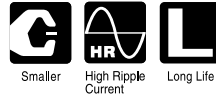


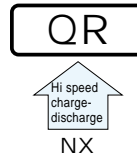
ALUMINUM ELECTROLYTIC CAPACITORS

QR series

Screw Terminal Type, High speed charge-discharge



- Suited for high frequency regenerative voltage for AC servomotor, general inverter.
- Suited for equipment used at voltage fluctuating area.
- Suited for rectifier circuit of voltage doubler
- Available for adapted to the RoHS directive (2002/95/EC).

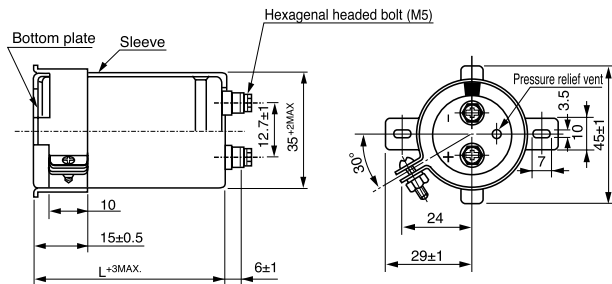


Specifications

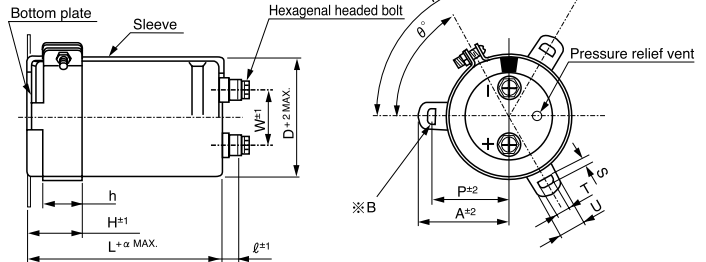
Item	Performance Characteristics	
Category Temperature Range	- 25 ~ +85°C	
Rated Voltage Range	350 ~ 450V	
Rated Capacitance Range	680 ~ 15000μF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Leakage Current	After 5 minutes' application of rated voltage, leakage current is not more than $3\sqrt{CV}$ (μA) or 5 mA, whichever is smaller (at 20°C). [C : Rated Capacitance(μF), V : Voltage (V)]	
tan δ	(Measurement frequency:120Hz, Temperature:20°C)	
	Rated voltage (V)	350 400 450
Stability at Low Temperature	tan δ (MAX.)	0.15 0.15 0.15
	Rated voltage (V)	350 ~ 450
	Impedance ratio Z_T/Z_{20} (MAX.)	Z - 25°C / Z+20°C 8
Endurance of charge-discharge behavior	After an application of charge-discharge voltage for 20million times (charge-discharge voltage difference(ΔV)=rated voltage × 0.3, cycle 3Hz)capacitors shell meet the characteristics requirement listed at right	
	Capacitance change	Within ±20% of initial value
	tan δ	300% or less of initial specified value
	Leakage current	Initial specified value or less
Endurance	After an application of DC voltage (in the range of rated voltage even after over-lapping the standard ripple current) for 5,000 hours at 85°C, capacitors meet the characteristics requirements listed at right.	
	Capacitance change	Within ±20% of initial value
	tan δ	300% or less of initial specified value
	Leakage current	Initial specified value or less
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.	
	Marking	
Printed with white color letter on darkbrown sleeve.		

Drawing

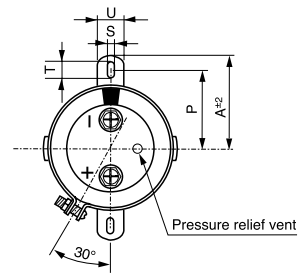
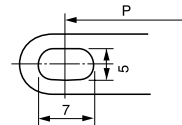
φ35 Screw terminal type



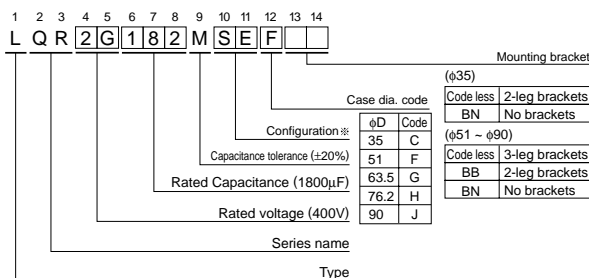
φ51 ~ 90 Screw terminal type



※ B
3-leg brackets for φ90 capacitors have different hole shapes from the ordinary ones illustrated below.



Type numbering system (Example : 400V 1800μF)



※ Configuration

Cr (III) Plating (RoHS compliant)
SE

Resin bushing available upon request.

※ Please contact us if PVCless products are required

● Dimension of terminal pitch (W) and length (ℓ) and Nominal dia. of bolt (mm)

φD	W	ℓ	α	Nominal dia. of bolt
51	22.0	6	3	M 5
63.5	28.6	6	3	M 5
76.2	31.8	6	3	M 5
90	31.8	6	3	M 5

● Dimension of mounting bracket (mm)

Symbol	Leg shape	3-Leg				2-Leg			
		φD	51	63.5	76.2	90	51	63.5	76.2
P		32.5	38.1	44.5	50.8	33.2	40.5	46.5	53
A		38.5	43	49.2	58.5	40	46.5	53	59
T		7.5	8.0	7.0	8.0	6.0	7.0	6.0	6.0
S		5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
U		12	14	14	18	14	14	14	14
θ°		60	60	60	60	30	30	30	30
H		20	25	30	35	25	35	35	35
h		15	20	24	25	15	20	20	20

● Dimension table in next page.



■ Dimensions

V (code)	350V (2V)				
Surge	400V				
Cap. (μF)	Size φD × L(mm)	Rated ripple (Arms)	tan δ	Leakage Current (mA)	Code
820	35 × 80	3.3	0.15	1.60	LQR2V821MSEC
1000	35 × 100	4.3	0.15	1.77	LQR2V102MSEC
1800	51 × 80	7.2	0.15	2.38	LQR2V182MSEF
2200	51 × 100	9.1	0.15	2.63	LQR2V222MSEF
2700	51 × 110	10.8	0.15	2.91	LQR2V272MSEF
	63.5 × 80	10.6	0.15	2.91	LQR2V272MSEG
3300	51 × 130	12.4	0.15	3.22	LQR2V332MSEF
	63.5 × 90	11.9	0.15	3.22	LQR2V332MSEG
3900	63.5 × 110	14.6	0.15	3.50	LQR2V392MSEG
	76.2 × 80	14.1	0.15	3.50	LQR2V392MSEH
4700	51 × 170	17.0	0.15	3.84	LQR2V472MSEF
	76.2 × 90	16.4	0.15	3.84	LQR2V472MSEH
5600	63.5 × 150	20.4	0.15	4.20	LQR2V562MSEG
	76.2 × 110	19.7	0.15	4.20	LQR2V562MSEH
6800	63.5 × 170	23.5	0.15	4.62	LQR2V682MSEG
	76.2 × 130	22.9	0.15	4.62	LQR2V682MSEH
	90 × 100	22.5	0.15	4.62	LQR2V682MSEJ
8200	63.5 × 190	27.1	0.15	5.00	LQR2V822MSEG
	76.2 × 150	26.4	0.15	5.00	LQR2V822MSEH
10000	76.2 × 170	31.1	0.15	5.00	LQR2V103MSEH
	90 × 130	30.2	0.15	5.00	LQR2V103MSEJ
12000	76.2 × 190	35.7	0.15	5.00	LQR2V123MSEH
15000	90 × 190	40.5	0.15	5.00	LQR2V153MSEJ

V (code)	400V (2G)				
Surge	450V				
Cap. (μF)	Size φD × L(mm)	Rated ripple (Arms)	tan δ	Leakage Current (mA)	Code
680	35 × 80	3.2	0.15	1.56	LQR2G681MSEC
820	35 × 100	4.1	0.15	1.71	LQR2G821MSEC
1500	51 × 80	7.5	0.15	2.32	LQR2G152MSEF
1800	51 × 90	9.1	0.15	2.54	LQR2G182MSEF
2200	51 × 110	10.4	0.15	2.81	LQR2G222MSEF
2700	63.5 × 90	11.5	0.15	3.11	LQR2G272MSEG
3300	51 × 150	13.7	0.15	3.44	LQR2G332MSEF
	63.5 × 110	13.2	0.15	3.44	LQR2G332MSEG
3900	63.5 × 130	16.0	0.15	3.74	LQR2G392MSEG
	76.2 × 90	15.3	0.15	3.74	LQR2G392MSEH
4700	63.5 × 150	18.7	0.15	4.11	LQR2G472MSEG
	76.2 × 110	18.3	0.15	4.11	LQR2G472MSEH
5600	63.5 × 170	22.0	0.15	4.48	LQR2G562MSEG
	76.2 × 130	21.4	0.15	4.48	LQR2G562MSEH
6800	76.2 × 150	25.4	0.15	4.94	LQR2G682MSEH
8200	76.2 × 170	28.6	0.15	5.00	LQR2G822MSEH
	90 × 130	27.8	0.15	5.00	LQR2G822MSEJ
10000	90 × 150	32.7	0.15	5.00	LQR2G103MSEJ
12000	90 × 170	37.6	0.15	5.00	LQR2G123MSEJ
15000	90 × 220	43.0	0.15	5.00	LQR2G153MSEJ

V (code)	450V (2W)				
Surge	500V				
Cap. (μF)	Size φD × L(mm)	Rated ripple (Arms)	tan δ	Leakage Current (mA)	Code
680	35 × 100	3.5	0.15	1.65	LQR2W681MSEC
820	35 × 110	3.9	0.15	1.82	LQR2W821MSEC
1200	51 × 80	5.2	0.15	2.20	LQR2W122MSEF
1500	51 × 100	6.3	0.15	2.46	LQR2W152MSEF
1800	51 × 110	7.4	0.15	2.70	LQR2W182MSEF
	63.5 × 80	7.9	0.15	2.70	LQR2W182MSEG
2200	51 × 130	8.7	0.15	2.98	LQR2W222MSEF
	63.5 × 100	8.6	0.15	2.98	LQR2W222MSEG
2700	51 × 150	10.2	0.15	3.30	LQR2W272MSEF
	76.2 × 80	10.0	0.15	3.30	LQR2W272MSEH
3300	63.5 × 130	12.4	0.15	3.65	LQR2W332MSEG
	76.2 × 100	11.8	0.15	3.65	LQR2W332MSEH
3900	63.5 × 150	13.7	0.15	3.97	LQR2W392MSEG
	76.2 × 110	14.1	0.15	3.97	LQR2W392MSEH
	90 × 90	13.6	0.15	3.97	LQR2W392MSEJ
4700	63.5 × 170	16.5	0.15	4.36	LQR2W472MSEG
	76.2 × 130	16.3	0.15	4.36	LQR2W472MSEH
	90 × 110	15.8	0.15	4.36	LQR2W472MSEJ
5600	63.5 × 190	19.4	0.15	4.76	LQR2W562MSEG
	90 × 130	19.1	0.15	4.76	LQR2W562MSEJ
6800	76.2 × 170	23.3	0.15	5.00	LQR2W682MSEH
8200	90 × 150	26.1	0.15	5.00	LQR2W822MSEJ
10000	90 × 190	31.3	0.15	5.00	LQR2W103MSEJ
12000	90 × 220	35.5	0.15	5.00	LQR2W123MSEJ

Rated Ripple (Arms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Frequency (Hz)	60	120	360	1k	10k~
Coefficient	0.82	1.00	1.20	1.35	1.40