

Radial Leaded Aluminum Electrolytic Capacitors

RES Series



FEATURES

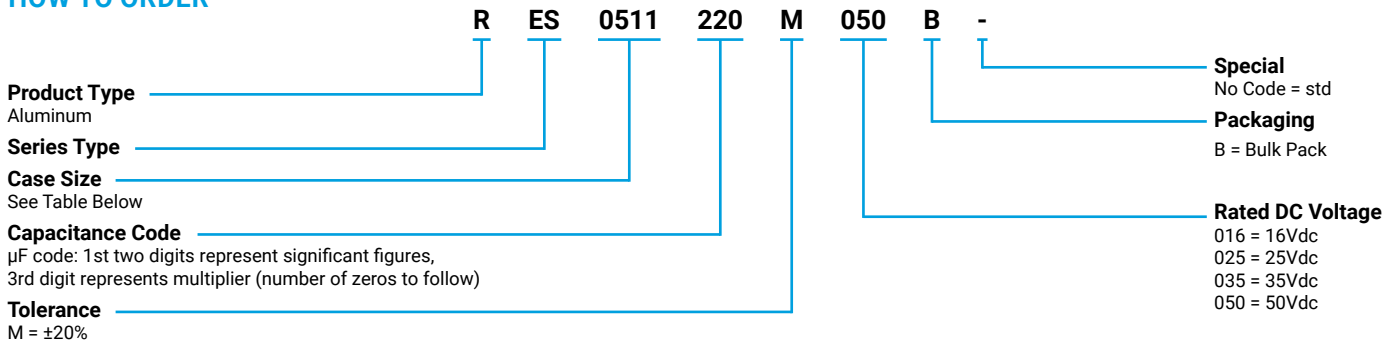
- Small size
- Long life and high ripple current
- Endurance: 5000 - 7000 hours at 105°C
- RoHS Compliance

APPLICATIONS

- Communications equipment
- Industrial equipment

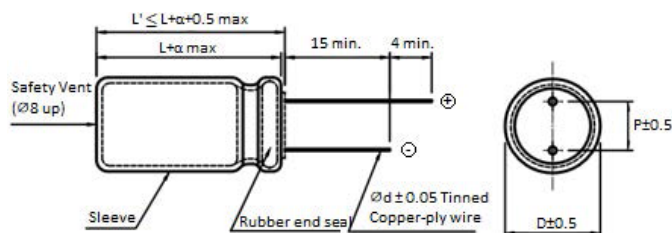


HOW TO ORDER

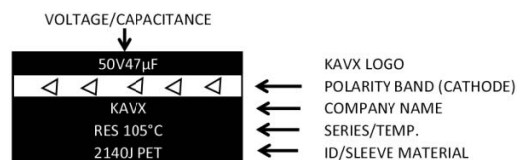


CASE DIMENSIONS millimeters (inches)

Code	D±0.50(0.020)	L±0.50(0.020)	d±0.05(0.002)	P±0.50(0.020)	α	Typical Weight (g)
0511	5.00 (0.020)	11.00 (0.433)	0.50 (0.020)	2.00 (0.079)	2.00 (0.079)	0.41
0611	6.30 (0.248)	11.00 (0.433)	0.50 (0.020)	2.50 (0.098)	2.00 (0.079)	0.68
0812	8.00 (0.315)	12.00 (0.472)	0.50 (0.020)	3.50 (0.138)	2.00 (0.079)	1.00
0816	8.00 (0.315)	16.00 (0.629)	0.50 (0.020)	3.50 (0.138)	2.00 (0.079)	1.33
0820	8.00 (0.315)	20.00 (0.787)	0.50 (0.020)	3.50 (0.138)	2.00 (0.079)	1.81



MARKING



TECHNICAL SPECIFICATIONS

Category Temperature Range:	-40°C to +105°C	
Capacitance Range	at 25°C, 120Hz	2.2µF to 1,000µF
Capacitance Tolerance:	at 25°C, 120Hz	±20%
Dissipation Factor (%)	Measurement Frequency: 120Hz at 25°C	Please see the Ratings and Part Number Reference Table below
Leakage Current:	After 2 minutes at rated working voltage at 25°C	I _s ≤ 0.01CV (µA) or 3µA, whichever is greater

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CAPACITANCE AND RATED VOLTAGE RANGE (FIGURES DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R)			
μF	Code	16V	25V	35V	50V
2.2	2R2				0511
4.7	4R7				0511
10	100				0511
22	220				0511
47	470		0511		0611
100	101		0611		0812
220	221	0611	0812	0816	
330	331		0816		
470	471	0816	0820		
1000	102	0820			

Released ratings

RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	Impedance @100kHz/20°C (Ω _{max})	100kHz RMS Current (mA)/105°C
16V							
RES0611221M016B	0611	220	16	35.2	16	0.140	450
RES0816471M016B	0816	470	16	75.2	16	0.087	850
RES0820102M016B	0820	1000	16	160.0	16	0.045	1250
25V							
RES0511470M025B	0511	47	25	11.8	14	0.570	210
RES0611101M025B	0611	100	25	25.0	14	0.210	350
RES0812221M025B	0812	220	25	55.0	14	0.130	660
RES0816331M025B	0816	330	25	82.5	14	0.086	850
RES0820471M025B	0820	470	25	117.5	14	0.069	1050
35V							
RES0816221M035B	0816	220	35	77.0	12	0.086	850
50V							
RES05112R2M050B	0511	2.2	50	1.1	10	2.500	57
RES05114R7M050B	0511	4.7	50	2.4	10	1.900	90
RES0511100M050B	0511	10	50	5.0	10	1.500	120
RES0511220M050B	0511	22	50	11.0	10	0.680	180
RES0611470M050B	0611	47	50	23.5	10	0.300	295
RES0812101M050B	0812	100	50	50.0	10	0.170	560

All technical data relates to an ambient temperature of +25°C

FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Rated Voltage (Vdc)	Frequency (Hz)			
	120	1K	10K	100K
Cap. < 220	0.40	0.75	0.90	1.00
220 ≤ Cap. < 470	0.50	0.85	0.94	1.00
470 ≤ Cap. < 1000	0.60	0.87	0.95	1.00

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QUALIFICATION TABLE

Test	RES Series (Temperature range -40°C to +105°C)					
	Condition		Characteristics			
Temperature Stability (Max. Impedance Ratio)	120Hz		Rated Voltage (V)	16 - 50		
			Z(-25°C) / Z(20°C)	2		
Load Life	Application of the rated voltage and the rated ripple current. Test temperature: 105 ± 2°C		ΔC/C	Within ±20% of initial limit		
			Diameter	Life Time (h)	DF	Not more than 200% of the specified limit
					DCL	Not more than the specified limit
			φD≤6.3	5000		
φD=8	7000					
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours 105°C without voltage applied.		ΔC/C	Within ±20% of initial limit		
			DF	200% or less of initial limit		
			DCL	Initial specified limit or less		

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use the rms ripple current has to be reduced.

STORAGE

- It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C and a relative humidity of 75% or below.
- Confirm that the environment does not have any of the following conditions:
 - Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
 - In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, etc.).
 - Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
 - Exposed to acidic or alkaline solutions.
 - Under severe conditions where vibration and / or mechanical shock exceed the applicable ranges of the specification.
- Storage life: 2yrs

PACKAGE DIMENSIONS (BULK PACKING)

Type of Product	Code	Bags / Inner Box	Quantity (Pcs/Carton)	Total Quantity (Pcs/Carton)	Wt (Kg/bag)	Size of Inner Box L x W x H (mm)	Size of Out Box L x W x H (mm)
Radial Classic	0511	12	1000	12000	0.43	267 X	546 x
	0611	8	1000	8000	0.60		
	0812	10	500	5000	0.49	260	279
	0816	10	300	3000	0.69	X	x
	0820	10	300	3000	0.71	135	160

Note: if you need more packing information, please contact your sales representative.

