



ELECTROLYTIC CAPACITOR-ESR Series

ESR Series

1. Shorten body length to 5mm, for the demand of smaller and thinner electronic products.
2. Most suitable for VTRs, car radios, Car stereos.

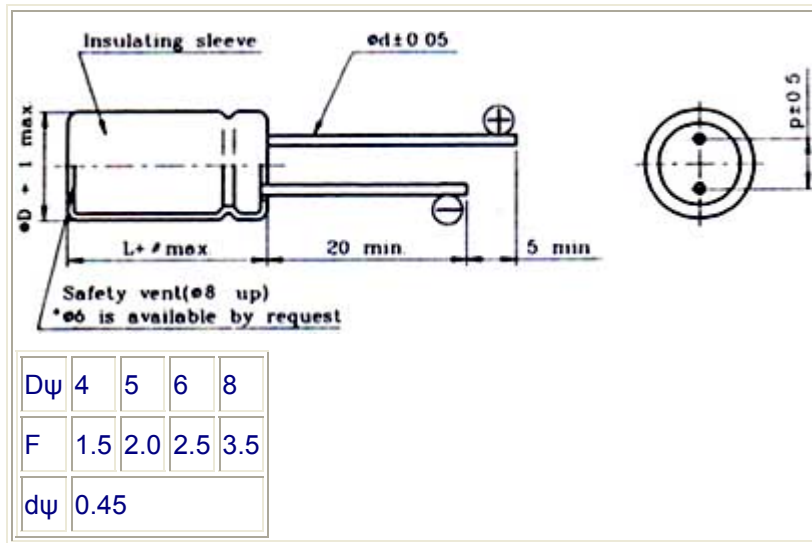
Characteristics

Voltage Range	4~50V
Capacitance Range	0.47~220 μ F
Temperature	-40~+105 $^{\circ}$ C
Capacitance Tolerance	+20% - 20%(at 20 $^{\circ}$ C, 120Hz)
Leakage Current	I=0.01CV or 3 μ A Whichever is greater (After 2 minutes)

Dissipation Facto	Rated voltage	4V	6.3V	10V	16V	25V	35V	50V
	tan δ (max)	0.35	0.24	0.20	0.16	0.14	0.12	0.10
(at 20 $^{\circ}$ C, 120Hz)								
Stability at Low Temperature	Impedance ratio at 120Hz							
	Rated voltage	4V	6.3V	10V	16V	25V	35V	50V
	Z-25 $^{\circ}$ C/Z 20 $^{\circ}$ C	7	4	3	2	2	2	2
	Z-40 $^{\circ}$ C/Z 20 $^{\circ}$ C	15	8	6	4	4	3	3
Load Life	After the rated voltage has been applied for 1000 hours at 105 $^{\circ}$ C							
	Capacitance change	Within +/-20% of initial value						
	D.F. tan δ	200% or less of initial specified value						
	Leakage current	Initial specified value or less						
Shelf Life	After storage for 500 hours at 105 $^{\circ}$ C, with no voltage applied and being stabilized at +20 $^{\circ}$ C, Capacitor shall meet the limit specified in load life.							

Diagram of Dimensions

Unit (mm)



Case Size of Standard Products

DxL (mm)

μF \ WV	4V	6.3V	10V	16V	25V	35V	50V
0.47μF					→		4x5
1μF	ALL BLANK VOLTAGE ON SLEEVE				→		4x5
2.2μF	MARKING IS SAME VOLTAGE "→" POINT				→		4x5
3.3μF	TO				→		4x5
4.7μF					4x5	4x5	5x5
10μF				4x5	4x5	5x5	6x5
22μF		4x5	4x5	5x5	5x5	6x5	
33μF	4x5	4x5	5x5	5x5	6x5		
47μF	4x5	5x5	5x5	6x5	6x5		
100μF	5x5	6x5	6x5	6x5	8x5		
220μF	6x5	6x5	8x5	8x5			

Maximum Ripple Current

mA rms 105°C 120Hz

$\mu\text{F} \setminus \text{WV}$	4V	6.3V	10V	16V	25V	35V	50V
0.47 μF							5
1 μF							10
2.2 μF							16
3.3 μF							16
4.7 μF					22	22	23
10 μF				28	28	30	35
22 μF		29	35	39	55	60	60
33 μF	26	38	43	60	65		
47 μF	34	46	65	70	80		
100 μF	61	71	80	91			
220 μF	82	91	120	145			