

Surface Mount Type

Series : **TC** Type : **V**

High temperature Lead-Free reflow



Features

- High ripple current (50 % higher than TP series)
- Endurance: 3000 h at 125 °C (D8 size: 2000 h)
- Added ESR specification after the endurance test
- Vibration-proof product is available upon request. (φ8 mm and larger)
- RoHS directive compliant

Specifications

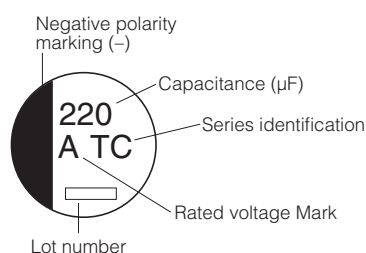
Category temp. range	-40 °C to +125 °C					
Rated voltage range	10 V.DC to 35 V.DC					
Nominal cap. range	47 µF to 470 µF					
Capacitance tolerance	±20 % (120 Hz/+20 °C)					
DC Leakage current	I ≤ 0.01 CV (µA) After 2 minutes					
Dissipation factor (tan δ)	Please see the attached characteristics list					
Endurance	After applying rated working voltage for 3000 hours (D8 size : 2000 h) at +125 °C±2 °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.					
	Capacitance change	±30 % of initial measured value				
	tan δ	≤ 300 % of initial specified value				
	DC leakage current	≤ initial specified value				
	ESR after Endurance (Ω/100kHz)		Size code			
			D8	F	G	
		Initial (+20 °C)	0.45	0.2	0.15	
	After 2000 h (-40 °C)	40	4.5	3.5		
Shelf life	After storage for 1000 hours at +125 °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)					
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.					
	Capacitance change	±10 % of initial measured value				
	tan δ	≤ initial specified value				
	DC leakage current	≤ initial specified value				
AEC-Q200	AEC-Q200 compliant					

Frequency correction factor for ripple current

Frequency (Hz)	120	1 k	10 k	100 k to
Correction factor	0.65	0.85	0.95	1.00

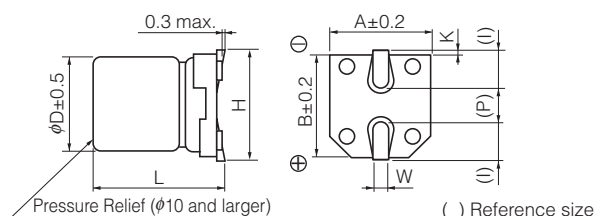
Marking

Example : 10 V.DC 220 μF
Marking color : BLACK



R. Voltage (V.DC)	10	16	25	35
Code	A	C	E	V

Dimensions (not to scale)



(Unit : mm)

Size code	φD	L	A, B	H	I	W	P	K
D8	6.3	7.7±0.3	6.6	7.8 max.	2.6	0.65±0.1	1.8	0.35 ^{+0.15} _{-0.20}
F	8.0	10.2±0.3	8.3	10.0max.	3.4	0.90±0.2	3.1	0.70±0.20
G	10.0	10.2±0.3	10.3	12.0max.	3.5	0.90±0.2	4.6	0.70±0.20

Characteristics list

Endurance : 125 °C 3000 h (D8 size : 2000 h)

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification			Part No.	Reflow	Min. Packaging Q'ty	
		φD	L		Ripple Current (100 kHz) (+125 °C) (mA r.m.s.)	ESR (100 kHz) (Ω)				tan δ (120 Hz) (+20 °C)	Taping (pcs)
						+20 °C	-40 °C				
10	220	8	10.2	F	410	0.20	3	0.30	EEETC1A221P	(8)	500
	330	10	10.2	G	750	0.15	2	0.30	EEETC1A331P	(8)	500
	470	10	10.2	G	750	0.15	2	0.30	EEETC1A471P	(8)	500
16	100	6.3	7.7	D8	300	0.45	5	0.23	EEETC1C101XP	(8)	900
		8	10.2	F	410	0.20	3	0.23	EEETC1C101P	(8)	500
	220	8	10.2	F	410	0.20	3	0.23	EEETC1C221P	(8)	500
	330	10	10.2	G	750	0.15	2	0.23	EEETC1C331P	(8)	500
	470	10	10.2	G	750	0.15	2	0.23	EEETC1C471P	(8)	500
25	100	8	10.2	F	410	0.20	3	0.18	EEETC1E101P	(8)	500
	220	10	10.2	G	750	0.15	2	0.18	EEETC1E221P	(8)	500
	330	10	10.2	G	750	0.15	2	0.18	EEETC1E331P	(8)	500
35	47	6.3	7.7	D8	300	0.45	5	0.16	EEETC1V470XP	(8)	900
		8	10.2	F	410	0.20	3	0.16	EEETC1V470P	(8)	500
	100	8	10.2	F	410	0.20	3	0.16	EEETC1V101P	(8)	500
	220	10	10.2	G	750	0.15	2	0.16	EEETC1V221P	(8)	500

- Please refer to the page of "Reflow Profile" and "The Taping Dimensions".
- When requesting vibration-proof product, please put the last "V" instead to "P"

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.
- If any of our products, product specifications and/or technical information in this online catalog is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially with regard to security and export control, shall be observed.

<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.