

## Radial Lead Type

Series : **FP** Type : **A**

**NEW**



### Features

- High ripple current (2 to 2.5 times as high as FC series)
- Large capacitance (Up to 60 % larger than FC series)
- Endurance : 105 °C 4000 h to 5000 h
- RoHS compliant

### Country of origin

- Malaysia

### Specifications

Category temperature range	-55 °C to +105 °C		
Rated voltage range	25 V.DC to 35 V.DC		
Capacitance range	510 µF to 2000 µF		
Capacitance tolerance	±20 % (120 Hz/+20 °C)		
Leakage current	I ≤ 0.01 CV (µA) After 2 minutes		
Dissipation factor (tan δ)	V.DC	25	35
	tan δ	0.14	0.12
(max.) (120 Hz/+20 °C)			
Add 0.02 per 1000 µF for products of 1000 µF or more.			
Endurance	After following life test with DC voltage and +105 °C±2 °C ripple current value applied. (The sum of DC and ripple peak voltage shall not exceed the rated working voltage) when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below.		
	Duration φ10 : 4000 hours, φ12.5 : 5000 hours		
	Capacitance change	Within ±30 % of the initial value	
	tan δ	≤ 300 % of the initial limit	
	DC leakage current	Within the initial limit	
Shelf life	After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)		
AEC-Q200	AEC-Q200 compliant		

### Frequency correction factor for ripple current

Rated voltage (V.DC)	Capacitance (µF)	Frequency (Hz)			
		120	1 k	10 k	100 k to
25 to 35	510 to 1000	0.65	0.75	0.95	1.00
	1200 to 2000	0.75	0.80	1.00	1.00

### Dimensions

\* L ≤ 16 : L±1.5  
L ≥ 20 : L±2.0

(Unit : mm)		
φD	10	12.5
L	16 to 20	20 to 25
φd	0.6	0.6
F	5.0	5.0

## Case size/ Impedance/ Ripple current

Rated voltage (V.DC)	25 V.DC to 35 V.DC			
	Case size (mm) ( $\phi$ D×L)	ESR ( $\Omega$ /100 kHz)		Ripple current (mA r.m.s./100 kHz)
		+20 °C	-10 °C	+105 °C
10	× 16	0.068	0.136	2500
10	× 20	0.052	0.104	3000
12.5	× 20	0.038	0.076	3250
12.5	× 25	0.030	0.060	4000

## Characteristics list

Rated voltage (V.DC)	Cap. (±20 %) ( $\mu$ F)	Case size (mm)		Specification			Lead length (mm)			Part No.	Min. Packaging Qty	
		$\phi$ D	L	Ripple current (100 kHz) (+105 °C) (mA r.m.s.)	ESR (100 kHz) (+20 °C) ( $\Omega$ )	Endurance (hours)	Lead dia. $\phi$ d	Lead space			Straight leads (pcs)	Taping (pcs)
								Straight	Taping *B			
25	680	10	16	2500	0.068	4000	0.6	5.0	5.0	EEUFP1E681( )	200	500
	1000	10	20	3000	0.052	4000	0.6	5.0	5.0	EEUFP1E102( )	200	500
	1500	12.5	20	3250	0.038	5000	0.6	5.0	5.0	EEUFP1E152( )	200	500
	2000	12.5	25	4000	0.030	5000	0.6	5.0	5.0	EEUFP1E202( )	200	500
35	510	10	16	2500	0.068	4000	0.6	5.0	5.0	EEUFP1V511( )	200	500
	750	10	20	3000	0.052	4000	0.6	5.0	5.0	EEUFP1V751( )	200	500
	1000	12.5	20	3250	0.038	5000	0.6	5.0	5.0	EEUFP1V102( )	200	500
	1300	12.5	25	4000	0.030	5000	0.6	5.0	5.0	EEUFP1V132( )	200	500

- When requesting taped product, please put the letter "B". Lead wire pitch \*B=5 mm.
- Please refer to the page of "Taping dimensions".

## Guidelines and precautions regarding the technical information and use of our products described in this online catalog.

- If you want to use our products described in this online catalog for applications requiring special qualities or reliability, or for applications where the failure or malfunction of the products may directly jeopardize human life or potentially cause personal injury (e.g. aircraft and aerospace equipment, traffic and transportation equipment, combustion equipment, medical equipment, accident prevention, anti-crime equipment, and/or safety equipment), it is necessary to verify whether the specifications of our products fit to such applications. Please ensure that you will ask and check with our inquiry desk as to whether the specifications of our products fit to such applications use before you use our products.
- The quality and performance of our products as described in this online catalog only apply to our products when used in isolation. Therefore, please ensure you evaluate and verify our products under the specific circumstances in which our products are assembled in your own products and in which our products will actually be used.
- If you use our products in equipment that requires a high degree of reliability, regardless of the application, it is recommended that you set up protection circuits and redundancy circuits in order to ensure safety of your equipment.
- The products and product specifications described in this online catalog are subject to change for improvement without prior notice. Therefore, please be sure to request and confirm the latest product specifications which explain the specifications of our products in detail, before you finalize the design of your applications, purchase, or use our products.
- The technical information in this online catalog provides examples of our products' typical operations and application circuits. We do not guarantee the non-infringement of third party's intellectual property rights and we do not grant any license, right, or interest in our intellectual property.
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## <Regarding the Certificate of Compliance with the EU RoHS Directive/REACH Regulations>

- The switchover date for compliance with the RoHS Directive/REACH Regulations varies depending on the part number or series of our products.
- When you use the inventory of our products for which it is unclear whether those products are compliant with the RoHS Directive/REACH Regulation, please select "Sales Inquiry" in the website inquiry form and contact us.

**We do not take any responsibility for the use of our products outside the scope of the specifications, descriptions, guidelines and precautions described in this online catalog.**

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