RE series

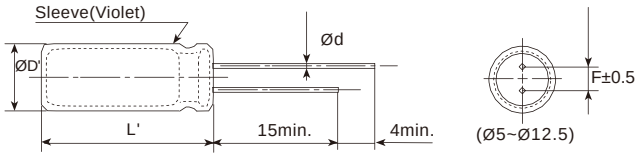
- Low impedance and high frequency.
- Endurance: +105°C 2,000~4,000 hours
- Suitable for switching power, UPS, power sources, etc.
- **RoHS Compliant**

SPECIFICATIONS

Items	Characteristics								
Category Temperature Range	-40~+105°C								
Rated Voltage Range	6.3~100 Vdc								
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)								
Leakage Current	I≤0.01CV or 3μA, whichever is greater. Where, I:Max.leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V) (at 20°C after 2 minutes)								
Dissipation Factor (tanδ)	Rated Voltage(Vdc)	6.3	10	16	25	35	50	63	100
	tanδ (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C,120Hz)								
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(Vdc)	6.3	10	16	25	35	50	63	100
	Z(-25°C)/Z(+20°C)	4	3	2					
	Z(-40°C)/Z(+20°C)	8	6	4	3				(at 120Hz)
Endurance	The following specifications listed below shall be met when the capacitors are restored to 20°C after DC voltage plus rated ripple current is applied for a specified period of time at 105 °C.								
	Capacitance Change	≤±25% of the initial value							
	D.F. (tanδ)	≤200% of the initial specified value							
	Leakage Current	≤The initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them under no load at 105°C for 1,000 hours.								
	Capacitance Change	≤±25% of the initial value							
	D.F. (tanδ)	≤200% of the initial specified value							
	Leakage Current	≤200% of the initial specified value							

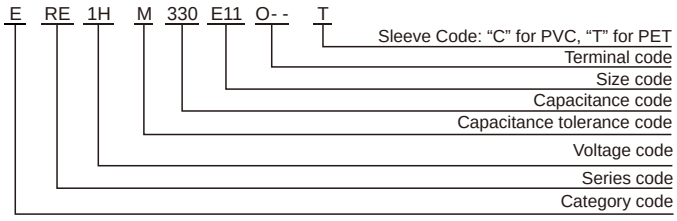
Case Dia.(mm)	Load life (hours)
ØD≤6.3	2,000
ØD=8&10	3,000
ØD≥12.5	4,000

DIMENSIONS[mm]



ØD	5	6.3	8		10	12.5
Ød	0.5	0.5	0.5	0.6	0.6	0.6
F	2.0	2.5	3.5		5.0	5.0
ØD'	ØD+0.5max.					
L'	L+2max.					

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz) / Cap.(μF)	120	1k	10k	100k
Cap.<220	0.40	0.75	0.90	1.00
220≤Cap.<680	0.50	0.85	0.94	1.00
680≤Cap.<2200	0.60	0.87	0.95	1.00
2200≤Cap.<4700	0.75	0.90	0.95	1.00
Cap.≥4700	0.85	0.95	0.98	1.00

The endurance of capacitors is shortened 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.

RE series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part Number
6.3(0J)	180	6.3×11	0.22	0.25	340	ERE0JM181E11OT
		8×9	0.22	0.33	300	ERE0JM181F09OT
	220	6.3×11	0.22	0.25	340	ERE0JM221E11OT
		8×9	0.22	0.33	300	ERE0JM221F09OT
	270	6.3×11	0.22	0.25	340	ERE0JM271E11OT
		8×9	0.22	0.33	300	ERE0JM271F09OT
	330	8×11	0.22	0.13	650	ERE0JM331F11OT
		10×9	0.22	0.17	580	ERE0JM331G09OT
	470	8×11	0.22	0.13	650	ERE0JM471F11OT
		10×9	0.22	0.17	580	ERE0JM471G09OT
	560	8×11	0.22	0.13	650	ERE0JM561F11OT
		10×9	0.22	0.17	580	ERE0JM561G09OT
	680	8×11	0.22	0.13	650	ERE0JM681F11OT
		10×9	0.22	0.17	580	ERE0JM681G09OT
	820	10×12	0.22	0.08	870	ERE0JM821G12OT
	1000	10×9	0.22	0.17	580	ERE0JM102G09OT
		10×12	0.22	0.08	870	ERE0JM102G12OT
	1200	10×12	0.22	0.08	870	ERE0JM122G12OT
	1500	8×20	0.22	0.068	1050	ERE0JM152F20OT
		10×16	0.22	0.060	1210	ERE0JM152G16OT
	1800	10×20	0.22	0.045	1400	ERE0JM182G20OT
	2200	10×20	0.24	0.045	1400	ERE0JM222G20OT
	2700	10×25	0.24	0.042	1650	ERE0JM272G25OT
		12.5×20	0.24	0.035	1900	ERE0JM272W20OT
	3300	10×25	0.24	0.042	1650	ERE0JM332G25OT
		12.5×20	0.26	0.035	1900	ERE0JM332W20OT
	3900	12.5×20	0.26	0.035	1900	ERE0JM392W20OT
	4700	12.5×25	0.28	0.030	2130	ERE0JM472W25OT
10(1A)	150	6.3×11	0.19	0.25	340	ERE1AM151E11OT
		8×9	0.19	0.33	300	ERE1AM151F09OT
	180	6.3×11	0.19	0.25	340	ERE1AM181E11OT
		8×9	0.19	0.33	300	ERE1AM181F09OT
	220	6.3×11	0.19	0.25	340	ERE1AM221E11OT
		8×9	0.19	0.33	300	ERE1AM221F09OT
	270	8×9	0.19	0.33	300	ERE1AM271F09OT
		10×9	0.19	0.17	580	ERE1AM271G09OT
	330	10×9	0.19	0.17	580	ERE1AM331G09OT
	470	10×9	0.19	0.17	580	ERE1AM471G09OT
	560	10×9	0.19	0.17	580	ERE1AM561G09OT
	680	10×9	0.19	0.17	580	ERE1AM681G09OT
	820	10×12	0.19	0.08	870	ERE1AM821G12OT
	1000	8×16	0.19	0.087	850	ERE1AM102F16OT
		10×16	0.19	0.060	1210	ERE1AM102G16OT
	1200	10×20	0.19	0.045	1400	ERE1AM122G20OT
	1500	10×20	0.19	0.045	1400	ERE1AM152G20OT
	1800	10×20	0.19	0.045	1400	ERE1AM182G20OT
	2200	10×20	0.21	0.045	1400	ERE1AM222G20OT
	2700	10×25	0.21	0.042	1650	ERE1AM272G25OT
		12.5×20	0.21	0.035	1900	ERE1AM272W20OT
	3300	12.5×25	0.23	0.030	2130	ERE1AM332W25OT
16(1C)	100	8×9	0.16	0.33	300	ERE1CM101F09OT
	120	8×9	0.16	0.33	300	ERE1CM121F09OT
	150	8×9	0.16	0.33	300	ERE1CM151F09OT
		10×9	0.16	0.33	580	ERE1CM151G09OT
	180	8×9	0.16	0.33	300	ERE1CM181F09OT
		10×9	0.16	0.33	580	ERE1CM181G09OT
	220	8×9	0.16	0.33	300	ERE1CM221F09OT
		10×9	0.16	0.33	580	ERE1CM221G09OT
	270	10×9	0.16	0.17	580	ERE1CM271G09OT
	330	10×9	0.16	0.17	580	ERE1CM331G09OT
	470	10×9	0.16	0.17	580	ERE1CM471G09OT
		10×12	0.16	0.08	870	ERE1CM471G12OT
	560	10×12	0.16	0.08	870	ERE1CM561G12OT
	680	8×16	0.16	0.087	850	ERE1CM681F16OT
		10×12	0.16	0.080	870	ERE1CM681G12OT
	820	10×16	0.16	0.06	1210	ERE1CM821G16OT
	1000	10×16	0.16	0.06	1210	ERE1CM102G16OT
	1200	10×20	0.16	0.045	1400	ERE1CM122G20OT
	1500	10×20	0.16	0.045	1400	ERE1CM152G20OT
	1800	10×25	0.16	0.042	1650	ERE1CM182G25OT
		12.5×20	0.16	0.035	1900	ERE1CM182W20OT
	2200	12.5×20	0.18	0.035	1900	ERE1CM222W20OT
	2700	12.5×20	0.18	0.030	2130	ERE1CM272W20OT
25(1E)	82	6.3×11	0.14	0.25	340	ERE1EM820E11OT
		8×9	0.14	0.33	300	ERE1EM820F09OT
	100	6.3×11	0.14	0.25	340	ERE1EM101E11OT
		8×9	0.14	0.33	300	ERE1EM101F09OT

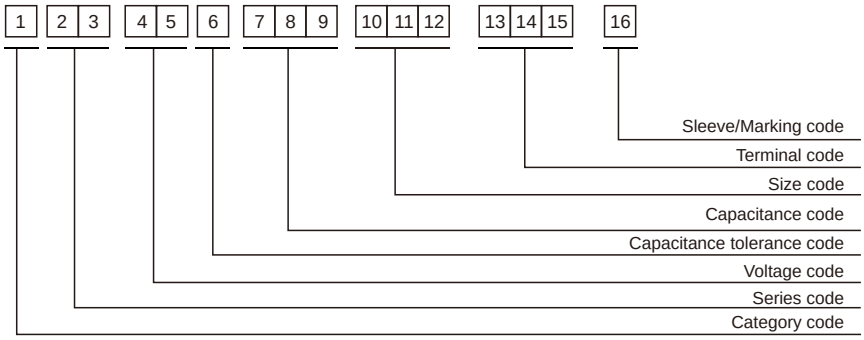
WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part Number
25(1E)	120	8×11	0.14	0.13	650	ERE1EM121F11OT
		10×9	0.14	0.17	580	ERE1EM121G09OT
	150	8×11	0.14	0.13	650	ERE1EM151F11OT
		10×9	0.14	0.17	580	ERE1EM151G09OT
	180	8×11	0.14	0.13	650	ERE1EM181F11OT
		10×9	0.14	0.17	580	ERE1EM181G09OT
	220	8×11	0.14	0.13	650	ERE1EM221F11OT
		10×9	0.14	0.17	580	ERE1EM221G09OT
	270	10×9	0.14	0.17	580	ERE1EM271G09OT
		10×12	0.14	0.08	870	ERE1EM271G12OT
	330	10×9	0.14	0.17	580	ERE1EM331G09OT
		10×12	0.14	0.08	870	ERE1EM331G12OT
	470	8×16	0.14	0.087	840	ERE1EM471F16OT
		10×12	0.14	0.080	870	ERE1EM471G12OT
	560	10×16	0.14	0.060	1210	ERE1EM561G16OT
	680	10×16	0.14	0.060	1210	ERE1EM681G16OT
	820	10×20	0.14	0.045	1400	ERE1EM821G20OT
	1000	10×20	0.14	0.045	1400	ERE1EM102G20OT
	1200	10×20	0.14	0.045	1400	ERE1EM122G20OT
	1500	10×25	0.14	0.042	1650	ERE1EM152G25OT
		12.5×20	0.14	0.035	1900	ERE1EM152W20OT
	1800	12.5×25	0.14	0.030	2130	ERE1EM182W25OT
	2200	12.5×25	0.14	0.030	2130	ERE1EM222W25OT
35(1V)	47	6.3×11	0.12	0.25	340	ERE1VM470E11OT
		8×9	0.12	0.33	300	ERE1VM470F09OT
	56	6.3×11	0.12	0.25	340	ERE1VM560E11OT
		8×9	0.12	0.33	300	ERE1VM560F09OT
	68	6.3×11	0.12	0.25	340	ERE1VM680E11OT
		8×9	0.12	0.33	300	ERE1VM680F09OT
	82	8×11	0.12	0.13	650	ERE1VM820F11OT
		10×9	0.12	0.17	580	ERE1VM820G09OT
	100	8×11	0.12	0.13	650	ERE1VM101F11OT
		10×9	0.12	0.17	580	ERE1VM101G09OT
	120	8×11	0.12	0.13	650	ERE1VM121F11OT
		10×9	0.12	0.17	580	ERE1VM121G09OT
	150	8×11	0.12	0.13	650	ERE1VM151F11OT
		10×9	0.12	0.17	580	ERE1VM151G09OT
	180	10×12	0.12	0.08	870	ERE1VM181G12OT
	220	8×11	0.12	0.13	650	ERE1VM221F11OT
		10×9	0.12	0.17	580	ERE1VM221G09OT
		8×16	0.12	0.087	840	ERE1VM221F16OT
		10×12	0.12	0.080	870	ERE1VM221G12OT
	270	10×16	0.12	0.060	1210	ERE1VM271G16OT
	330	8×20	0.12	0.069	1050	ERE1VM331F20OT
		10×12	0.12	0.080	870	ERE1VM331G12OT
		10×16	0.12	0.060	1210	ERE1VM331G16OT
	470	10×16	0.12	0.060	1210	ERE1VM471G16OT
	560	10×20	0.12	0.045	1400	ERE1VM561G20OT
	680	10×20	0.12	0.045	1400	ERE1VM681G20OT
	820	10×25	0.12	0.042	1650	ERE1VM821G25OT
		12.5×20	0.12	0.035	1900	ERE1VM821W20OT
	1000	12.5×20	0.12	0.035	1900	ERE1VM102W20OT
		12.5×25	0.12	0.030	2130	ERE1VM102W25OT
50(1H)	33	6.3×11	0.10	0.30	295	ERE1HM330E11OT
		8×9	0.10	0.40	260	ERE1HM330F09OT
	39	6.3×11	0.10	0.30	295	ERE1HM390E11OT
		8×9	0.10	0.40	260	ERE1HM390F09OT
	47	6.3×11	0.10	0.30	295	ERE1HM470E11OT
		8×9	0.10	0.40	260	ERE1HM470F09OT
	56	8×11	0.10	0.17	560	ERE1HM560F11OT
		10×9	0.10	0.23	500	ERE1HM560G09OT
	68	8×11	0.10	0.17	560	ERE1HM680F11OT
		10×9	0.10	0.23	500	ERE1HM680G09OT
	82	8×11	0.10	0.17	560	ERE1HM820F11OT
		10×9	0.10	0.23	500	ERE1HM820G09OT
	100	10×12	0.10	0.12	760	ERE1HM101G12OT
	120	8×16	0.10	0.12	730	ERE1HM121F16OT
		10×12	0.10	0.12	760	ERE1HM121G12OT
	150	10×16	0.10	0.084	1050	ERE1HM151G16OT
	180	8×20	0.10	0.090	1050	ERE1HM181F20OT
		10×16	0.10	0.084	1050	ERE1HM181G16OT
	220	10×16	0.10	0.084	1050	ERE1HM221G16OT
	270	10×25	0.10	0.055	1440	ERE1HM271G25OT
	330	12.5×20	0.10	0.045	1660	ERE1HM331W20OT
	470	12.5×25	0.10	0.034	1950	ERE1HM471W25OT
	560	12.5×25	0.10	0.034	1950	ERE1HM561W25OT

RE series

STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part Number
63(1J)	22	6.3×11	0.09	0.95	120	ERE1JM220E11OT
		8×9	0.09	1.24	100	ERE1JM220F09OT
	27	6.3×11	0.09	0.95	120	ERE1JM270E11OT
		8×9	0.09	1.24	100	ERE1JM270F09OT
	33	6.3×11	0.09	0.95	120	ERE1JM330E11OT
		8×9	0.09	1.24	100	ERE1JM330F09OT
	39	8×11	0.09	0.51	235	ERE1JM390F11OT
		10×9	0.09	0.67	210	ERE1JM390G09OT
	47	8×11	0.09	0.51	235	ERE1JM470F11OT
		10×9	0.09	0.67	210	ERE1JM470G09OT
	56	8×11	0.09	0.51	235	ERE1JM560F11OT
		10×9	0.09	0.67	210	ERE1JM560G09OT
	68	8×11	0.09	0.51	235	ERE1JM680F11OT
		10×9	0.09	0.67	210	ERE1JM680G09OT
	82	10×12	0.09	0.34	315	ERE1JM820G12OT
	100	8×16	0.09	0.35	300	ERE1JM101F16OT
		10×12	0.09	0.34	315	ERE1JM101G12OT
	120	10×16	0.09	0.245	360	ERE1JM121G16OT
	150	8×20	0.09	0.265	360	ERE1JM151F20OT
	180	10×20	0.09	0.165	470	ERE1JM181G20OT
	220	10×20	0.09	0.165	470	ERE1JM221G20OT
	270	12.5×20	0.09	0.125	700	ERE1JM271W20OT
	330	12.5×20	0.09	0.125	700	ERE1JM331W20OT
	390	12.5×25	0.09	0.095	930	ERE1JM391W25OT
100(1K)	15	6.3×11	0.08	0.95	120	ERE1KM150E11OT
		8×9	0.08	1.24	100	ERE1KM150F09OT
	27	8×11	0.08	0.51	235	ERE1KM270F11OT
		10×9	0.08	0.67	210	ERE1KM270G09OT
	39	8×16	0.08	0.36	300	ERE1KM390F16OT
	47	10×12	0.08	0.34	315	ERE1KM470G12OT
	56	8×20	0.08	0.265	360	ERE1KM560F20OT
	68	10×16	0.08	0.245	360	ERE1KM680G16OT
	82	10×20	0.08	0.165	470	ERE1KM820G20OT
	100	10×20	0.08	0.165	470	ERE1KM101G20OT
	120	12.5×20	0.08	0.125	700	ERE1KM121W20OT
	180	12.5×25	0.08	0.095	930	ERE1KM181W25OT
	220	12.5×25	0.08	0.095	930	ERE1KM221W25OT

Part Numbering System



Category code

Type	Code
	1
Aluminum electrolytic capacitor	E

Series code

Series name	Code	
	2	3
WH	W	H
CD11GE	G	E
CD11GES	G	X
CD11GAS	G	W
CD11GHS	G	S
NR	N	R

Voltage code

WV (V_{dc})	Code	
	4	5
2.5	0	E
3	0	D
4	0	G
6.3	0	J
6.8	0	C
7	0	Q
7.5	0	A
10	1	A
12	1	T
16	1	C
25	1	E
35	1	V
40	1	G
50	1	H
63	1	J
80	1	B
100	1	K
120	2	B
160	2	C
180	2	L
200	2	D
220	2	N
250	2	E
315	2	F
350	2	V
380	2	P
400	2	G
420	2	T
450	2	W
500	2	H
550	2	J
600	2	K

Capacitance tolerance code

Tol. (%)	Code
	6
-10~+10	K
-20~+20	M
-10~+30	Q
-10~+20	V
0~+20	A
-5~+20	C
-10~-20	B
-5~+5	D
0~+10	E
-5~-20	F
-15~+5	N

Capacitance code

Cap (μF)	Code		
	7	8	9
0.10	R	1	0
0.22	R	2	2
0.33	R	3	3
0.47	R	4	7
0.68	R	6	8
1	0	1	0
2.2	2	R	2
3.3	3	R	3
4.7	4	R	7
6.8	6	R	8
10	1	0	0
22	2	2	0
33	3	3	0
47	4	7	0
68	6	8	0
100	1	0	1
220	2	2	1
330	3	3	1
470	4	7	1
680	6	8	1
1000	1	0	2
2200	2	2	2
3300	3	3	2
4700	4	7	2
6800	6	8	2
10000	1	0	3
22000	2	2	3
33000	3	3	3
68000	6	8	3

Size code

ΦD (mm)	Code
	10
4	C
5	D
6.3	E
8	F
10	G
11	H
12	J
12.5	W
13	K
14	X
16	L
18	M
19	Z
20	N
22	O
25	P
30	Q
35	R
40	Y
51.6	S
64.3	T
76.9	U
91	V
100	A

L (mm)	Code	
	11	12
5	0	5
7	0	7
11	1	1
12	1	2
16	1	6
20	2	0
25	2	5
30	3	0
35	3	5
40	4	0
46	4	6
50	5	0
60	6	0
80	8	0
100	A	0
115	B	5
120	C	0
130	D	0
140	E	0
160	G	0
200	K	0
220	M	0
236	N	6
250	P	0

Terminal code

Specification	Code	Size	
	13	14	15
Bulk packing	O	-	-
Taping (SMD Type)	D	0	0
Φ4~8 Taping F=5.0mm	P	5	0
Φ10~12.5 Taping F=5.0mm	B	5	0
Lead Cut L=3.5mm	C	3	5
Lead Cut L=11.0mm	C	B	0
Lead Forming & Cut L=4.5mm	F	-	-
Kink & Cut L=4.5mm	J	-	-
Snap-in type Terminal 4.0mm in length	K	-	-
Three Terminals	T	-	-
Ring clip mounting standard design	A	0	0
Ring clip mounting special design	S	-	-

Sleeve/Marking code

Sleeve/Marking	Code
	16
PVC	C
PET	T
Dark blue	B
Bright red	R
Sky-blue	S
Light blue	T
Pink	Z
Black	H
Purple-blue	V
Red	O