

Surface Mount Type

Series : Medium-size **TK** Type : **V**
High temperature
Lead-Free reflow (suffix : A*)



Features

- Endurance : 125 °C 2000 h
- Vibration-proof product is available upon request.
- RoHS compliant

Specifications

Category temperature range	-40 °C to +125 °C								
Rated voltage range	10 V.DC to 100 V.DC								
Capacitance range	47 μF to 4700 μF								
Capacitance tolerance	±20 % (120 Hz/+20 °C)								
Leakage current	I ≤ 0.01 CV After 2 minutes								
Dissipation factor (tan δ)	Please see the attached characteristics list								
Characteristics at low temperature	V.DC	10	16	25	35	50	63	80	100
	Z(-25 °C)/Z(+20 °C)	3	2	2	2	2	2	2	2
	Z(-40 °C)/Z(+20 °C)	6	4	4	3	3	3	3	3

(Impedance ratio at 120 Hz)

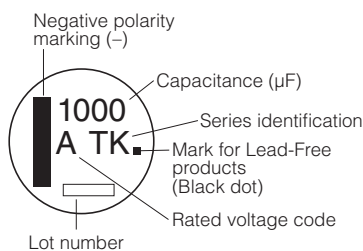
Endurance	After applying rated working voltage for 2000 hours at +125 °C±2 °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.	
	Capacitance change	Within ±30 % of the initial value (Miniaturization product : Within ±35 %)
	tan δ	≤300 % of the initial limit (Miniaturization product : Within 350 %)
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)	
	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.	
Resistance to soldering heat	Capacitance change	Within ±10 % of the initial value
	tan δ	Within the initial limit
	DC leakage current	Within the initial limit
AEC-Q200	AEC-Q200 compliant	

Frequency correction factor for ripple current

Frequency (Hz)	120	1 k	10 k	100 k to
Correction factor	0.75	0.90	0.95	1.00

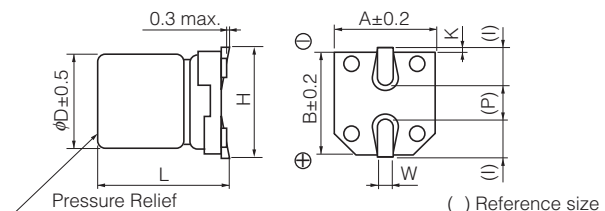
Marking

Example : 10 V.DC 1000 μF
 Marking color : BLACK



R. Voltage (V.DC)	10	16	25	35	50	63	80	100
Code	A	C	E	V	H	J	K	2A

Dimensions



(Unit : mm)

Size code	φD	L	A, B	H	I	W	P	K
H13	12.5	13.5±0.5	13.5	15.0 max.	4.7	0.90±0.3	4.4	0.70±0.3
J16	16.0	16.5±0.5	17.0	19.0 max.	5.5	1.20±0.3	6.7	0.70±0.3
K16	18.0	16.5±0.5	19.0	21.0 max.	6.7	1.20±0.3	6.7	0.70±0.3

Characteristics list

Endurance : 125 °C 2000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size* code	Specification			Part No.	Reflow	Min. Packaging Qty	
		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	1000	12.5	13.5	H13	800	0.120	1.80	0.30	EEETK1A102AQ	(9)	200
	1500	12.5	13.5	(H13)	800	0.120	1.80	0.30	EEETKA152UAQ	(9)	200
	2200	16	16.5	J16	1100	0.080	1.20	0.32	EEETK1A222AM	(9)	125
	3300	16	16.5	(J16)	1100	0.080	1.20	0.34	EEETKA332UAM	(9)	125
		18	16.5	K16	1300	0.075	1.10	0.36	EEETK1A332AM	(9)	125
	4700	18	16.5	K16	1300	0.075	1.10	0.38	EEETK1A472AM	(9)	125
16	330	12.5	13.5	H13	800	0.120	1.80	0.23	EEETK1C331AQ	(9)	200
	470	12.5	13.5	H13	800	0.120	1.80	0.23	EEETK1C471AQ	(9)	200
	680	12.5	13.5	H13	800	0.120	1.80	0.23	EEETK1C681AQ	(9)	200
	1000	12.5	13.5	(H13)	800	0.120	1.80	0.23	EEETKC102UAQ	(9)	200
		16	16.5	J16	1100	0.080	1.20	0.25	EEETK1C102AM	(9)	125
	2200	16	16.5	(J16)	1100	0.080	1.20	0.27	EEETKC222UAM	(9)	125
		18	16.5	K16	1300	0.075	1.10	0.27	EEETK1C222AM	(9)	125
3300	18	16.5	K16	1300	0.075	1.10	0.29	EEETK1C332AM	(9)	125	
25	330	12.5	13.5	H13	800	0.120	1.80	0.18	EEETK1E331AQ	(9)	200
	470	12.5	13.5	H13	800	0.120	1.80	0.18	EEETK1E471AQ	(9)	200
	680	12.5	13.5	(H13)	800	0.120	1.80	0.18	EEETKE681UAQ	(9)	200
		16	16.5	J16	1100	0.080	1.20	0.18	EEETK1E681AM	(9)	125
	1000	16	16.5	(J16)	1100	0.080	1.20	0.18	EEETKE102UAM	(9)	125
		18	16.5	K16	1300	0.075	1.10	0.18	EEETK1E102AM	(9)	125
	2200	18	16.5	K16	1300	0.075	1.10	0.20	EEETK1E222AM	(9)	125
35	330	12.5	13.5	H13	800	0.120	1.80	0.16	EEETK1V331AQ	(9)	200
	470	12.5	13.5	(H13)	800	0.120	1.80	0.16	EEETKV471UAQ	(9)	200
		16	16.5	J16	1100	0.080	1.20	0.16	EEETK1V471AM	(9)	125
	680	16	16.5	(J16)	1100	0.080	1.20	0.16	EEETKV681UAM	(9)	125
		18	16.5	K16	1300	0.075	1.10	0.16	EEETK1V681AM	(9)	125
	1000	18	16.5	K16	1300	0.075	1.10	0.16	EEETK1V102AM	(9)	125
50	220	12.5	13.5	H13	600	0.230	3.40	0.14	EEETK1H221AQ	(10)	200
	330	12.5	13.5	H13	600	0.230	3.40	0.14	EEETK1H331AQ	(10)	200
	470	16	16.5	J16	900	0.150	2.20	0.14	EEETK1H471AM	(10)	125
		16	16.5	(J16)	900	0.150	2.20	0.14	EEETKH681UAM	(10)	125
	680	18	16.5	K16	950	0.140	2.10	0.14	EEETK1H681AM	(10)	125
		1000	18	16.5	K16	950	0.140	2.10	0.14	EEETK1H102AM	(10)
63	100	12.5	13.5	H13	350	0.260	5.20	0.12	EEETK1J101AQ	(11)	200
	220	12.5	13.5	H13	350	0.260	5.20	0.12	EEETK1J221AQ	(11)	200
	330	16	16.5	J16	500	0.180	3.60	0.12	EEETK1J331AM	(11)	125
	470	16	16.5	J16	500	0.180	3.60	0.12	EEETK1J471AM	(11)	125
80	47	12.5	13.5	H13	250	0.420	8.40	0.12	EEETK1K470AQ	(11)	200
	100	12.5	13.5	(H13)	250	0.420	8.40	0.12	EEETKK101UAQ	(11)	200
		16	16.5	J16	350	0.300	6.00	0.12	EEETK1K101AM	(11)	125
	220	16	16.5	(J16)	350	0.300	6.00	0.12	EEETKK221UAM	(11)	125
		18	16.5	K16	400	0.280	5.60	0.12	EEETK1K221AM	(11)	125
	330	16	16.5	(J16)	350	0.300	6.00	0.12	EEETKK331UAM	(11)	125
		18	16.5	K16	400	0.280	5.60	0.12	EEETK1K331AM	(11)	125
470	18	16.5	K16	400	0.280	5.60	0.12	EEETK1K471AM	(11)	125	
100	47	12.5	13.5	H13	250	0.420	8.40	0.10	EEETK2A470AQ	(11)	200
	100	16	16.5	J16	350	0.300	6.00	0.10	EEETK2A101AM	(11)	125
	220	18	16.5	K16	400	0.280	5.60	0.10	EEETK2A221AM	(11)	125
	330	18	16.5	K16	400	0.280	5.60	0.10	EEETK2A331AM	(11)	125

* Size code() : Miniaturization product

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "Q" or "M"