



Conductive Polymer Hybrid Capacitors



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2025
CAPACITOR
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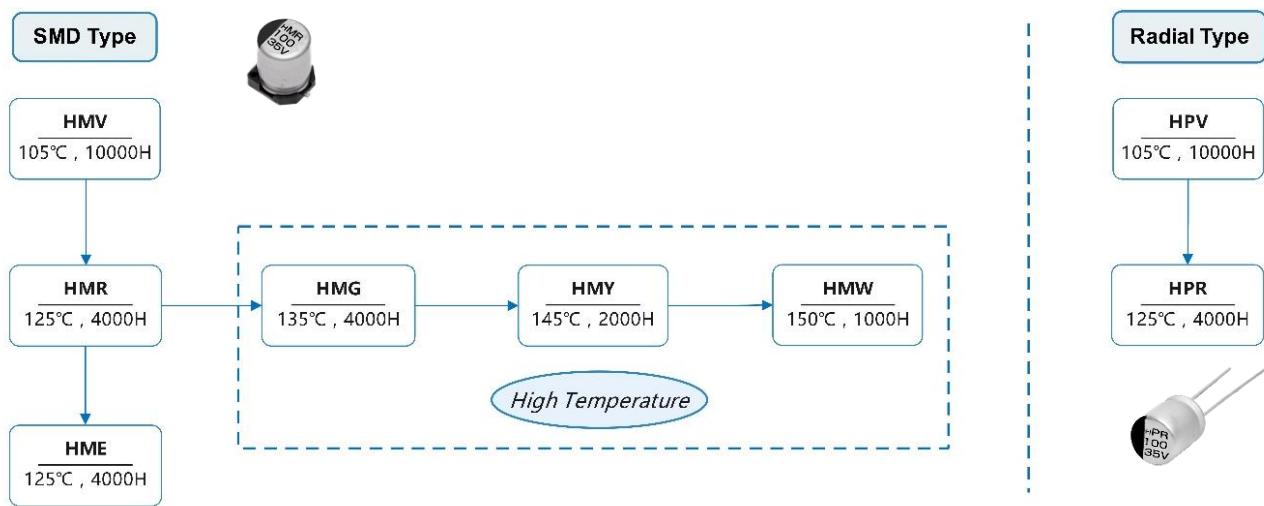
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● Conductive Polymer Hybrid Capacitors

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Product Group Chart

- **Conductive Polymer Hybrid Capacitors**



Capacitor Series Table

- **Conductive Polymer Hybrid Capacitors**

Series Name		Features	Endurance	Rated Voltage Range(V)	Capacitance Range(μF)	Page
SMD Type	HMV	Ultra Low ESR, Long Life	105°C, 5000~10000H	10~80	10~560	10
	HMR	High Temperature Usage,125°C	125°C, 4000H	16~80	10~820	13
	HME	125°C, Higher R.C.	125°C, 4000H	25~63	33~470	16
	HMG	High Temperature Usage,135°C	135°C, 4000H	25~63	22~560	18
	HMY	High Temperature Usage,145°C	145°C, 2000H	25~63	33~330	20
	HMW	High Temperature Usage,150°C	150°C, 1000H	25~63	33~270	22
Radial Type	HPV	Ultra Low ESR, Long Life	105°C, 10000H	16~80	22~560	24
	HPR	High Temperature Usage,125°C	125°C, 4000H	16~80	22~680	26

Taping Specifications for SMD type:

1. Carrier Tape

Fig. 1-1 $\phi D \leq 10$

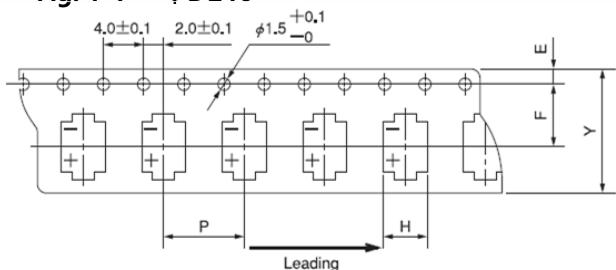
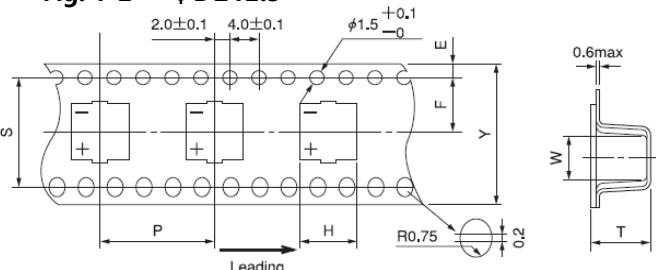


Fig. 1-2 $\phi D \geq 12.5$

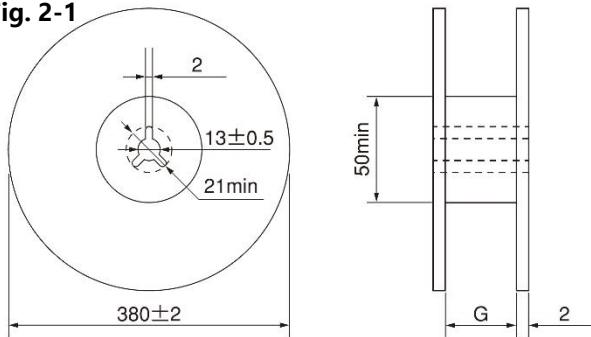


Unit: mm

Type	$\phi D \times L$	$Y \pm 0.3$	$H \pm 0.2$	$W \pm 0.2$	$P \pm 0.1$	$E \pm 0.1$	$F \pm 0.1$	$T \pm 0.2$	$S \pm 0.1$	Fig.No.						
SMD	$\phi 4 \times 5.4$	12.0	5.0	5.0	8.0	5.5	5.5	5.8	5.8	1-1						
	$\phi 4 \times 5.7/5.8$															
	$\phi 5 \times 5.4$		6.0	6.0												
	$\phi 5 \times 5.7/5.8$															
	$\phi 5 \times 7.0$															
	$\phi 6.3 \times 5.4$	16.0	7.0	7.0	12.0	7.5	7.5	5.8	5.8	1-1						
	$\phi 6.3 \times 5.7/5.8$															
	$\phi 6.3 \times 7.0/7.7$															
	$\phi 6.3 \times 8.7$															
	$\phi 8 \times 6.5$		8.7	8.7												
	$\phi 8 \times 10.5$	24.0			16.0	11.5	11.5	11.0	11.0	1-1						
	$\phi 8 \times 13$															
	$\phi 10 \times 7.7$	10.7	10.7													
	$\phi 10 \times 10.5$															
	$\phi 10 \times 13$															
	$\phi 12.5 \times 13.5$	32.0	13.7	13.7	24.0	14.2	14.2	14.5	28.5	1-2						
	$\phi 12.5 \times 16.0$															
Hybrid	$\phi 5 \times 6$	16.0	6.0	6.0	12.0	5.5	5.5	6.3	6.3	1-1						
	$\phi 6.3 \times 6$		7.0	7.0												
	$\phi 6.3 \times 7.7$															
	$\phi 8 \times 6.5$	24.0	8.7	8.7	16.0	7.5	7.5	8.3	8.3	1-1						
	$\phi 8 \times 10$															
	$\phi 10 \times 10.5$		10.7	10.7												
	$\phi 10 \times 12.5$															
	$\phi 10 \times 16.5$															

2. Reel Package

Fig. 2-1

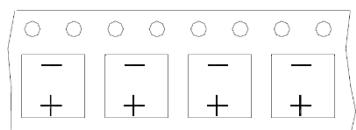


Unit: mm

Case size	G
Φ4~5	14
Φ6.3	18
Φ8×6.5	18
Φ8	26
Φ10	26
Φ12.5	34

Fig. 2-2

→ Pull out direction



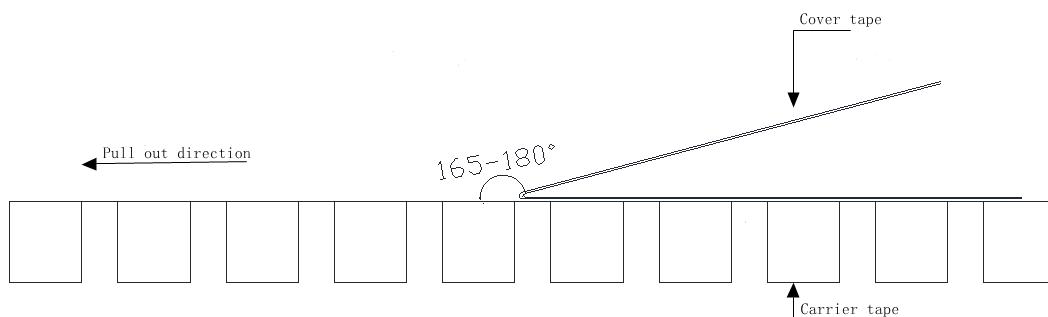
3.Sealing Tape Reel Strength

3.1 Peel angle: 165 to 180° referred to the surface on which the tape is glued.

3.2 Peel speed: 300mm per minutes

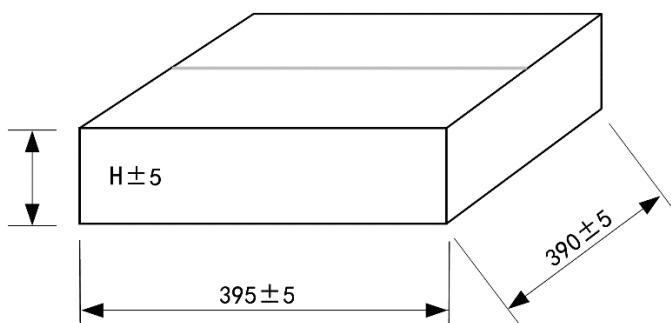
3.3 The peel strength must be 0.1 ~ 0.7N under these conditions.

Fig. 3-1



4. Package Quantity

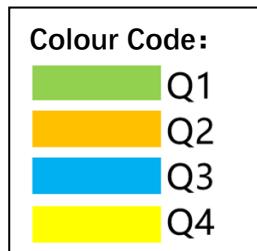
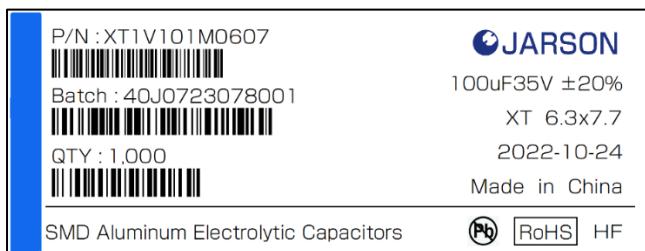
Fig. 4-1



Case size	pcs/reel	reels/Box	pcs/Box
Φ4	2,000	10	20,000
Φ5	1,000	10	10,000
Φ6.3	1,000	10	10,000
Φ8×6.5	1,000	10	10,000
Φ8×10.5	500	10	5,000
Φ8×13	400	10	4,000
Φ10×7.7~10.5	500	10	5,000
Φ10×12.8~13	400	10	4,000
Φ10×16.5	300	10	3,000
Φ12.5×13.5	200	8	1,600
Φ12.5×16	200	8	1,600

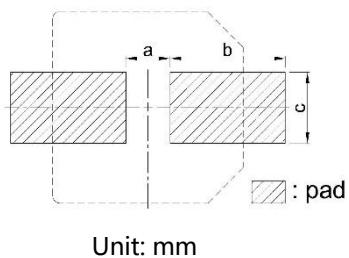
Case size	Φ4~Φ5	Φ6.3, Φ8×6.5	Φ8~Φ12.5
H	205	245	325

Fig. 4-2 Label: 105mm × 38mm



Reflow Conditions for SMD type

1. Recommended pad pattern and size

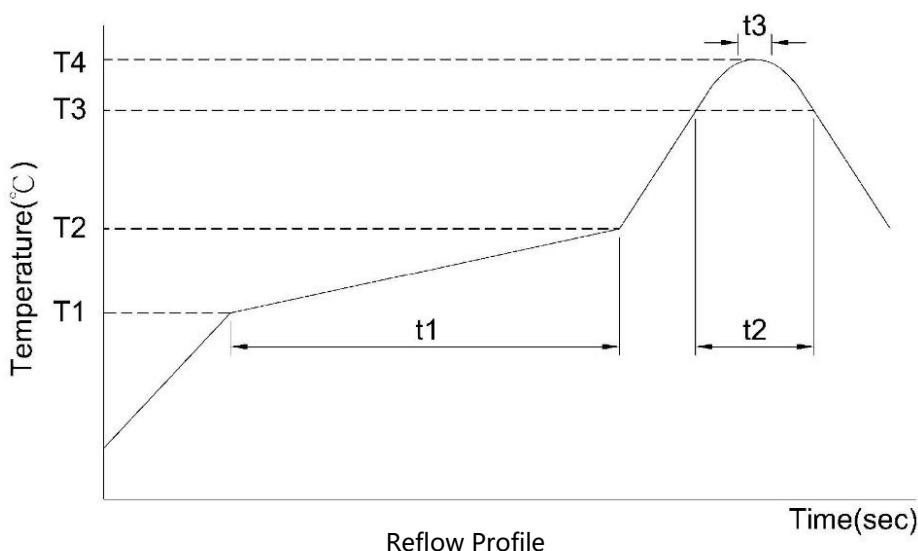


Case size	Land size		
	a	b	c
Φ4	1.0	2.6	1.8
Φ5	1.4	3.0	1.8
Φ6.3	1.9	3.5	1.8
Φ8	3.0	4.0	2.5
Φ10	4.0	4.0	2.5
Φ12.5	4.0	6.0	3.0

2. Recommended Soldering Methods

2.1 Solder iron method: Bit temperature: $350 \pm 5^\circ\text{C}$, Application time of soldering Iron: $3 +1/-0$ sec

2.2 Reflow Soldering (Pb-free) :



Rated voltage (V)		4~50	≥ 63	4~100	≥ 160
Case size (Φ)		4~6.3	4~6.3	8~18	6.3~18
Preheat	Temp. (T1~T2, °C)	150~180			
	Time (t1) (Max, secs)	100			
Duration	Temp. (T3, °C)	217	230	217	217
	Time (t2) (Max, secs)	90	40	60	60
Peak	Temp. (T4, °C)	260		250	250
	Time (t3, secs)	5			
Reflow cycles		≤ 2			

※Please contact our representative if your condition is higher.

※Please ensure that the capacitor became cold enough to the room temperature ($5\sim 35^\circ\text{C}$) before the second reflow.

Do not attempt to reflow three times.

Precautions and Guidelines for Using Aluminum Electrolytic Capacitors and Conductive Polymer Hybrid Capacitors

1. Guidelines for Circuit Design

(1) Polarity

Aluminum electrolytic capacitors are polarized. Make sure of the polarity, if used in reverse polarity, the circuit life may be shortened or the capacitor may be damaged. When the polarity in a circuit sometimes can be reversed or unknown, a bi-polar capacitor shall be used. Also, note that DC capacitors cannot be used for AC application.

(2) Operating Voltage

Do not apply DC voltage, which exceeds the rated voltage of the capacitor and not be reverse voltage. If a voltage exceeding the capacitor' s voltage rating is applied, the capacitor may be damaged as leakage current increase.

Using capacitors at recommended working voltage prolongs capacitor life. The surge voltage rating is the maximum DC over-voltage to which the capacitors may be subjected of short periods.

(3) Ripple Current

The combined value of DC voltage and the peak AC voltage shall not exceed the rated voltage. When an excessive ripple current passes, the capacitor may be damaged with the vent operating, etc. Use the electrolytic capacitor within the permissible ripple range current at specified frequency and temperature.

(4) Operating Temperature

Use the capacitors according to the specified operating temperature range. If used the capacitor outside the maximum rated temperature will considerably shorten the life or cause the capacitor to vent. Usage at room ambient will ensure longer life.

(5) Leakage Current

The leakage current shall be within specified levels. When capacitors are applied at a lower voltage, the actual leakage current will be reduced proportionately.

(6) Charge and Discharge

The capacitor is not suitable for a circuit in which charge and discharge are frequently repeated. The capacitance value may drop by forming oxide layer on the cathode foil, or the capacitor may be damaged by generating heat due to continuous rapid charge and discharge.

(7) Surge Voltage

The Surge voltage rating is referred as the maximum DC overvoltage that may be applied to an electrolytic capacitor for a short time. Unless otherwise described on the catalogue or product specifications, please do not apply a voltage exceeding the capacitor' s voltage rating. The rated surge voltages corresponding to rated voltages of electrolytic capacitor are presented as follows:

Rated Voltage (V)	4	6.3	10	16	25	35	50	63	80	100
Surge Voltage (V)	4.6	7.3	11.5	18.4	28.8	40.3	57.5	72.5	92	115
Rated Voltage (V)	160	180	200	250	315	350	400	420	450	500
Surge Voltage (V)	184	207	230	288	347	385	440	462	495	550

(8) Condition of Use

(a) The capacitors shall not be exposed to water, saltwater spray, oil or fumes, high humidity or humidity condensation and direct sunlight.

(b) Ambient conditions that include hazardous gases / fumes such as hydrogen sulfide, sulfuric acid, nitrous acid, chlorine or bromine gas, ammonia, etc.

(c) Exposed to ozone, ultraviolet rays and radiation.

(d) Severe vibration or physical shock that exceeds the condition in specification sheets.

(9) Consideration to Circuit Design

- (a) Please make sure the application and mounting conditions that the capacitor will be used are within the conditions specified in the catalog. If the conditions are beyond the conditions specified in the catalog, please contact us.
- (b) Do not design a circuit board so that heat-generating components are places near an aluminum electrolytic capacitor or reverse side of PCB. A cooling system is recommended.
- (c) Operating temperature, applied voltage and ripple current shall be within specification. The ambient temperature shall not exceed the operating temperature and applied ripple current shall not exceed the allowable ripple current specified in the specification.
- (d) Performances of electrical characteristics of aluminum electrolytic capacitors are affected by variation of operating temperature and frequency. Consider this variation designing the circuit.
- (e) When two or more aluminum capacitors are connected in parallel, consider the current balance that flow through the capacitors.
- (f) If more than two capacitors are connected in series, make sure the applied voltage will be lower than the rated voltage and that voltage will be applied to each equally using a balancing resistor in parallel with each capacitor.
- (g) Do not tilt lay down or twist the capacitor' s body after the capacitor is soldered to the PCB.

2. Caution for Assembling Capacitors

(1) Mounting

- (a) Aluminum electrolytic capacitors cannot be re-used once the capacitor has assembled in the set and power applied.
- (b) Aluminum electrolytic capacitors may have electrical potential between positive and negative terminal, please discharge through a $1\text{K}\Omega$ resistor before use.
- (c) Please confirm the rated voltage before mounting.
- (d) Please confirm the polarity before mounting.
- (e) Do not use the capacitor that once dropped on the hard floor.
- (f) Do not damage the capacitor while mounting.
- (g) Capacitors shall be mounted that hold spacing on PCB matches the lead pitch of the capacitors.
- (h) During the auto-insertion process and parts inspection, capacitors shall avoid the excessive force and shock.
- (i) Do not design to locate any wiring or circuit around the capacitor' s pressure relief vent. The following clearance should be made above the pressure relief vent. The pressure relief vent will not open without the appropriate free space.

Case Diameter	$\phi 6.3 \sim \phi 16$	$\phi 18 \sim \phi 35$
Clearance(mm)	2 mm	3 mm

(2) Soldering

- (a) Be careful of temperature and time when soldering. Dip of flow soldering of the capacitors should be limited at less than $260 \pm 5^\circ\text{C}$ and 10 ± 1 seconds or soldering iron with $350 \pm 10^\circ\text{C}$ for $3+1/-0$ seconds . Do not dip capacitor' s body into melted solder.
- (b) High humidity will affect the solder ability of lead wire and terminals. High temperature will reduce long-term operating life.
- (c) Except SMD type, reflow soldering cannot be used for any types of aluminum electrolytic capacitors. When using SMD type capacitor, please check the reflow profile. The temperature and duration shall not exceed the specified

temperature and duration in the specification. If the temperature or duration is higher than the value specified, please consult us before usage.

(d) Standard aluminum electrolytic capacitors cannot withstand more than 2 reflow process. Please consult our engineering department when needed.

(3) Cleaning Circuit Boards After Soldering

Do not use following chemicals for cleaning: Solvent containing halogen ions, Alkaline solvent, Xylene, Acetone, Terpene, petro-based solvent.

3. Maintenance Inspection

Periodical inspection is necessary for using the aluminum capacitors with industrial equipment. The following items should be checked:

(1) Appearance: Bloated, vent operation, leaking electrolyte, etc.

(2) Electrical characteristic: Capacitance, dissipation factor, leakage current, and other specified items listed in specification. We recommend replacing the capacitors if the parts are out of specification.

4. Storage

(1) Aluminum electrolytic capacitor should not be stored in high temperature or high humidity condition. The suitable condition is 5°C ~ 35°C and less than 75% in relative humidity indoor.

(2) Do not store the capacitors in damp conditions such as water, brine or oil.

(3) Do not store the capacitors that exposed to hazardous gas such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonium, etc.

(4) Do not store the capacitors that exposed to ozone, ultraviolet rays or radiation.

(5) Do not expose the capacitors to acidic or alkaline solutions.

5. Disposal

Please consult with a local industrial waste disposal specialist when disposing of aluminum electrolytic capacitors.

6. Environmental Consideration

We already have received ISO 14001 certificate. Cadmium (Cd), Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr+6), PBB, PBDE, DEHP, BBP, DBP and DIBP have never been using in capacitor. All the capacitors are Halogen-free products, please consult with us.

Part Number System - Conductive Polymer Hybrid Capacitors

e.g.: Product 100μF /35V, ±20%, 6.3x7.7, HMR series (P/N: HMR1V101M0607)

Conductive Polymer Hybrid Capacitors	HMR series	35V	100μF	±20 %	6.3 φ X7.7L
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H	MR	1V	101	M	0607
Product category	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size

Series name	Rated voltage (V)	Code	Cap. (μF)	Code	Capacitance tolerance	Code	Case Size (φ x L)	Code
HMV	10	1A	10	100	±20%	M	5x6	0506
HMR	16	1C	22	220	±10%	K	6.3x6	0606
HME	25	1E	27	270			6.3x7.7	0607
HMG	35	1V	33	330			8x6.5	0806
HMY	50	1H	47	470			8x10	0810
HMW	63	1J	56	560			10x10.5	1010
	80	1K	68	680			10x12.5	1013
			82	820			10x16.5	1016
			100	101				
			150	151				
			180	181				
			220	221				
			270	271				
			330	331				
			470	471				
			560	561				
			680	681				
			820	821				

※For Vibration resistant structure, the Part Number is appended with "v" at the end.

HMV Series

Features

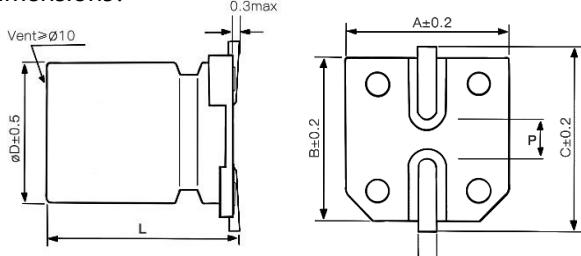
- $\phi 5 \sim \phi 10, 105^\circ\text{C}, 5000 \sim 10000$ hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Vibration resistant structure
- RoHS 2.0 compliant, 247 SVHC & REACH compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information



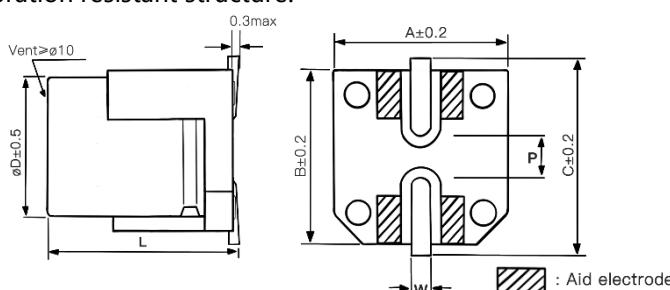
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Specifications													
Category temp. range	-55°C to $+105^\circ\text{C}$												
Capacitance tolerance	$\pm 20\%$ (120 Hz / $+20^\circ\text{C}$)												
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)												
Tan δ	Please see the attached characteristics list												
Characteristics at low temperature	Rated voltage (V)	10	16	25	35	50	63						
	$Z(-25^\circ\text{C})/Z(+20^\circ\text{C})$	2.0	2.0	2.0	2.0	2.0	2.0						
	$Z(-55^\circ\text{C})/Z(+20^\circ\text{C})$	2.5	2.5	2.5	2.5	2.5	2.5						
Endurance	After applying rated working voltage and rated ripple current for 5000/10000 hours at $+105^\circ\text{C} \pm 2^\circ\text{C}$, and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Test Time	$5 \phi \times 6 L, 6.3 \phi \times 6 L, : 5000H$ $6.3 \phi \times 7.7L, \phi D \geq 8mm: 10000H$											
	Capacitance change	Within $\pm 30\%$ of the initial value											
	Dissipation factor (tan δ)	Less than 200% of the initial value											
	ESR	Less than 200% of the initial value											
	Leakage current	Within the initial limit											
Shelf life	After storage for 1000 h at $+105^\circ\text{C} \pm 2^\circ\text{C}$ with no voltage applied and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the limits specified in endurance.												
Resistance to soldering heat	After reflow soldering and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 10\%$ of the initial value											
	Dissipation factor (tan δ)	Within the initial limit											
	ESR	Within the initial limit											
Frequency correction factor for ripple current	Frequency	120 $\leq f < 1k$	1k $\leq f < 10k$	10k $\leq f < 100k$	100k $\leq f < 500k$								
	Correction Factor	0.1	0.3	0.6	1.0								

Dimensions:

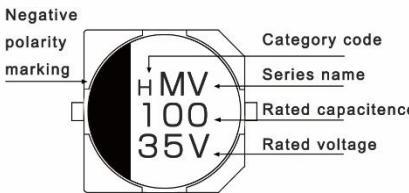


Vibration resistant structure:



Dimensions						
ϕD	L	A	B	C	W	P ± 0.2
5	6 ± 0.5	5.3	5.3	6.0	0.5 ~ 0.8	1.4
6.3	6 ± 0.5	6.6	6.6	7.3	0.5 ~ 0.8	2.0
6.3	7.7 ± 0.5	6.6	6.6	7.3	0.5 ~ 0.8	2.0
8	10 ± 0.5	8.3	8.3	9.1	0.7 ~ 1.3	3.1
10	10.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4

Marking:



Part Number System:

Conductive Polymer
Hybrid Capacitors HMV series 25V 100μF ±20 % 6.3 φ x7.7L

H MV 1E 101 M 0607

Product category	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size
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Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel MPQ (pcs/reel)
		øD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	tan δ③		
10	100	5	6	800	80	0.18	HMV1A101M0506	1000
16	22	5	6	800	80	0.16	HMV1C220M0506	1000
	47	6.3	6	1300	50	0.16	HMV1C470M0606	1000
	82	6.3	6	1300	50	0.16	HMV1C820M0606	1000
	100	6.3	6	1300	50	0.16	HMV1C101M0606	1000
	150	6.3	7.7	2000	30	0.16	HMV1C151M0607	1000
	180	6.3	7.7	2000	30	0.16	HMV1C181M0607	1000
	270	8	10	2300	27	0.16	HMV1C271M0810	500
	330	8	10	2300	27	0.16	HMV1C331M0810	500
	470	10	10.5	2500	20	0.16	HMV1C471M1010	500
	560	10	10.5	2500	20	0.16	HMV1C561M1010	500
25	22	5	6	800	80	0.14	HMV1E220M0506	1000
	33	5	6	800	80	0.14	HMV1E330M0506	1000
	47	6.3	6	1300	50	0.14	HMV1E470M0606	1000
	56	6.3	6	1300	50	0.14	HMV1E560M0606	1000
	68	6.3	7.7	2000	30	0.14	HMV1E680M0607	1000
	100	6.3	7.7	2000	30	0.14	HMV1E101M0607	1000
	150	8	10	2300	27	0.14	HMV1E151M0810	500
	220	8	10	2300	27	0.14	HMV1E221M0810	500
	330	10	10.5	2500	20	0.14	HMV1E331M1010	500
	470	10	12.5	2900	16	0.14	HMV1E471M1013	400
35	10	5	6	800	80	0.12	HMV1V100M0506	1000
	22	5	6	800	80	0.12	HMV1V220M0506	1000
	27	6.3	6	1300	60	0.12	HMV1V270M0606	1000
	33	6.3	6	1300	60	0.12	HMV1V330M0606	1000
	47	6.3	6	1300	60	0.12	HMV1V470M0606	1000
		6.3	7.7	2000	35	0.12	HMV1V470M0607	1000
	68	6.3	7.7	2000	35	0.12	HMV1V680M0607	1000
	100	8	10	2300	27	0.12	HMV1V101M0810	500
	150	8	10	2300	27	0.12	HMV1V151M0810	500
	220	10	10.5	2500	20	0.12	HMV1V221M1010	500
	270	10	10.5	2500	20	0.12	HMV1V271M1010	500
	330	10	12.5	2900	16	0.12	HMV1V331M1013	400

① Rated ripple current (100kHz / +105°C) ② ESR (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

Characteristics list

Rated voltage (V)	Capacitance ($\pm 20\%$) (μF)	Case size		Specification			Part Number ^④	Taping&Reel
		ϕD (mm)	L (mm)	Rated ripple current ^① (mA rms)	Imp. ^② (Ω)	$\tan \delta$ ^③		MPQ (pcs/reel)
50	10	6.3	6	1100	80	0.10	HMV1H100M0606	1000
	22	6.3	6	1100	80	0.10	HMV1H220M0606	1000
		6.3	7.7	1600	40	0.10	HMV1H220M0607	1000
	33	6.3	7.7	1600	40	0.10	HMV1H330M0607	1000
		8	10	1800	30	0.10	HMV1H330M0810	500
	47	8	10	1800	30	0.10	HMV1H470M0810	500
	68	8	10	1800	30	0.10	HMV1H680M0810	500
63	100	10	10.5	2000	28	0.10	HMV1H101M1010	500
	10	6.3	6	1000	120	0.08	HMV1J100M0606	1000
		6.3	7.7	1500	80	0.08	HMV1J100M0607	1000
	22	6.3	7.7	1500	80	0.08	HMV1J220M0607	1000
		8	10	1700	40	0.08	HMV1J220M0810	500
	27	8	10	1700	40	0.08	HMV1J270M0810	500
	33	8	10	1700	40	0.08	HMV1J330M0810	500
	47	8	10	1700	40	0.08	HMV1J470M0810	500
	56	10	10.5	1800	30	0.08	HMV1J560M1010	500
	68	10	10.5	1800	30	0.08	HMV1J680M1010	500
80	82	10	10.5	1800	30	0.08	HMV1J820M1010	500
	100	10	12.5	2000	27	0.08	HMV1J101M1013	400
	22	8	10	1550	45	0.08	HMV1K220M0810	500
	33	10	10.5	1700	36	0.08	HMV1K330M1010	500
	47	10	10.5	1700	36	0.08	HMV1K470M1010	500

① Rated ripple current (100kHz / +105°C) ② ESR (100kHz / +20°C) ③ $\tan \delta$ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

HMR Series

Features

- $\phi 6.3 \sim \phi 10, 125^\circ\text{C}, 4000$ hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Vibration resistant structure
- RoHS 2.0 compliant, 247 SVHC & REACH compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information

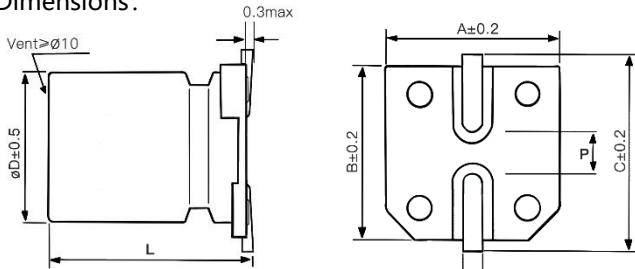


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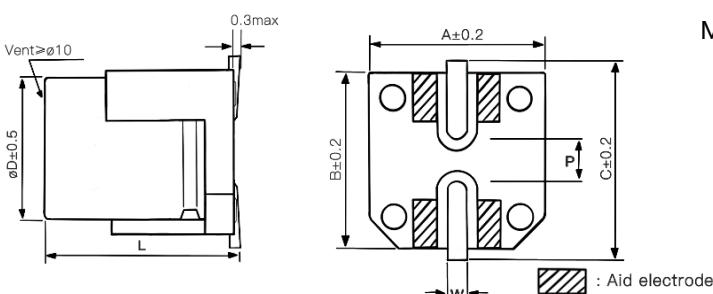
Specifications

Category temp. range	-55°C to +125°C												
Capacitance tolerance	$\pm 20\%$ (120 Hz / +20 °C)												
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)												
Tan δ	Please see the attached characteristics list												
Characteristics at low temperature	Rated voltage (V)	16	25	35	50	63	80						
	Z (-25 °C) / Z (+20 °C)	2.0	2.0	2.0	2.0	2.0	2.0						
	Z (-55 °C) / Z (+20 °C)	2.5	2.5	2.5	2.5	2.5	2.5						
Endurance	After applying rated working voltage and rated ripple current for 4000 hours at $+125^\circ\text{C} \pm 2^\circ\text{C}$, and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 30\%$ of the initial value											
	Dissipation factor (tan δ)	Less than 200% of the initial value											
	ESR	Less than 200% of the initial value											
	Leakage current	Within the initial limit											
Shelf life	After storage for 1000 h at $+125^\circ\text{C} \pm 2^\circ\text{C}$ with no voltage applied and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the limits specified in endurance.												
Resistance to soldering heat	After reflow soldering and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 10\%$ of the initial value											
	Dissipation factor (tan δ)	Within the initial limit											
	ESR	Within the initial limit											
	Leakage current	Within the initial limit											
Frequency correction factor for ripple current	Frequency	120 $\leq f < 1\text{k}$		1k $\leq f < 10\text{k}$		10k $\leq f < 100\text{k}$							
	Correction Factor	0.1		0.3		0.6							
100k $\leq f < 500\text{k}$													

Dimensions:

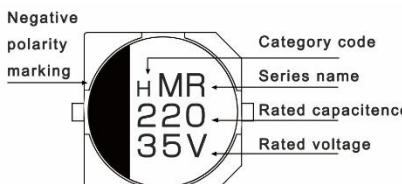


Vibration resistant structure:



Dimensions							Unit: mm
Ø D	L	A	B	C	W	P ± 0.2	
6.3	6 ± 0.5	6.6	6.6	7.3	0.5 ~ 0.8	2.0	
6.3	7.7 ± 0.5	6.6	6.6	7.3	0.5 ~ 0.8	2.0	
8	6.5 ± 0.5	8.3	8.3	9.1	0.7 ~ 1.3	3.1	
8	10 ± 0.5	8.3	8.3	9.1	0.7 ~ 1.3	3.1	
10	10.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4	
10	12.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4	

Marking:



Part Number System:

Conductive Polymer
Hybrid Capacitors HMR series 35V 100μF ±20 % 6.3 φ x7.7L

H MR 1V 101 M 0607

Product category	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size
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Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel
		øD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	tan δ③		MPQ (pcs/reel)
16	82	6.3	6	900	50	0.16	HMR1C820M0606	1000
	100	6.3	6	900	50	0.16	HMR1C101M0606	1000
	150	6.3	7.7	1400	30	0.16	HMR1C151M0607	1000
	220	6.3	7.7	1400	30	0.16	HMR1C221M0607	1000
	270	8	10	1600	27	0.16	HMR1C271M0810	500
	470	10	10.5	2000	20	0.16	HMR1C471M1010	500
	560	10	10.5	2000	20	0.16	HMR1C561M1010	500
		10	12.5	2550	18	0.16	HMR1C561M1013	400
	820	10	10.5	2000	20	0.16	HMR1C821M1010	500
		10	12.5	2800	18	0.16	HMR1C821M1013	400
25	33	6.3	6	900	50	0.14	HMR1E330M0606	1000
	47	6.3	6	900	50	0.14	HMR1E470M0606	1000
	56	6.3	6	900	50	0.14	HMR1E560M0606	1000
	68	6.3	6	900	50	0.14	HMR1E680M0606	1000
		6.3	7.7	1400	30	0.14	HMR1E680M0607	1000
	100	6.3	7.7	1400	30	0.14	HMR1E101M0607	1000
	150	6.3	7.7	1400	30	0.14	HMR1E151M0607	1000
		8	10	1600	27	0.14	HMR1E151M0810	500
	220	8	10	1600	27	0.14	HMR1E221M0810	500
	270	8	10	1600	27	0.14	HMR1E271M0810	500
	330	8	10	1600	27	0.14	HMR1E331M0810	500
		10	10.5	2000	20	0.14	HMR1E331M1010	500
	470	10	10.5	2000	20	0.14	HMR1E471M1010	500
	680	10	12.5	2800	15	0.14	HMR1E681M1013	400
35	33	6.3	6	900	60	0.12	HMR1V330M0606	1000
	47	6.3	6	900	60	0.12	HMR1V470M0606	1000
	68	6.3	7.7	1400	35	0.12	HMR1V680M0607	1000
	100	6.3	7.7	1400	35	0.12	HMR1V101M0607	1000
		8	6.5	1400	35	0.12	HMR1V101M0806	1000
		8	10	1600	27	0.12	HMR1V101M0810	500
	150	8	10	1600	27	0.12	HMR1V151M0810	500
	180	8	10	1600	27	0.12	HMR1V181M0810	500
	220	10	10.5	2000	20	0.12	HMR1V221M1010	500
	270	10	10.5	2000	20	0.12	HMR1V271M1010	500
	330	10	10.5	2000	20	0.12	HMR1V331M1010	500
	470	10	12.5	2800	16	0.12	HMR1V471M1013	400

① Rated ripple current (100kHz / +125°C) ② ESR (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

Characteristics list

Rated voltage (V)	Capacitance ($\pm 20\%$) (μF)	Case size		Specification			Part Number④	Taping&Reel MPQ (pcs/reel)
		ϕD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	$\tan \delta$ ③		
50	22	6.3	6	750	80	0.10	HMR1H220M0606	1000
	33	6.3	7.7	1100	40	0.10	HMR1H330M0607	1000
	47	8	10	1250	30	0.10	HMR1H470M0810	500
	68	8	10	1250	30	0.10	HMR1H680M0810	500
	100	8	10	1250	30	0.10	HMR1H101M0810	500
		10	10.5	1600	28	0.10	HMR1H101M1010	500
	120	10	10.5	1600	28	0.10	HMR1H121M1010	500
	150	10	10.5	1600	28	0.10	HMR1H151M1010	500
	220	10	12.5	1800	23	0.10	HMR1H221M1013	400
63	10	6.3	6	700	120	0.08	HMR1J100M0606	1000
	22	6.3	7.7	900	80	0.08	HMR1J220M0607	1000
	33	8	10	1100	40	0.08	HMR1J330M0810	500
	47	8	10	1100	40	0.08	HMR1J470M0810	500
	56	10	10.5	1400	30	0.08	HMR1J560M1010	500
	68	10	10.5	1400	30	0.08	HMR1J680M1010	500
	82	10	10.5	1400	30	0.08	HMR1J820M1010	500
	100	10	10.5	1400	30	0.08	HMR1J101M1010	500
	120	10	12.5	1600	26	0.08	HMR1J121M1013	400
80	22	8	10	1050	45	0.08	HMR1K220M0810	500
	33	8	10	1050	45	0.08	HMR1K330M0810	500
		10	10.5	1350	36	0.08	HMR1K330M1010	500
	47	10	10.5	1350	36	0.08	HMR1K470M1010	500
	56	10	12.5	1550	32	0.08	HMR1K560M1013	400

① Rated ripple current (100kHz / +105°C) ② ESR (100kHz / +20°C) ③ $\tan \delta$ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

HME Series

Features

- $\phi 6.3 \sim \phi 10, 125^\circ\text{C}, 4000$ hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Vibration resistant structure
- RoHS 2.0 compliant, 247 SVHC & REACH compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information

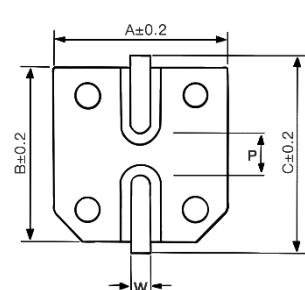
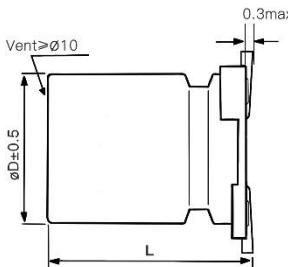


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Specifications

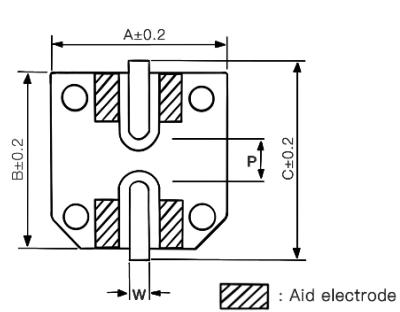
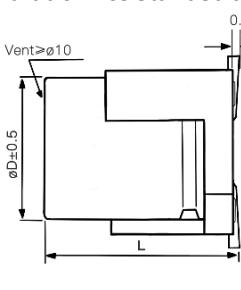
Category temp. range	-55°C to +125°C								
Capacitance tolerance	$\pm 20\%$ (120 Hz / +20 °C)								
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)								
Tan δ	Please see the attached characteristics list								
Characteristics at low temperature	Rated voltage (V)	25	35	50	63				
	Z (-25 °C) / Z (+20 °C)	2.0	2.0	2.0	2.0				
	Z (-55 °C) / Z (+20 °C)	2.5	2.5	2.5	2.5				
Endurance	After applying rated working voltage and rated ripple current for 4000 hours at $+125^\circ\text{C} \pm 2^\circ\text{C}$, and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.								
	Capacitance change	Within $\pm 30\%$ of the initial value							
	Dissipation factor (tan δ)	Less than 200% of the initial value							
	ESR	Less than 200% of the initial value							
	Leakage current	Within the initial limit							
Shelf life	After storage for 1000 h at $+125^\circ\text{C} \pm 2^\circ\text{C}$ with no voltage applied and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the limits specified in endurance.								
Resistance to soldering heat	After reflow soldering and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.								
	Capacitance change	Within $\pm 10\%$ of the initial value							
	Dissipation factor (tan δ)	Within the initial limit							
	ESR	Within the initial limit							
	Leakage current	Within the initial limit							
Frequency correction factor for ripple current	Frequency	120 $\leq f < 1\text{k}$	1k $\leq f < 10\text{k}$	10k $\leq f < 100\text{k}$	100k $\leq f < 500\text{k}$				
	Correction Factor	0.1	0.3	0.6	1.0				

Dimensions:

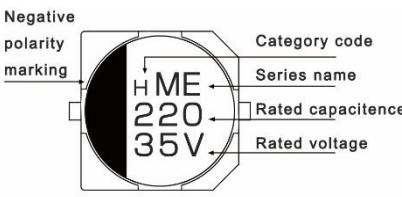


Dimensions						
φ D	L	A	B	C	W	Unit: mm
6.3	7.7±0.5	6.6	6.6	7.3	0.5~0.8	2.0
8	10±0.5	8.3	8.3	9.1	0.7~1.3	3.1
10	10.5±0.5	10.3	10.3	11.1	0.7~1.3	4.4
10	12.5±0.5	10.3	10.3	11.1	0.7~1.3	4.4

Vibration resistant structure:



Marking:



Part Number System:

Conductive Polymer
Hybrid Capacitors HME series 25V 220μF ±20 % 8 φ x10L

H ME 1E 221 M 0810

Product category	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size
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Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel MPQ (pcs/reel)
		øD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	tan δ③		
25	150	6.3	7.7	1800	30	0.14	HME1E151M0607	1000
	220	8	10	2900	22	0.14	HME1E221M0810	500
	330	10	10.5	3500	16	0.14	HME1E331M1010	500
	470	10	12.5	4000	14	0.14	HME1E471M1013	400
35	100	6.3	7.7	1700	35	0.12	HME1V101M0607	1000
	150	8	10	2900	22	0.12	HME1V151M0810	500
	220	10	10.5	3400	20	0.12	HME1V221M1010	500
	270	10	10.5	3500	16	0.12	HME1V271M1010	500
50	68	8	10	2700	25	0.10	HME1H680M0810	500
	100	10	10.5	2900	23	0.10	HME1H101M1010	500
	120	10	10.5	2900	23	0.10	HME1H121M1010	500
	150	10	12.5	3500	17	0.10	HME1H151M1013	400
63	33	8	10	2400	32	0.08	HME1J330M0810	500
	47	8	10	2400	32	0.08	HME1J470M0810	500
	68	10	10.5	2800	25	0.08	HME1J680M1010	500
	82	10	10.5	2800	25	0.08	HME1J820M1010	500
	100	10	12.5	3200	20	0.08	HME1J101M1013	400

① Rated ripple current (100kHz / +125°C) ② ESR (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

HMG Series

Features

- $\phi 8 \sim \phi 10, 135^\circ\text{C}, 4000$ hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Vibration resistant structure
- RoHS 2.0 compliant, 247 SVHC & REACH compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information

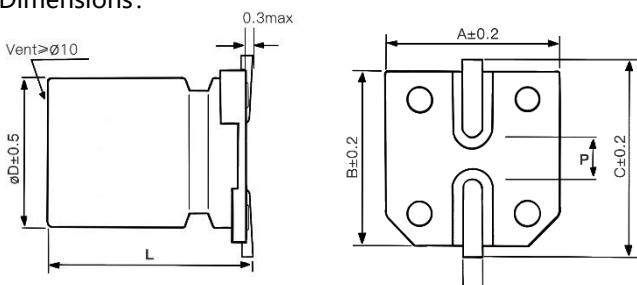


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Specifications

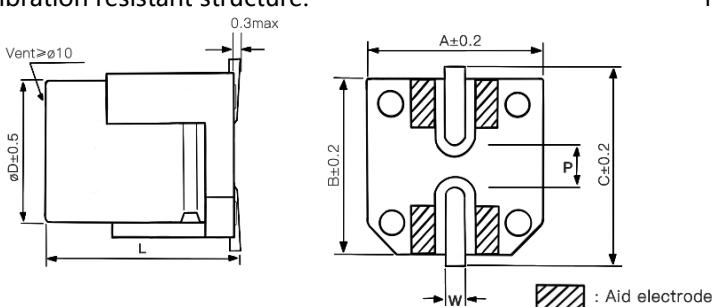
Category temp. range	-55°C to +135°C								
Capacitance tolerance	$\pm 20\%$ (120 Hz / +20 °C)								
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)								
Tan δ	Please see the attached characteristics list								
Characteristics at low temperature	Rated voltage (V)	25	35	50	63				
	Z (-25 °C) / Z (+20 °C)	2.0	2.0	2.0	2.0				
	Z (-55 °C) / Z (+20 °C)	2.5	2.5	2.5	2.5				
Endurance	After applying rated working voltage and rated ripple current for 4000 hours at +135 °C/+125 °C ± 2 °C, and then being stabilized at +20 °C, capacitors shall meet the following limits.								
	Capacitance change	Within ±30% of the initial value							
	Dissipation factor (tan δ)	Less than 200% of the initial value							
	ESR	Less than 200% of the initial value							
	Leakage current	Within the initial limit							
Shelf life	After storage for 1000 h at +135 °C ± 2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance.								
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.								
	Capacitance change	Within ±10% of the initial value							
	Dissipation factor (tan δ)	Within the initial limit							
	ESR	Within the initial limit							
Frequency correction factor for ripple current	Leakage current	Within the initial limit							
	Frequency	120 ≤ f < 1k	1k ≤ f < 10k	10k ≤ f < 100k	100k ≤ f < 500k				
	Correction Factor	0.1	0.3	0.6	1.0				

Dimensions:

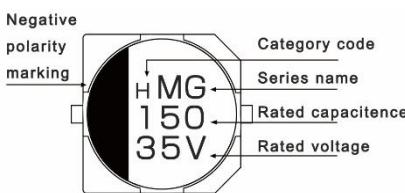


Dimensions						
φ D	L	A	B	C	W	P ± 0.2
8	10 ± 0.5	8.3	8.3	9.1	0.7 ~ 1.3	3.1
10	10.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4
10	12.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4
10	16.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4

Vibration resistant structure:



Marking:



Part Number System:

Conductive Polymer
Hybrid Capacitors HMG series 25V 220μF ±20 % 8 φ x10L

H MG 1E 221 M 0810

Product category	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size
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Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel MPQ (pcs/reel)	
		øD (mm)	L (mm)	Rated ripple current① (mA rms)		ESR② (mΩ)	tan δ③		
				Endurance1 (+135°C)	Endurance2 (+145°C)				
25	220	8	10	2900	1600	27	0.14	HMG1E221M0810 500	
	330	10	10.5	3300	2000	20	0.14	HMG1E331M1010 500	
	470	10	12.5	3500	2300	16	0.14	HMG1E471M1013 400	
	560	10	16.5	4000	2900	11	0.14	HMG1E561M1016 250	
35	150	8	10	2900	1600	27	0.12	HMG1V151M0810 500	
	220	10	10.5	3300	2000	20	0.12	HMG1V221M1010 500	
	270	10	10.5	3300	2000	20	0.12	HMG1V271M1010 500	
	330	10	12.5	3500	2300	16	0.12	HMG1V331M1013 400	
	470	10	16.5	4000	2900	11	0.12	HMG1V471M1016 250	
50	33	8	10	2200	1250	30	0.10	HMG1H330M0810 500	
	47	8	10	2200	1250	30	0.10	HMG1H470M0810 500	
	68	8	10	2200	1250	30	0.10	HMG1H680M0810 500	
	100	10	10.5	2600	1600	28	0.10	HMG1H101M1010 500	
	120	10	10.5	2600	1600	28	0.10	HMG1H121M1010 500	
	150	10	12.5	3200	2000	18	0.10	HMG1H151M1013 400	
	220	10	16.5	3700	2600	13	0.10	HMG1H221M1016 250	
63	22	8	10	1900	1100	40	0.08	HMG1J220M0810 500	
	33	8	10	1900	1100	40	0.08	HMG1J330M0810 500	
	47	8	10	1900	1100	40	0.08	HMG1J470M0810 500	
	56	10	10.5	2300	1400	30	0.08	HMG1J560M1010 500	
	68	10	10.5	2300	1400	30	0.08	HMG1J680M1010 500	
	82	10	10.5	2300	1400	30	0.08	HMG1J820M1010 500	
	100	10	12.5	3000	1900	20	0.08	HMG1J101M1013 400	
	150	10	16.5	3500	2400	15	0.08	HMG1J151M1016 250	

① Rated ripple current (100kHz / +135°C) ② ESR (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

HMY Series

Features

- $\phi 8 \sim \phi 10, 145^{\circ}\text{C}, 2000$ hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Vibration resistant structure
- RoHS 2.0 compliant, 247 SVHC & REACH compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information

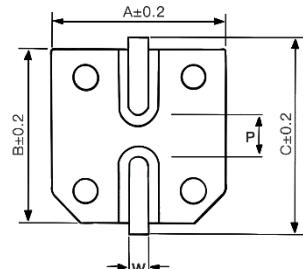
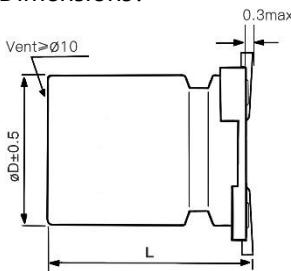


Marking color: Black

Specifications

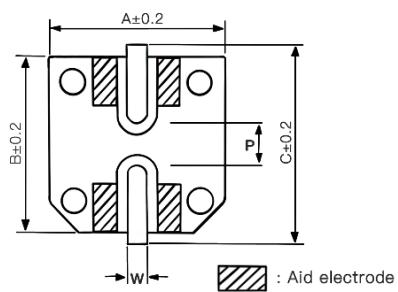
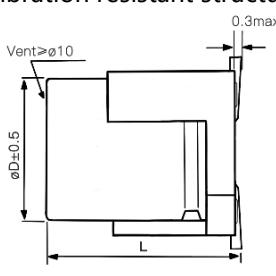
Category temp. range	-55°C to +145°C								
Capacitance tolerance	$\pm 20\%$ (120 Hz / +20 °C)								
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)								
Tan δ	Please see the attached characteristics list								
Characteristics at low temperature	Rated voltage (V)	25	35	50	63				
	Z (-25 °C) / Z (+20 °C)	2.0	2.0	2.0	2.0				
	Z (-55 °C) / Z (+20 °C)	2.5	2.5	2.5	2.5				
Endurance	After applying rated working voltage and rated ripple current for 2000 hours at +145 °C/+135 °C ± 2 °C, and then being stabilized at +20 °C, capacitors shall meet the following limits.								
	Capacitance change	Within ±30% of the initial value							
	Dissipation factor (tan δ)	Less than 200% of the initial value							
	ESR	Less than 200% of the initial value							
	Leakage current	Within the initial limit							
Shelf life	After storage for 1000 h at +145 °C ± 2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance.								
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.								
	Capacitance change	Within ±10% of the initial value							
	Dissipation factor (tan δ)	Within the initial limit							
	ESR	Within the initial limit							
Frequency correction factor for ripple current	Leakage current	Within the initial limit							
	Frequency	120 ≤ f < 1k	1k ≤ f < 10k	10k ≤ f < 100k	100k ≤ f < 500k				
	Correction Factor	0.1	0.3	0.6	1.0				

Dimensions:

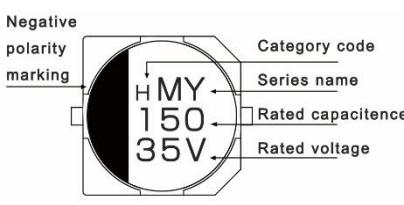


Dimensions							Unit: mm
φ D	L	A	B	C	W	P ± 0.2	
8	10 ± 0.5	8.3	8.3	9.1	0.7 ~ 1.3	3.1	
10	10.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4	

Vibration resistant structure:



Marking:



Part Number System:

Conductive Polymer
Hybrid Capacitors HMY series 25V 220μF ±20 % 8 φ x10L

H MY 1E 221 M 0810

Product category	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size
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Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel MPQ (pcs/reel)
		øD (mm)	L (mm)	Rated ripple current① (mA rms)	ESR② (mΩ)	tan δ③		
25	220	8	10	1600	700	27	0.14	HMY1E221M0810 500
	330	10	10.5	2000	900	20	0.14	HMY1E331M1010 500
35	150	8	10	1600	700	27	0.12	HMY1V151M0810 500
	220	10	10.5	2000	900	20	0.12	HMY1V221M1010 500
	270	10	10.5	2000	900	20	0.12	HMY1V271M1010 500
50	68	8	10	1250	600	30	0.10	HMY1H680M0810 500
	100	10	10.5	1600	800	28	0.10	HMY1H101M1010 500
63	33	8	10	1100	600	40	0.08	HMY1J330M0810 500
	56	10	10.5	1400	800	30	0.08	HMY1J560M1010 500
	82	10	10.5	1400	800	30	0.08	HMY1J820M1010 500

① Rated ripple current (100kHz / +145°C) ② ESR (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

HMW Series

Features

- $\phi 8 \sim \phi 10, 150^\circ\text{C}, 1000$ hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Vibration resistant structure
- RoHS 2.0 compliant, 247 SVHC & REACH compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information

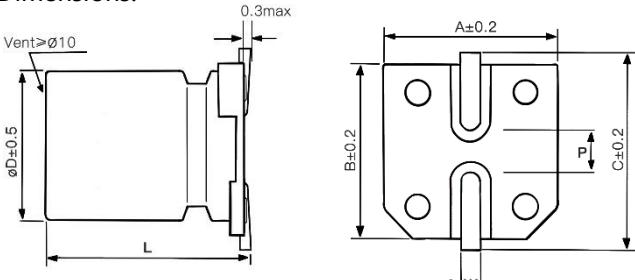


Marking color: Black

Specifications

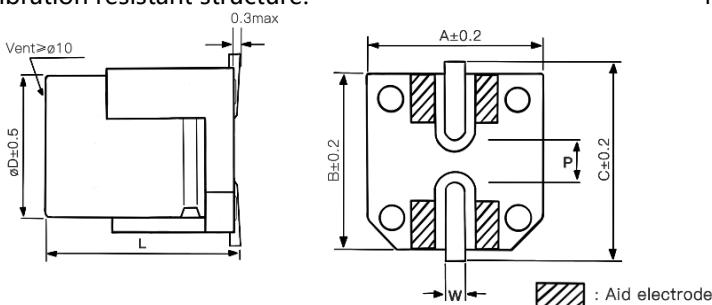
Category temp. range	-55°C to +150°C								
Capacitance tolerance	$\pm 20\%$ (120 Hz / +20 °C)								
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)								
Tan δ	Please see the attached characteristics list								
Characteristics at low temperature	Rated voltage (V)	25	35	50	63				
	Z (-25 °C) / Z (+20 °C)	2.0	2.0	2.0	2.0				
	Z (-55 °C) / Z (+20 °C)	2.5	2.5	2.5	2.5				
Endurance	After applying rated working voltage and rated ripple current for 1000 hours at $+150^\circ\text{C} \pm 2^\circ\text{C}$, and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.								
	Capacitance change	Within $\pm 30\%$ of the initial value							
	Dissipation factor (tan δ)	Less than 200% of the initial value							
	ESR	Less than 200% of the initial value							
	Leakage current	Within the initial limit							
Shelf life	After storage for 1000 h at $+150^\circ\text{C} \pm 2^\circ\text{C}$ with no voltage applied and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the limits specified in endurance.								
Resistance to soldering heat	After reflow soldering and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.								
	Capacitance change	Within $\pm 10\%$ of the initial value							
	Dissipation factor (tan δ)	Within the initial limit							
	ESR	Within the initial limit							
Frequency correction factor for ripple current	Leakage current	Within the initial limit							
	Frequency	120 $\leq f < 1\text{k}$	1k $\leq f < 10\text{k}$	10k $\leq f < 100\text{k}$	100k $\leq f < 500\text{k}$				
	Correction Factor	0.1	0.3	0.6	1.0				

Dimensions:

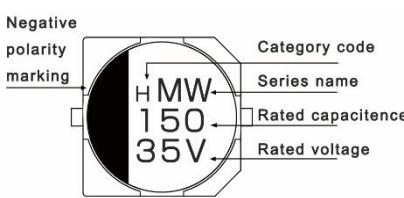


Dimensions						Unit: mm	
Ø D	L	A	B	C	W	P ± 0.2	
8	10 ± 0.5	8.3	8.3	9.1	0.7 ~ 1.3	3.1	
10	10.5 ± 0.5	10.3	10.3	11.1	0.7 ~ 1.3	4.4	

Vibration resistant structure:



Marking:



Part Number System:

Conductive Polymer
Hybrid Capacitors HMW series 25V 150μF ±20 % 8 φ x10L

H**MW****1E****151****M****0810**

Product category

Series name

Rated voltage

Capacitance

Capacitance tolerance

Case Size

Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel
		øD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	tan δ③		MPQ (pcs/reel)
25	150	8	10	800	27	0.14	HMW1E151M0810	500
	270	10	10.5	1000	20	0.14	HMW1E271M1010	500
35	100	8	10	770	30	0.12	HMW1V101M0810	500
	150	10	10.5	950	23	0.12	HMW1V151M1010	500
50	56	8	10	700	35	0.10	HMW1H560M0810	500
	100	10	10.5	900	28	0.10	HMW1H101M1010	500
63	33	8	10	650	40	0.08	HMW1J330M0810	500
	56	10	10.5	840	30	0.08	HMW1J560M1010	500

① Rated ripple current (100kHz / +150°C) ② ESR (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For Vibration resistant structure, the Part Number is appended with "v" at the end.

※Please refer to the page of reflow conditions for reflow profile.

HPV Series

Features

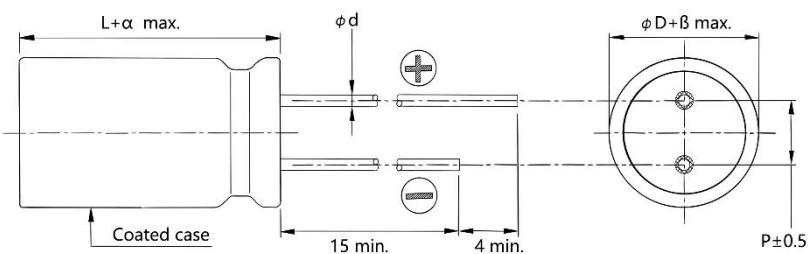
- $\phi 8 \sim \phi 10, 105^\circ\text{C}, 10000$ hours assured
- Low ESR and high ripple current
- RoHS 2.0 compliant,
- 247 SVHC & REACH compliant



Marking color: Black

Specifications													
Category temp. range	-55°C to $+105^\circ\text{C}$												
Capacitance tolerance	$\pm 20\%$ (120 Hz / $+20^\circ\text{C}$)												
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)												
Tan δ	Please see the attached characteristics list												
Characteristics at low temperature	Rated voltage (V)	16	25	35	50	63	80						
	Z (-25 °C) / Z (+20 °C)	2.0	2.0	2.0	2.0	2.0	2.0						
	Z (-55 °C) / Z (+20 °C)	2.5	2.5	2.5	2.5	2.5	2.5						
	Impedance ratio at 120 Hz												
Endurance	After applying rated working voltage and rated ripple current for 10000 hours at $+105^\circ\text{C} \pm 2^\circ\text{C}$, and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 30\%$ of the initial value											
	Dissipation factor (tan δ)	Less than 200% of the initial value											
	ESR	Less than 200% of the initial value											
	Leakage current	Within the initial limit											
Shelf life	After storage for 1000 h at $+105^\circ\text{C} \pm 2^\circ\text{C}$ with no voltage applied and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the limits specified in endurance.												
Resistance to soldering heat	After reflow soldering and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 10\%$ of the initial value											
	Dissipation factor (tan δ)	Within the initial limit											
	ESR	Within the initial limit											
Frequency correction factor for ripple current	Frequency	120 $\leq f < 1\text{k}$	1k $\leq f < 10\text{k}$	10k $\leq f < 100\text{k}$	100k $\leq f < 500\text{k}$								
	Correction Factor	0.1	0.3	0.6	1.0								

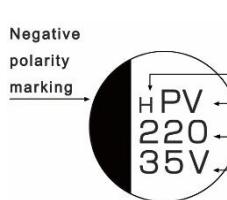
Dimensions:



Dimensions		Unit: mm	
φ D	8	10	10
L	9	10	12
P	3.5	5.0	5.0
φ d		0.6	
α		1.0	
β		0.5	

Marking:

Part Number System:



Hybrid Capacitors	HPV series	35V	220μF	±20 %	10 φ x10L
Negative polarity marking	H	PV	1V	221	M
Category code					1010
Series name					
Rated capacitance					
Rated voltage					
Product category					
	Series name	Rated voltage	Capacitance	Capacitance tolerance	Case Size

Characteristics list

Rated voltage (V)	Capacitance ($\pm 20\%$) (μF)	Case size		Specification			Part Number④
		ϕD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	$\tan \delta$ ③	
16	270	8	9	2300	27	0.16	HPV1C271M0809
	330	8	9	2300	27	0.16	HPV1C331M0809
	470	10	10	2500	20	0.16	HPV1C471M1010
	560	10	12	2500	20	0.16	HPV1C561M1012
25	150	8	9	2300	27	0.14	HPV1E151M0809
	220	8	9	2300	27	0.14	HPV1E221M0809
	330	10	10	2500	20	0.14	HPV1E331M1010
	470	10	12	2900	16	0.14	HPV1E471M1012
35	100	8	9	2300	27	0.12	HPV1V101M0809
	150	8	9	2300	27	0.12	HPV1V151M0809
	220	10	10	2500	20	0.12	HPV1V221M1010
	270	10	10	2500	20	0.12	HPV1V271M1010
	330	10	12	2900	16	0.12	HPV1V331M1012
50	33	8	9	1800	30	0.10	HPV1H330M0809
	47	8	9	1800	30	0.10	HPV1H470M0809
	68	8	9	1800	30	0.10	HPV1H680M0809
	100	10	10	2000	28	0.10	HPV1H101M1010
	120	10	12	2300	25	0.10	HPV1H121M1012
63	22	8	9	1700	40	0.08	HPV1J220M0809
	33	8	9	1700	40	0.08	HPV1J330M0809
	47	8	9	1700	40	0.08	HPV1J470M0809
	56	10	10	1800	30	0.08	HPV1J560M1010
	68	10	10	1800	30	0.08	HPV1J680M1010
	82	10	10	1800	30	0.08	HPV1J820M1010
	100	10	12	2000	27	0.08	HPV1J101M1012
80	22	8	9	1550	45	0.08	HPV1K220M0809
	33	10	10	1700	36	0.08	HPV1K330M1010
	47	10	10	1700	36	0.08	HPV1K470M1010

 ① Rated ripple current (100kHz / +105°C) ② ESR (100kHz / +20°C) ③ $\tan \delta$ (120Hz / +20°C)

※Please refer to the page of reflow conditions for reflow profile.

HPR Series

Features

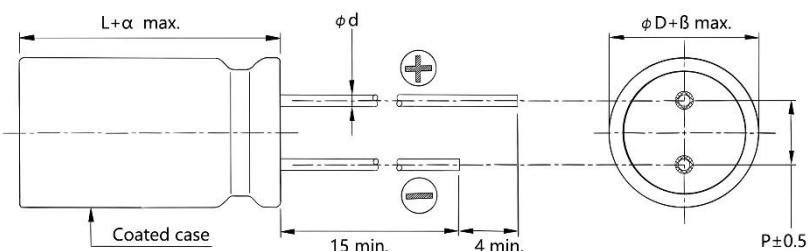
- $\phi 8 \sim \phi 10, 125^\circ\text{C}, 4000$ hours assured
- Low ESR and high ripple current
- RoHS 2.0 compliant,
- 247 SVHC & REACH compliant



Marking color: Black

Specifications													
Category temp. range	-55°C to $+125^\circ\text{C}$												
Capacitance tolerance	$\pm 20\%$ (120 Hz / $+20^\circ\text{C}$)												
Leakage current	$I \leq 0.01 \text{ CV}$ or $3 \mu\text{A}$ whichever is greater (after 2 minutes)												
Tan δ	Please see the attached characteristics list												
Characteristics at low temperature	Rated voltage (V)	16	25	35	50	63	80						
	Z (-25°C) / Z ($+20^\circ\text{C}$)	2.0	2.0	2.0	2.0	2.0	2.0						
	Z (-55°C) / Z ($+20^\circ\text{C}$)	2.5	2.5	2.5	2.5	2.5	2.5						
	Impedance ratio at 120 Hz												
Endurance	After applying rated working voltage and rated ripple current for 4000 hours at $+125^\circ\text{C} \pm 2^\circ\text{C}$, and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 30\%$ of the initial value											
	Dissipation factor (tan δ)	Less than 200% of the initial value											
	ESR	Less than 200% of the initial value											
	Leakage current	Within the initial limit											
Shelf life	After storage for 1000 h at $+125^\circ\text{C} \pm 2^\circ\text{C}$ with no voltage applied and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the limits specified in endurance.												
Resistance to soldering heat	After reflow soldering and then being stabilized at $+20^\circ\text{C}$, capacitors shall meet the following limits.												
	Capacitance change	Within $\pm 10\%$ of the initial value											
	Dissipation factor (tan δ)	Within the initial limit											
	ESR	Within the initial limit											
	Leakage current	Within the initial limit											
Frequency correction factor for ripple current	Frequency	120 $\leq f < 1\text{k}$	1k $\leq f < 10\text{k}$	10k $\leq f < 100\text{k}$	100k $\leq f < 500\text{k}$								
	Correction Factor	0.1	0.3	0.6	1.0								

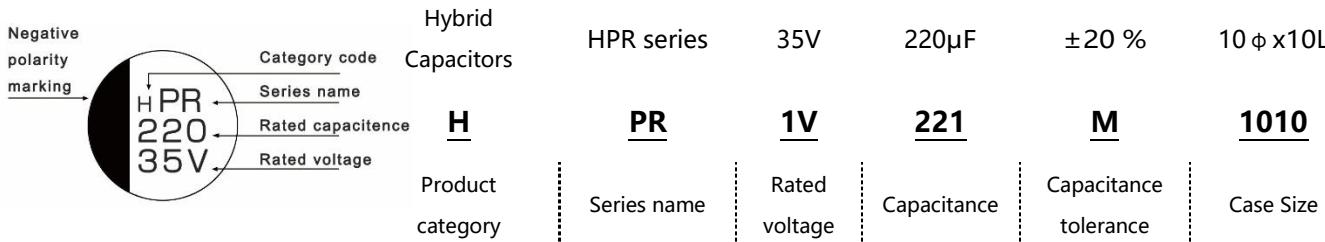
Dimensions:



Dimensions		Unit: mm	
φ D	8	10	10
L	9	10	12
P	3.5	5.0	5.0
φ d		0.6	
α		1.0	
β		0.5	

Marking:

Part Number System:



Characteristics list

Rated voltage (V)	Capacitance ($\pm 20\%$) (μF)	Case size		Specification			Part Number④
		ϕD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	$\tan \delta$ ③	
16	270	8	9	1600	27	0.16	HPR1C271M0809
	470	10	10	2000	20	0.16	HPR1C471M1010
25	220	8	9	1600	27	0.14	HPR1E221M0809
	330	8	9	1600	27	0.14	HPR1E331M0809
		10	10	2000	20	0.14	HPR1E331M1010
	470	10	10	2000	20	0.14	HPR1E471M1010
	680	10	12	2800	15	0.14	HPR1E681M1012
35	100	8	9	1600	27	0.12	HPR1V101M0809
	150	8	9	1600	27	0.12	HPR1V151M0809
	220	10	10	2000	20	0.12	HPR1V221M1010
	330	10	10	2000	20	0.12	HPR1V331M1010
	470	10	12	2800	16	0.12	HPR1V471M1012
50	47	8	9	1250	30	0.10	HPR1H470M0809
	68	8	9	1250	30	0.10	HPR1H680M0809
	100	10	10	1600	28	0.10	HPR1H101M1010
	150	10	10	1600	28	0.10	HPR1H151M1010
	220	10	12	1800	23	0.10	HPR1H221M1012
63	33	8	9	1100	40	0.08	HPR1J330M0809
	47	8	9	1100	40	0.08	HPR1J470M0809
	68	10	10	1400	30	0.08	HPR1J680M1010
	100	10	10	1400	30	0.08	HPR1J101M1010
	120	10	12	1600	26	0.08	HPR1J121M1012
80	22	8	9	1050	45	0.08	HPR1K220M0809
	33	10	10	1350	36	0.08	HPR1K330M1010
	47	10	10	1350	36	0.08	HPR1K470M1010
	56	10	12	1550	32	0.08	HPR1K560M1012

① Rated ripple current (100kHz / +105°C) ② ESR (100kHz / +20°C) ③ $\tan \delta$ (120Hz / +20°C)

※Please refer to the page of reflow conditions for reflow profile.



江西伽盛电子有限公司 (总部)

ISO9001:2015 / ISO14001:2015 / IATF16949 :2016

Jiangxi Jarson Electronics Co.,Ltd (Head Office)

江西省赣州市安远县城北工业园

Chengbei Industrial Park, Anyuan County, Ganzhou, Jiangxi Province, China

TEL: +86-797-376 9588 ZIP: 342100

Email: sales@jarson.com.cn

伽盛電子(香港)有限公司

Jarson Electronics (HK) Limited

香港干諾道中137-139號三臺大廈12樓

12/F., San Toi Building, 137-139 Connaught Road Central, HongKong

TEL: +852-2139 3077 FAX: +852-2139 3217

Email: alex@jarson.com.cn

伽盛电子(广州)有限公司

Jarson Electronics (Guangzhou) Co.,Ltd

广东省广州市增城区新塘镇创想路8号一号智谷506室

Room 506, No.8 Chuangxiang Road, Xintang Town, Guangzhou, Guangdong Province, China

TEL: +86-135 3800 4370 ZIP: 511300

Email: sales@jarson.com.cn

东莞伽盛电子有限公司

Dongguan Jarson Electronics Co.,Ltd

广东省东莞市虎门镇金宁路32号525室

Room 525, No.32 Jinning Road, Humen Town, Dongguan, Guangdong Province, China

TEL: +86-138 2720 1681 ZIP: 523900

韩国办事处

제이에스케이(Jarson 한국 지사)

JSK Co. (Jarson Electronics Korea Office)

경기도 용인시 기흥구 동백죽전대로 507

507 Dongbaekjukjeon-daero, Giheung-gu, Yongin-si, Gyeonggi-do, Korea

TEL: +82-10-4607-8939

Email: lamo2002@js-k.co.kr

The products in the catalog are standard designs.

Customized specifications may be available upon request.

Please contact with us.