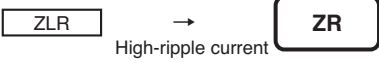


ZR Series Useful of 5,000 hours at 105°C

• Conform RoHS

Features

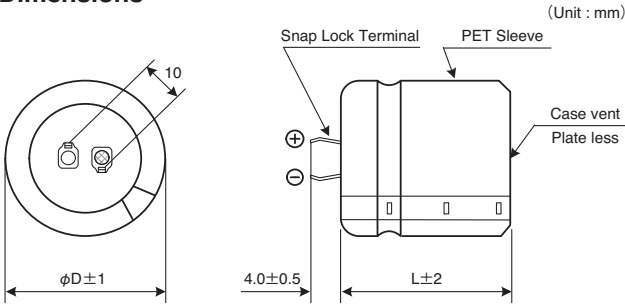
• ZR series has higher ripple current (ave 30%) compared with ZLR series. These features are accomplished by new special anode foil and high reliability electrolyte.



Product Specifications

Items	Specifications
Temperature range	−40°C ~ +105°C
Rated voltage	400 ~ 450V.DC
Capacitance tolerance	±20% (20°C, 120Hz)
Leakage current	0.02CV (µA) or 3mA, whichever is smaller or less (20°C, after 5 minutes) [C = nominal capacitance (µF), V = rated voltage (V)]
Dissipation factor	Less than the value specified in the standard products table. (20°C, 120Hz)
Permissible ripple current	As specified in the standard product table. (105°C, 120Hz)
Endurance	After the rated voltage with specified ripple current is applied at 105°C for 3,000 hours : Capacitance change : Within ±20% of the initial value measured Dissipation factor : 200% or less than the initial value specified Leakage current : Less than or equal to the initial value specified
Shelf life	The following specification shall be meet when the capacitor are restored to 20°C after storage of 500 hours at 105°C with no voltage applied. Before the measurement, the capacitor shall be preconditioned by applying the voltage treatment according to Item 4.1 of JIS C 5101-4. Capacitance change : Within ±15% of the initial value measured Dissipation factor : 175% or less than the initial value specified Leakage current : Less than or equal to the initial value specified
Others	JIS C 5101-4

Dimensions



Ripple current correction coefficient

Temperature (°C)	60	70	85	105
Correction coefficient	1.9	1.7	1.4	1.0
Frequency (Hz)	120	300	1K	≥10K
Correction coefficient	1.0	1.3	1.5	1.6

Terminal permissible current is limited to 10Arms. (Even if calculated the permissible ripple current with the correction coefficient exceeds 10Arms)
Please consult us when the ripple voltage exceeds 70Vp-p.

Product code

(Example) ZR Series 400V 680µF±20%

ZR 2G 681 M C A S7 WP EC

Type of series

Rated voltage code

Capacitance code

Capacitance tolerance code

Terminal code

Case dia code

Case height code

Plate code

Environmental code

Refer to page 118-119 for other terminal shape available on request.

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μ F)	Case size ϕ D $\times$ L (mm)	$\tan\delta$ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	ESR(typ.) (m Ω) 20°C, 100Hz	Product name
400	180	30 $\times$ 25	0.20	1.50	330	ZR2G181MCZS2WPEC
	220	30 $\times$ 30	0.20	1.82	270	ZR2G221MCZS3WPEC
	270	30 $\times$ 35	0.20	2.11	220	ZR2G271MCZS4WPEC
		35 $\times$ 25	0.20	2.02	220	ZR2G271MCAS2WPEC
	330	30 $\times$ 40	0.20	2.43	180	ZR2G331MCZS5WPEC
		35 $\times$ 30	0.20	2.35	180	ZR2G331MCAS3WPEC
	390	30 $\times$ 45	0.20	2.73	150	ZR2G391MCZS6WPEC
		35 $\times$ 35	0.20	2.67	150	ZR2G391MCAS4WPEC
	470	30 $\times$ 50	0.20	3.09	130	ZR2G471MCZS7WPEC
		35 $\times$ 40	0.20	3.04	130	ZR2G471MCAS5WPEC
	560	35 $\times$ 45	0.20	3.43	110	ZR2G561MCAS6WPEC
	680	35 $\times$ 50	0.20	3.90	90	ZR2G681MCAS7WPEC

Rated Voltage (V. DC)	Capacitance (μ F)	Case size ϕ D $\times$ L (mm)	$\tan\delta$ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	ESR(typ.) (m Ω) 20°C, 100Hz	Product name
450	150	30 $\times$ 25	0.20	1.25	410	ZR2W151MCZS2WPEC
	180	30 $\times$ 30	0.20	1.50	350	ZR2W181MCZS3WPEC
	220	30 $\times$ 35	0.20	1.83	290	ZR2W221MCZS4WPEC
		35 $\times$ 25	0.20	1.83	290	ZR2W221MCAS2WPEC
	270	30 $\times$ 40	0.20	2.21	230	ZR2W271MCZS5WPEC
		35 $\times$ 30	0.20	2.14	230	ZR2W271MCAS3WPEC
	330	30 $\times$ 45	0.20	2.52	190	ZR2W331MCZS6WPEC
		35 $\times$ 35	0.20	2.47	190	ZR2W331MCAS4WPEC
	390	30 $\times$ 50	0.20	2.83	170	ZR2W391MCZS7WPEC
		35 $\times$ 40	0.20	2.78	170	ZR2W391MCAS5WPEC
	470	35 $\times$ 45	0.20	3.16	140	ZR2W471MCAS6WPEC
	560	35 $\times$ 50	0.20	3.55	120	ZR2W561MCAS7WPEC

Life time graph

Useful life depending on ambient temperature Ta and ripple current operating condition I versus rated ripple current at 105°C, 120Hz

