158D30ML
16	1500	158	12.5 x 20	5.0	E20	16	1655	0.038	TYRE1C158E20ML
16	2200	228	12.5 x 25	5.0	E25	16	1945	0.03	TYRE1C228E25ML
16	2700	278	12.5 x 30	5.0	E30	16	2310	0.025	TYRE1C228E30ML
16	2700	278	16 x 20	7.5	F20	16	2205	0.029	TYRE1C278F20ML
16	3300	338	12.5 x 35	5.0	E35	16	2510	0.022	TYRE1C338E35ML
16	3300	338	16 x 25	7.5	F25	16	2555	0.022	TYRE1C338F25ML

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**Standard Product Table (cont.)**

Rated Voltage V.DC	Capacitance $\mu$ F	Code	Case Size Dia x L	Lead Pitch	Case Code	Dissipation Factor (%)*	Ripple Current (mA)*	Impedance Max ( $\Omega$ )*	Ripple Part Number
16	3900	398	16 x 25	7.5	F25	16	2555	0.022	TYRE1C398F25ML
16	3900	398	18 x 20	7.5	G20	16	2490	0.028	TYRE1C398G20ML
16	4700	478	16 x 31.5	7.5	F31	16	3010	0.018	TYRE1C478F31ML
16	4700	478	18 x 25	7.5	G25	16	2740	0.02	TYRE1C478G25ML
16	5600	568	16 x 35.5	7.5	F35	16	3150	0.016	TYRE1C568F35ML
16	5600	568	18 x 31.5	7.5	G31	16	3635	0.016	TYRE1C568G31ML
16	6800	688	18 x 35.5	7.5	G35	16	3680	0.015	TYRE1C688G35ML
16	8200	828	18 x 35.5	7.5	G35	16	3680	0.015	TYRE1C828G35ML
16	10000	109	18 x 40	7.5	G40	16	3800	0.014	TYRE1C109G40ML
25	4.7	475	5 x 11	2.0	A11	14	180	0.6	TYRE1E475A11ML
25	10	106	5 x 11	2.0	A11	14	180	0.6	TYRE1E106A11ML
25	22	226	5 x 11	2.0	A11	14	180	0.6	TYRE1E226A11ML
25	33	336	5 x 11	2.0	A11	14	180	0.6	TYRE1E336A11ML
25	39	396	5 x 11	2.0	A11	14	180	0.6	TYRE1E396A11ML
25	47	476	5 x 11	2.0	A11	14	180	0.6	TYRE1E476A11ML
25	82	826	6.3 x 11	2.5	B11	14	290	0.25	TYRE1E826B11ML
25	100	107	6.3 x 11	2.5	B11	14	290	0.25	TYRE1E107B11ML
25	120	127	6.3 x 15	2.5	B15	14	430	0.23	TYRE1E127B15ML
25	150	157	8 x 11.5	3.5	C11	14	555	0.117	TYRE1E157C11ML
25	220	227	8 x 11.5	3.5	C11	14	555	0.117	TYRE1E227C11ML
25	330	337	8 x 15	3.5	C15	14	730	0.085	TYRE1E337C15ML
25	330	337	10 x 12.5	5.0	D12	14	755	0.09	TYRE1E337D12ML
25	470	477	8 x 20	3.5	C20	14	995	0.065	TYRE1E477C20ML
25	470	477	10 x 16	5.0	D16	14	1050	0.068	TYRE1E477D16ML
25	560	567	10 x 20	5.0	D20	14	1220	0.052	TYRE1E567D20ML
25	680	687	10 x 20	5.0	D20	14	1220	0.052	TYRE1E687D20ML
25	820	827	10 x 25	5.0	D25	14	1440	0.045	TYRE1E827D25ML
25	1000	108	10 x 30	5.0	D30	14	1815	0.035	TYRE1E108D30ML
25	1000	108	12.5 x 20	5.0	E20	14	1655	0.038	TYRE1E108E20ML
25	1500	158	12.5 x 25	5.0	E25	14	1945	0.03	TYRE1E158E25ML
25	1500	158	16 x 25	7.5	F25	14	2555	0.022	TYRE1E158F25ML
25	1800	188	12.5 x 30	5.0	E30	14	2310	0.025	TYRE1E188E30ML
25	1800	188	16 x 20	7.5	F20	14	2205	0.029	TYRE1E188F20ML
25	2200	228	12.5 x 35	5.0	E35	14	2510	0.022	TYRE1E228E35ML
25	2200	228	16 x 25	7.5	F25	14	2555	0.028	TYRE1E228F25ML
25	2200	228	18 x 20	7.5	G20	14	2490	0.022	TYRE1E228G20ML
25	2700	278	16 x 25	7.5	F25	14	2555	0.022	TYRE1E278F25ML
25	3300	338	16 x 31.5	7.5	F31	14	3010	0.018	TYRE1E338F31ML
25	3300	338	18 x 25	7.5	G25	14	2740	0.02	TYRE1E338G25ML
25	3900	398	16 x 35.5	7.5	F35	14	3150	0.016	TYRE1E398F35ML
25	3900	398	18 x 31.5	7.5	G31	14	3635	0.016	TYRE1E398G31ML
25	4700	478	18 x 35.5	7.5	G35	14	3680	0.015	TYRE1E478G35ML
25	6800	688	18 x 40	7.5	G40	14	3800	0.014	TYRE1E688G40ML
35	4.7	475	5 x 11	2.0	A11	12	180	0.6	TYRE1V475A11ML
35	10	106	5 x 11	2.0	A11	12	180	0.6	TYRE1V106A11ML
35	22	226	5 x 11	2.0	A11	12	180	0.6	TYRE1V226A11ML
35	27	276	5 x 11	2.0	A11	12	180	0.6	TYRE1V276A11ML
35	33	336	5 x 11	2.0	A11	12	180	0.6	TYRE1V336A11ML
35	47	476	6.3 x 11	2.5	B11	12	290	0.25	TYRE1V476B11ML
35	56	566	6.3 x 11	2.5	B11	12	290	0.25	TYRE1V566B11ML
35	82	826	6.3 x 15	2.5	B15	12	430	0.46	TYRE1V826B15ML
35	100	107	8 x 11.5	3.5	C11	12	555	0.117	TYRE1V107C11ML
35	150	157	8 x 11.5	3.5	C11	12	555	0.117	TYRE1V157C11ML
35	220	227	8 x 15	3.5	C15	12	730	0.085	TYRE1V227C15ML
35	220	227	10 x 12.5	5.0	D12	12	755	0.09	TYRE1V227D12ML
35	330	337	8 x 20	3.5	C20	12	995	0.065	TYRE1V337C20ML

### Type TYRE Series Low Impedance Series

Standard Product Table (cont.)

Rated Voltage V.DC	Capacitance $\mu$ F	Code	Case Size Dia x L	Lead Pitch	Case Code	Dissipation Factor (%)*	Ripple Current (mA)*	Impedance Max ( $\Omega$ )*	Ripple Part Number
35	330	337	10 x 16	5.0	D16	12	1050	0.068	TYRE1V337D16ML
35	390	397	10 x 20	5.0	D20	12	1220	0.052	TYRE1V397D20ML
35	470	477	10 x 20	5.0	D20	12	1220	0.052	TYRE1V477D20ML
35	560	567	10 x 25	5.0	D25	12	1440	0.045	TYRE1V567D25ML
35	680	687	10 x 30	5.0	D30	12	1815	0.035	TYRE1V687D30ML
35	680	687	12.5 x 20	5.0	E20	12	1655	0.038	TYRE1V687E20ML
35	1000	108	12.5 x 25	5.0	E25	12	1945	0.03	TYRE1V108E25ML
35	1200	128	12.5 x 30	5.0	E30	12	2310	0.025	TYRE1V128E30ML
35	1200	128	16 x 20	7.5	F20	12	2205	0.029	TYRE1V128F20ML
35	1500	158	12.5 x 35	5.0	E35	12	2510	0.022	TYRE1V158E35ML
35	1500	158	16 x 25	7.5	F25	12	2555	0.022	TYRE1V158F25ML
35	1800	188	16 x 25	7.5	F25	12	2555	0.022	TYRE1V188F25ML
35	1800	188	18 x 20	7.5	G20	12	2490	0.028	TYRE1V188G20ML
35	2200	228	16 x 31.5	7.5	F31	12	3010	0.018	TYRE1V228F31ML
35	2200	228	18 x 25	7.5	G25	12	2740	0.02	TYRE1V228G25ML
35	2700	278	16 x 35.5	7.5	F35	12	3150	0.016	TYRE1V278F35ML
35	2700	278	18 x 31.5	7.5	G31	12	3635	0.016	TYRE1V278G31ML
35	3300	338	18 x 35.5	7.5	G35	12	3680	0.015	TYRE1V338G35ML
35	4700	478	18 x 40	7.5	G40	12	3800	0.014	TYRE1V478G40ML
50	4.7	475	5 x 11	2.0	A11	10	90	2.3	TYRE1H475A11ML
50	10	106	5 x 11	2.0	A11	10	120	1.4	TYRE1H106A11ML
50	18	186	5 x 11	2.0	A11	10	155	1.3	TYRE1H186A11ML
50	22	226	5 x 11	2.0	A11	10	170	1.2	TYRE1H226A11ML
50	33	336	6.3 x 11	2.5	B11	10	300	0.43	TYRE1H336B11ML
50	47	476	6.3 x 11	2.5	B11	10	300	0.43	TYRE1H476B11ML
50	56	566	6.3 x 15	2.5	B15	10	360	0.4	TYRE1H566B15ML
50	82	826	8 x 11.5	3.5	C11	10	485	0.234	TYRE1H826C11ML
50	100	107	8 x 11.5	3.5	C11	10	485	0.234	TYRE1H107C11ML
50	120	127	8 x 15	3.5	C15	10	635	0.155	TYRE1H127C15ML
50	120	127	10 x 12.5	5.0	D12	10	615	0.162	TYRE1H127D12ML
50	150	157	10 x 12.5	5.0	D12	10	860	0.162	TYRE1H157D12ML
50	180	187	8 x 20	3.5	C20	10	615	0.12	TYRE1H187C20ML
50	180	187	10 x 16	5.0	D16	10	850	0.119	TYRE1H187D16ML
50	220	227	10 x 16	5.0	D16	10	850	0.119	TYRE1H227D16ML
50	220	227	10 x 20	5.0	D20	10	1030	0.09	TYRE1H227D20ML
50	270	277	10 x 25	5.0	D25	10	1200	0.082	TYRE1H277D25ML
50	330	337	10 x 20	5.0	D20	10	1030	0.09	TYRE1H337D20ML
50	330	337	10 x 30	5.0	D30	10	1610	0.06	TYRE1H337D30ML
50	390	397	12.5 x 20	5.0	E20	10	1480	0.063	TYRE1H397E20ML
50	470	477	12.5 x 20	5.0	E20	10	1500	0.06	TYRE1H477E20ML
50	560	567	12.5 x 25	5.0	E25	10	1832	0.05	TYRE1H567E25ML
50	680	687	12.5 x 25	5.0	E25	10	1832	0.05	TYRE1H687E25ML
50	680	687	16 x 20	7.5	F20	10	1835	0.048	TYRE1H687F20ML
50	820	827	12.5 x 35	5.0	E35	10	2285	0.034	TYRE1H827E35ML
50	820	827	18 x 20	7.5	G20	10	2420	0.042	TYRE1H827G20ML
50	1000	108	16 x 25	7.5	F25	10	2235	0.034	TYRE1H108F25ML
50	1200	128	16 x 31.5	7.5	F31	10	2700	0.028	TYRE1H128F31ML
50	1200	128	18 x 25	7.5	G25	10	2610	0.029	TYRE1H128G25ML
50	1500	158	16 x 31.5	7.5	F31	10	2700	0.028	TYRE1H158F31ML
50	1500	158	16 x 35.5	7.5	F35	10	2790	0.025	TYRE1H158F35ML
50	1800	188	18 x 31.5	7.5	G31	10	3000	0.025	TYRE1H188G31ML
50	2200	228	18 x 35.5	7.5	G35	10	3100	0.023	TYRE1H228G35ML
63	4.7	475	5 x 11	2.0	A11	9	68	4.7	TYRE1J475A11ML
63	6.8	685	5 x 11	2.0	A11	9	95	2.5	TYRE1J685A11ML
63	10	106	5 x 11	2.0	A11	9	110	2.1	TYRE1J106A11ML
63	12	126	5 x 11	2.0	A11	9	145	2.0	TYRE1J126A11ML

**Type TYRE Series Low Impedance Series**

Standard Product Table (cont.)

Rated Voltage V.DC	Capacitance		Case Size Dia x L	Lead Pitch	Case Code	Dissipation Factor (%)*	Ripple Current (mA)*	Impedance Max (Ω)*	Ripple Part Number
	μF	Code							
63	15	156	6.3 x 11	2.5	B11	9	160	1.2	TYRE1J156B11ML
63	22	226	6.3 x 11	2.5	B11	9	250	0.71	TYRE1J226B11ML
63	33	336	6.3 x 11	2.5	B11	9	250	0.71	TYRE1J336B11ML
63	39	396	6.3 x 15	2.5	B15	9	330	0.7	TYRE1J396B15ML
63	47	476	8 x 11.5	3.5	C11	9	405	0.342	TYRE1J476C11ML
63	68	686	8 x 11.5	3.5	C11	9	405	0.342	TYRE1J686C11ML
63	100	107	8 x 15	3.5	C15	9	535	0.256	TYRE1J107C15ML
63	100	107	10 x 12.5	5.0	D12	9	535	0.23	TYRE1J107D12ML
63	120	127	10 x 16	5.0	D16	9	600	0.194	TYRE1J127D16ML
63	150	157	10 x 16	5.0	D16	9	660	0.194	TYRE1J157D16ML
63	180	187	10 x 20	5.0	D20	9	885	0.147	TYRE1J187D20ML
63	180	187	12.5 x 16	5.0	E16	9	1020	0.15	TYRE1J187E16ML
63	220	227	10 x 20	5.0	D20	9	885	0.147	TYRE1J227D20ML
63	220	227	10 x 25	5.0	D25	9	1020	0.13	TYRE1J227D25ML
63	270	277	16 x 16	7.5	F16	9	1410	0.09	TYRE1J277F16ML
63	330	337	12.5 x 20	5.0	E20	9	1285	0.085	TYRE1J337E20ML
63	390	397	12.5 x 25	5.0	E25	9	1720	0.07	TYRE1J397E25ML
63	390	397	18 x 16	7.5	G16	9	1690	0.086	TYRE1J397G16ML
63	470	477	12.5 x 25	5.0	E25	9	1720	0.07	TYRE1J477E25ML
63	470	477	12.5 x 30	5.0	E30	9	2090	0.055	TYRE1J477E30ML
63	470	477	16 x 20	7.5	F20	9	1765	0.059	TYRE1J477F20ML
63	560	567	16 x 25	7.5	F25	9	2160	0.05	TYRE1J567F25ML
63	680	687	12.5 x 35	5.0	E35	9	2265	0.047	TYRE1J687E35ML
63	680	687	18 x 20	7.5	G20	9	2290	0.055	TYRE1J687G20ML
63	820	827	16 x 31.5	7.5	F31	9	2670	0.043	TYRE1J827F31ML
63	820	827	18 x 25	7.5	G25	9	2585	0.043	TYRE1J827G25ML
63	1000	108	16 x 31.5	7.5	F31	9	2670	0.043	TYRE1J108F31ML
63	1000	108	16 x 35.5	7.5	F35	9	2770	0.036	TYRE1J108F35ML
63	1200	128	18 x 31.5	7.5	G31	9	2950	0.032	TYRE1J128G31ML
63	1500	158	18 x 35.5	7.5	G35	9	3095	0.03	TYRE1J158G35ML
63	2200	228	18 x 40	7.5	G40	9	3200	0.028	TYRE1J228G40ML
100	0.47	474	5 x 11	2.0	A11	8	20	43	TYRE2A474A11ML
100	1.0	105	5 x 11	2.0	A11	8	30	20	TYRE2A105A11ML
100	2.2	225	5 x 11	2.0	A11	8	44	9.8	TYRE2A225A11ML
100	3.3	335	5 x 11	2.0	A11	8	58	6.6	TYRE2A335A11ML
100	4.7	475	5 x 11	2.0	A11	8	74	4.6	TYRE2A475A11ML
100	6.8	685	5 x 11	2.0	A11	8	95	3.5	TYRE2A685A11ML
100	10	106	6.3 x 11	2.5	B11	8	130	1.8	TYRE2A106B11ML
100	15	156	8 x 11.5	3.5	C11	8	180	0.83	TYRE2A156C11ML
100	18	186	6.3 x 15	2.5	B15	8	200	0.8	TYRE2A186B15ML
100	22	226	8 x 11.5	3.5	C11	8	230	0.68	TYRE2A226C11ML
100	33	336	8 x 15	3.5	C15	8	320	0.46	TYRE2A336C15ML
100	33	336	10 x 12.5	5.0	D12	8	360	0.45	TYRE2A336D12ML
100	47	476	8 x 20	3.5	C20	8	420	0.37	TYRE2A476C20ML
100	47	476	10 x 16	5.0	D16	8	420	0.37	TYRE2A476D16ML
100	68	686	10 x 20	5.0	D20	8	490	0.3	TYRE2A686D20ML
100	82	826	10 x 25	5.0	D25	8	540	0.25	TYRE2A826D25ML
100	100	107	12.5 x 20	5.0	E20	8	580	0.18	TYRE2A107E20ML
100	150	157	12.5 x 25	5.0	E25	8	710	0.13	TYRE2A157E25ML
100	180	187	12.5 x 30	5.0	E30	8	790	0.12	TYRE2A187E30ML
100	180	187	16 x 20	7.5	F20	8	750	0.13	TYRE2A187F20ML
100	220	227	16 x 25	7.5	F25	8	890	0.1	TYRE2A227F25ML
100	220	227	18 x 20	7.5	G20	8	850	0.11	TYRE2A227G20ML
100	330	337	16 x 25	7.5	F25	8	1080	0.09	TYRE2A337F25ML

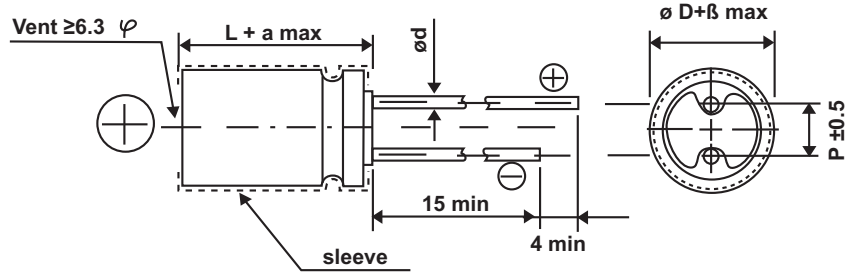
## Type TYRE Series Low Impedance Series

### Standard Product Table (cont.)

Rated Voltage V.DC	Capacitance $\mu$ F	Code	Case Size Dia x L	Lead Pitch	Case Code	Dissipation Factor (%)*	Ripple Current (mA)*	Impedance Max ( $\Omega$ )*	Ripple Part Number
100	390	397	18 x 25	7.5	G25	8	1260	0.083	TYRE2A397G25ML
100	470	477	16 x 31.5	7.5	F31	8	1310	0.076	TYRE2A477F31ML
100	560	567	18 x 31.5	7.5	G31	8	1370	0.068	TYRE2A567G31ML
100	560	567	18 x 35.5	7.5	G35	8	1410	0.064	TYRE2A567G35ML
100	820	827	18 x 40	7.5	G40	8	1520	0.047	TYRE2A827G40ML

\* DF measured at 120Hz, 20°C \* RC measured at 100kHz, 105°C \* ESR measured at 100kHz, 20°C

### Dimensions



Case Code	Dimensions (mm)			
	Dia + $\beta$ 0.5 max	L + a max	P $\pm$ 0.5	Lead dia
A11	5.0	11 +1.0	2.0	0.5
B11	6.3	11 +1.0	2.5	0.5
B15	6.3	15 +1.0	2.5	0.5
C11	8.0	11.5 +1.0	3.5	0.6
C15	8.0	15 +1.0	3.5	0.6
C20	8.0	20 +1.0	3.5	0.6
D12	10	12.5 +1.5	5.0	0.6
D16	10	16 +1.5	5.0	0.6
D20	10	20 +1.5	5.0	0.6
D25	10	25 +1.5	5.0	0.6
D30	10	30 +1.5	5.0	0.6
E16	12.5	16 +1.5	5.0	0.6
E20	12.5	20 +1.5	5.0	0.6
E25	12.5	25 +1.5	5.0	0.6
E30	12.5	30 +1.5	5.0	0.6
E35	12.5	35 +1.5	5.0	0.6
F16	16	16 +1.5	7.5	0.8
F20	16	20 +1.5	7.5	0.8
F25	16	25 +1.5	7.5	0.8
F31	16	31.5 +1.5	7.5	0.8
F35	16	35.5 +1.5	7.5	0.8
G16	18	16 +1.5	7.5	0.8
G20	18	20 +1.5	7.5	0.8
G25	18	25 +1.5	7.5	0.8
G31	18	31.5 +1.5	7.5	0.8
G35	18	35 +1.5	7.5	0.8
G40	18	40 +1.5	7.5	0.8

### How to Order

TYRE	0J	226	A11	M	L
<b>Common Part</b>	<b>Voltage Code</b>	<b>Capacitance</b>	<b>Case Code</b>	<b>Tolerance</b>	<b>Packaging</b>
TYRE	0J (6.3V) 1A (10V) 1C (16V) 1E (25V) 1V (35V) 1H (50V) 1J (63V) 2A (100V)	e.g. 226	e.g. A11	M (20%)	L = Loose (bulk)

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