# Surface Mount Type

Series: FT Type: V

High temperature Lead-Free reflow(suffix:A\*)



#### ■ Features

• Endurance: 2000 h at 105 °C

• Miniaturized, Low ESR (1 size smaller than series FK)

AEC-Q200 qualified\*
RoHS directive compliant

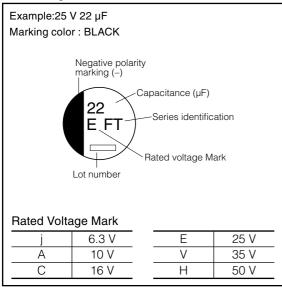
## ■ Specifications

- opcomoduone					
Category Temp. Range	−55 °C to +105 °C				
Rated W.V.Range	6.3 V.DC to 50 V.DC				
Nominal Cap.Range	10 μF to 2200 μF				
Capacitance Tolerance	±20 % (120 Hz/+20 °C)				
DC Leakage Current	I ≦ 0.01 CV After 2 minutes				
tan $\delta$	Please see the attached High temperature lead-free reflow products list.				
Endurance	After applying rated working voltage for 2000 hours at +105 °C±2 °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.				
	Capacitance change ±30 % of initial measured value				
	tan $\delta$	≤ 200 % of initial specified value			
	DC leakage current	≤ initial specified value			
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)				
Resistance to Soldering Heat	After reflow soldering and then being stabilized at +20 °C, capacitor shall meet the following limits.				
	Capacitance change	±10 % of initial measured value			
	tan $\delta$	≤ initial specified value			
	DC leakage current	≤ initial specified value			

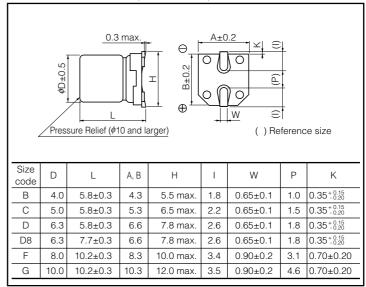
#### ■ Frequency correction factor for ripple current

Cap (µF)				Frequency (Hz)					
			120	1 k	10 k	100 k to			
10	to	470	0.65	0.85	0.95	1.00			
560	to	2200	0.70	0.90	0.95	1.00			

## Marking



#### ■ Dimensions in mm (not to scale)



\* This product qualify for AEC-Q200, but it has some deviations.

(Unit: mm)

Endurance : 105 °C 2000 h

# **Panasonic**

# ■ High temperature Lead-Free reflow Products

			Case size	ı	Specification					Min. Packaging Q'ty
W.V.	Cap. (±20 %)	Dia.	Length	<b>*</b> Size Code		ESR (100 kHz) (+20 °C)		Part No. (RoHS:compliant)	Reflow	Taping
(V)	(µF)	(mm)	(mm)		(mA r.m.s.)	$(\Omega)$	( = 5 )			(pcs)
6.3	100	4	5.8	В	160	0.85	0.26	EEEFT0J101AR	(5)	2000
	220	5	5.8	С	240	0.36	0.26	EEEFT0J221AR	(5)	1000
	330	6.3	5.8	D	300	0.26	0.26	EEEFT0J331AP	(5)	1000
	470	6.3	7.7	D8	600	0.16	0.26	EEEFTJ471XAP	(5)	900
	680	6.3	7.7	D8	600	0.16	0.26	EEEFTJ681XAP	(5)	900
	1500	8	10.2	F	850	0.08	0.26	EEEFT0J152AP	(6)	500
	2200	10	10.2	G	1190	0.06	0.28	EEEFT0J222AP	(6)	500
	68	4	5.8	В	160	0.85	0.19	EEEFT1A680AR	(5)	2000
	150	5	5.8	С	240	0.36	0.19	EEEFT1A151AR	(5)	1000
	220	6.3	5.8	D	300	0.26	0.19	EEEFT1A221AP	(5)	1000
10	330	6.3	7.7	D8	600	0.16	0.19	EEEFTA331XAP	(5)	900
	470	6.3	7.7	D8	600	0.16	0.19	EEEFTA471XAP	(5)	900
	1000	8	10.2	F	850	0.08	0.19	EEEFT1A102AP	(6)	500
	1500	10	10.2	G	1190	0.06	0.19	EEEFT1A152AP	(6)	500
	47	4	5.8	В	160	0.85	0.16	EEEFT1C470AR	(5)	2000
	68	5	5.8	С	240	0.36	0.16	EEEFT1C680AR	(5)	1000
	100	5	5.8	С	240	0.36	0.16	EEEFT1C101AR	(5)	1000
16	150	6.3	5.8	D	300	0.26	0.16	EEEFT1C151AP	(5)	1000
10	220	6.3	5.8	D	300	0.26	0.16	EEEFT1C221AP	(5)	1000
	330	6.3	7.7	D8	600	0.16	0.16	EEEFTC331XAP	(5)	900
	680	8	10.2	F	850	0.08	0.16	EEEFT1C681AP	(6)	500
	1000	10	10.2	G	1190	0.06	0.16	EEEFT1C102AP	(6)	500
	22	4	5.8	В	160	0.85	0.14	EEEFT1E220AR	(5)	2000
	33	4	5.8	В	160	0.85	0.14	EEEFT1E330AR	(5)	2000
	47	5	5.8	С	240	0.36	0.14	EEEFT1E470AR	(5)	1000
25	68	5	5.8	С	240	0.36	0.14	EEEFT1E680AR	(5)	1000
	100	6.3	5.8	D	300	0.26	0.14	EEEFT1E101AP	(5)	1000
	150	6.3	7.7	D8	600	0.16	0.14	EEEFTE151XAP	(5)	900
	220	6.3	7.7	D8	600	0.16	0.14	EEEFTE221XAP	(5)	900
	470	8	10.2	F	850	0.08	0.14	EEEFT1E471AP	(6)	500
	820	10	10.2	G	1190	0.06	0.14	EEEFT1E821AP	(6)	500
35	22	4	5.8	В	160	0.85	0.12	EEEFT1V220AR	(5)	2000
	33	5	5.8	С	240	0.36	0.12	EEEFT1V330AR	(5)	1000
	47	5	5.8	С	240	0.36	0.12	EEEFT1V470AR	(5)	1000
	68	6.3	5.8	D	300	0.26	0.12	EEEFT1V680AP	(5)	1000
	100	6.3	5.8	D	300	0.26	0.12	EEEFT1V101AP	(5)	1000
	150	6.3	7.7	D8	600	0.16	0.12	EEEFTV151XAP	(5)	900
	330	8	10.2	F	850	0.08	0.12	EEEFT1V331AP	(6)	500
	560	10	10.2	G	1190	0.06	0.12	EEEFT1V561AP	(6)	500
50	10	4	5.8	(B)	85	2.30	0.10	EEEFTH100UAR	(5)	2000
		5	5.8	С	165	0.88	0.10	EEEFT1H100AR	(5)	1000
	22	5	5.8	С	165	0.88	0.10	EEEFT1H220AR	(5)	1000
	47	6.3	5.8	D	195	0.68	0.10	EEEFT1H470AP	(5)	1000
	100	6.3	7.7	D8	350	0.34	0.10	EEEFTH101XAP	(5)	900
	220	8	10.2	F	670	0.18	0.10	EEEFT1H221AP	(6)	500
	330	10	10.2	G	900	0.12	0.10	EEEFT1H331AP	(6)	500

<sup>\*</sup> Size code( ):Miniaturization product

If Part number exceeds 12 digits, voltage code is abbreviated as follows; 0J→J, 1A→A, 1C→C, 1E→E, 1V→V, 1H→H · Please refer to the page of "Reflow Profile" and "The Taping Dimensions".