

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

Surface Mount Type **SP-Cap**

Series: **FD, CD, UD, UE**

Old series



[Our Requests]

Since this series is old, we don't recommend you to adopt it but CX & SX series for your new design.

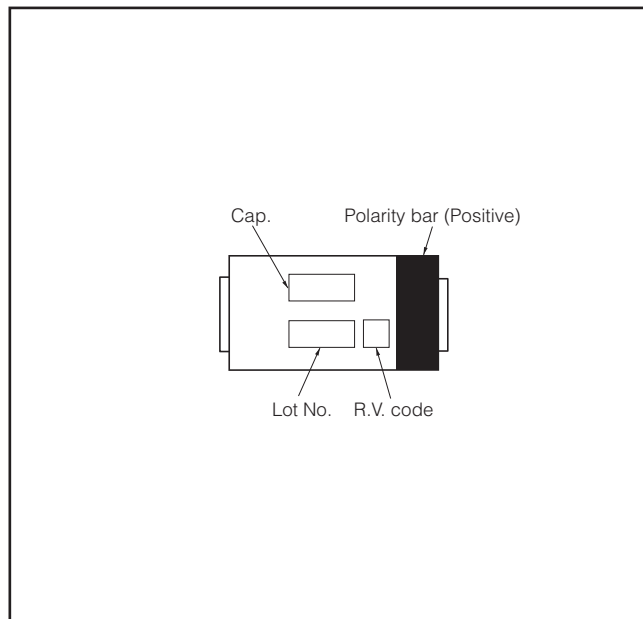
■ Features

- Low ESR
- Excellent Noise-absorbent Characteristics
- RoHS directive compliant

■ Specifications

Series & Size Code	FD	CD	UD	UE	
Category Temp. Range	-40 °C to +105 °C				
Rated Voltage Range	2 V.DC to 12.5 V.DC	2 V.DC to 16 V.DC	2 V.DC to 8 V.DC	2 V.DC to 8 V.DC	
Nominal Cap.Range	15 μF to 68 μF	2.2 μF to 220 μF	68 μF to 470 μF	100 μF to 560 μF	
Capacitance Tolerance	±20 %				
DC Leakage Current	Reflow 240 °C : I ≤ 0.06 CV (μA) 2minutes (2 V.DC to 4 V.DC) I ≤ 0.04 CV or 3 (μA) 2 minutes (6.3 V.DC to 16 V.DC) (Whichever is greater) Reflow 260 °C : I ≤ 0.1 CV (μA) 2 minutes				
tan δ	≤ 0.06 (120 Hz/+20 °C)		≤ 0.10 (120 Hz/+20 °C)		
Surge Voltage	Rated Voltage × 1.25 (15 °C to 35 °C)				
Endurance	After applying rated voltage for 1000 hours at 105 °C±2 °C, and then being stabilized at +20 °C, capacitor shall meet the following limits.				
	Capacitance change	±10% of initial measured value			
	tan δ	≤ Initial specified value			
	DC leakage current	≤ Initial specified value			
Moisture resistance	After storing for 500 hours at 60 °C, 90 %				
	Capacitance change of initial measurd value	2, 2.5 V.DC	4 V.DC	6.3 V.DC	8 V.DC to 16 V.DC
		+70, -20 %	+60, -20 %	+50, -20 %	+40, -20 %
	tan δ	≤ 200 % of initial specified value			
DC leakage current	≤ Initial specified value				

■ Marking



■ Dimensions in mm(not to scale)

(Unit : mm)

Series & Size Code	L±0.2	W1±0.2	W2±0.1	H	P±0.3
FD	7.3	4.3	2.4	1.1±0.1	1.3
CD	7.3	4.3	2.4	1.8±0.1	1.3
UD	7.3	4.3	2.4	2.8±0.2	1.3
UE	7.3	4.3	2.4	4.2±0.1	1.3

* Externals of figure are the reference.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

Standard Products

Reflow *3 <260 °C>

Series & Size Code	Rated Voltage (V.DC)	Capacitance (±20%) (μF)	Case Size			Specification		Part number	Reflow		Min. Packaging Qty (pcs)	
			L (mm)	W (mm)	H (mm)	*1 Ripple current (Ar.m.s.)	*2 ESR (mΩ max.)		*4 240 °C	260 °C		
FD	2	68	7.3	4.3	1.1	2.0	28	EEFFD0D680R	○	—	3500	
	2.5	56	7.3	4.3	1.1	2.0	28	EEFFD0E560R	○	—	3500	
	4	39	7.3	4.3	1.1	2.0	28	EEFFD0G390R	○	—	3500	
		47	7.3	4.3	1.1	2.0	28	EEFFD0G470R	○	—	3500	
	6.3	33	7.3	4.3	1.1	2.0	28	EEFFD0J330R	○	—	3500	
	8	22	7.3	4.3	1.1	2.0	28	EEFFD0K220R	○	—	3500	
	12.5	15	7.3	4.3	1.1	1.4	40	EEFFD1B150R	○	—	3500	
CD	2	100	7.3	4.3	1.8	2.5	18	EEFCD0D101ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0D101XE	—	○	3500	
		120	7.3	4.3	1.8	2.5	18	EEFCD0D121ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0D121XE	—	○	3500	
			150	7.3	4.3	1.8	2.5	18	EEFCD0D151ER	—	○	3500
			180	7.3	4.3	1.8	2.5	18	EEFCD0D181ER	—	○	3500
	2.5	82	7.3	4.3	1.8	2.5	18	EEFCD0E820ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0E820XE	—	○	3500	
		100	7.3	4.3	1.8	2.5	18	EEFCD0E101ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0E101XE	—	○	3500	
			120	7.3	4.3	1.8	2.5	18	EEFCD0E121ER	—	○	3500
			150	7.3	4.3	1.8	2.5	18	EEFCD0E151ER	—	○	3500
	4	56	7.3	4.3	1.8	2.5	18	EEFCD0G560ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0G560XE	—	○	3500	
		68	7.3	4.3	1.8	2.5	18	EEFCD0G680ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0G680XE	—	○	3500	
			82	7.3	4.3	1.8	2.5	18	EEFCD0G820ER	—	○	3500
			7.3	4.3	1.8	2.7	15	EEFCD0G820XE	—	○	3500	
	6.3	100	7.3	4.3	1.8	2.5	18	EEFCD0G101ER	—	○	3500	
			10	7.3	4.3	1.8	1.4	55	EEFCD0J100ER	—	○	3500
		22	7.3	4.3	1.8	1.6	40	EEFCD0J220ER	—	○	3500	
			33	7.3	4.3	1.8	2.0	28	EEFCD0J330ER	—	○	3500
			47	7.3	4.3	1.8	2.5	18	EEFCD0J470ER	—	○	3500
				7.3	4.3	1.8	2.7	15	EEFCD0J470XE	—	○	3500
		68	7.3	4.3	1.8	2.5	18	EEFCD0J680ER	—	○	3500	
			7.3	4.3	1.8	2.7	15	EEFCD0J680XE	—	○	3500	
		8	8.2	7.3	4.3	1.8	1.4	55	EEFCD0K8R2ER	—	○	3500
			15	7.3	4.3	1.8	1.6	40	EEFCD0K150ER	—	○	3500
			22	7.3	4.3	1.8	2.0	28	EEFCD0K220ER	—	○	3500
			33	7.3	4.3	1.8	2.5	18	EEFCD0K330ER	—	○	3500
	47		7.3	4.3	1.8	1.8	25	EEFCD0K470ER	—	○	3500	
	10	22	7.3	4.3	1.8	1.6	30	EEFCD1A220ER	—	○	3500	
		33	7.3	4.3	1.8	1.8	25	EEFCD1A330ER	—	○	3500	
		39	7.3	4.3	1.8	1.8	25	EEFCD1A390ER	—	○	3500	
	12.5	4.7	7.3	4.3	1.8	1.0	80	EEFCD1B4R7R	○	—	3500	
		10	7.3	4.3	1.8	1.0	60	EEFCD1B100R	○	—	3500	
		15	7.3	4.3	1.8	1.3	50	EEFCD1B150R	○	—	3500	
		22	7.3	4.3	1.8	1.6	30	EEFCD1B220R	○	—	3500	
	16	2.2	7.3	4.3	1.8	1.0	110	EEFCD1C2R2R	○	—	3500	
		4.7	7.3	4.3	1.8	1.0	80	EEFCD1C4R7R	○	—	3500	
		6.8	7.3	4.3	1.8	1.0	70	EEFCD1C6R8R	○	—	3500	
		8.2	7.3	4.3	1.8	1.3	45	EEFCD1C8R2R	○	—	3500	
	UD	2	330	7.3	4.3	2.8	3.0	15	EEFUD0D331ER	—	○	2000
				7.3	4.3	2.8	3.3	12	EEFUD0D331XE	—	○	2000
				7.3	4.3	2.8	3.4	9	EEFUD0D331LE	—	○	2000
			390	7.3	4.3	2.8	3.0	15	EEFUD0D391ER	—	○	2000
				7.3	4.3	2.8	3.4	9	EEFUD0D391LE	—	○	2000
				470	7.3	4.3	2.8	3.4	9	EEFUD0D471LE	—	○
2.5		220	7.3	4.3	2.8	3.0	15	EEFUD0E221ER	—	○	2000	
			7.3	4.3	2.8	3.3	12	EEFUD0E221XE	—	○	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0E221LE	—	○	2000	
		270	7.3	4.3	2.8	3.0	15	EEFUD0E271ER	—	○	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0E271LE	—	○	2000	

*1: Ripple current (100 kHz/ +20 to +105 °C), *2: ESR (100 kHz/+20 °C)

*3: Please refer to the page of "Mounting Specifications".

*4: Please contact Panasonic for details of allowable 240 °C reflow condition.

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

Standard Products

Reflow *3 <260 °C>

Series & Size Code	Rated Voltage (V.DC)	Capacitance (±20 %) (μF)	Case Size			Specification		Part number	Reflow		Min. Packaging Qty (pcs)	
			L (mm)	W (mm)	H (mm)	*1 Ripple current (Ar.m.s.)	*2 ESR (mΩ max.)		*4 240 °C	260 °C		
UD	4	120	7.3	4.3	2.8	3.0	15	EEFUD0G121ER	—	○	2000	
			7.3	4.3	2.8	3.4	12	EEFUD0G121XE	—	○	2000	
		150	7.3	4.3	2.8	3.0	15	EEFUD0G151ER	—	○	2000	
			7.3	4.3	2.8	3.3	12	EEFUD0G151XE	—	○	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0G151LE	—	○	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0G151LR	○	—	2000	
	180	7.3	4.3	2.8	2.5	18	EEFUD0G181ER	—	○	2000		
		7.3	4.3	2.8	3.4	9	EEFUD0G181LE	—	○	2000		
	6.3	100	7.3	4.3	2.8	3.0	15	EEFUD0J101ER	—	○	2000	
			7.3	4.3	2.8	3.3	12	EEFUD0J101XE	—	○	2000	
		120	7.3	4.3	2.8	3.0	15	EEFUD0J121ER	—	○	2000	
			7.3	4.3	2.8	3.3	12	EEFUD0J121XE	—	○	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0J121LR	○	—	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0J121LX	○	—	2000	
		150	7.3	4.3	2.8	2.5	18	EEFUD0J151ER	—	○	2000	
			7.3	4.3	2.8	3.4	9	EEFUD0J151LR	○	—	2000	
	8	68	7.3	4.3	2.8	3.0	15	EEFUD0K680ER	—	○	2000	
		100	7.3	4.3	2.8	2.5	18	EEFUD0K101ER	—	○	2000	
UE	2	270	7.3	4.3	4.2	3.3	12	EEFUE0D271ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0D271XE	—	○	2000	
		330	7.3	4.3	4.2	3.3	12	EEFUE0D331ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0D331XE	—	○	2000	
		390	7.3	4.3	4.2	3.3	12	EEFUE0D391ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0D391XE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0D391LE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0D391LR	○	—	2000	
		470	7.3	4.3	4.2	3.3	12	EEFUE0D471ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0D471XE	—	○	2000	
		560	7.3	4.3	4.2	3.7	7	EEFUE0D561ER	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0D561LE	—	○	2000	
	2.5	220	7.3	4.3	4.2	3.3	12	EEFUE0E221ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0E221XE	—	○	2000	
		270	7.3	4.3	4.2	3.3	12	EEFUE0E271ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0E271XE	—	○	2000	
		330	7.3	4.3	4.2	3.3	12	EEFUE0E331ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0E331XE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0E331LE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0E331LR	○	—	2000	
		390	7.3	4.3	4.2	3.3	12	EEFUE0E391ER	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0E391LE	—	○	2000	
		470	7.3	4.3	4.2	3.3	12	EEFUE0E471ER	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0E471LE	—	○	2000	
	4	180	7.3	4.3	4.2	3.3	12	EEFUE0G181ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0G181XE	—	○	2000	
		220	7.3	4.3	4.2	3.3	12	EEFUE0G221ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0G221XE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0G221LE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0G221LR	○	—	2000	
		270	7.3	4.3	4.2	3.3	12	EEFUE0G271ER	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0G271LE	—	○	2000	
		330	7.3	4.3	4.2	3.3	12	EEFUE0G331ER	—	○	2000	
			7.3	4.3	4.2	3.3	12	EEFUE0G331LE	—	○	2000	
		6.3	150	7.3	4.3	4.2	3.3	12	EEFUE0J151ER	—	○	2000
				7.3	4.3	4.2	3.5	10	EEFUE0J151XE	—	○	2000
	180		7.3	4.3	4.2	3.3	12	EEFUE0J181ER	—	○	2000	
			7.3	4.3	4.2	3.5	10	EEFUE0J181XE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0J181LE	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0J181LR	○	—	2000	
	220		7.3	4.3	4.2	3.0	15	EEFUE0J221ER	—	○	2000	
			7.3	4.3	4.2	3.7	7	EEFUE0J221LR	○	—	2000	
	8	100	7.3	4.3	4.2	3.3	12	EEFUE0K101ER	—	○	2000	
		150	7.3	4.3	4.2	3.0	15	EEFUE0K151ER	—	○	2000	

*1: Ripple current (100 kHz/ +20 to +105 °C), *2: ESR (100 kHz/+20 °C)

*3: Please refer to the page of "Mounting Specifications".

*4: Please contact Panasonic for details of allowable 240 °C reflow condition.