## Surface Mount Type

Series: **S** Type: **V** 

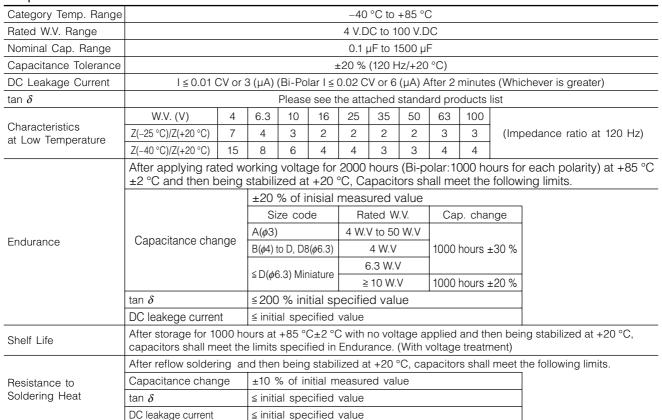
#### ■ Features

• Endurance: 85 °C 2000 h

• Vibration-proof product is available upon request. ( $\phi$ 8 mm and larger)

RoHS directive compliant

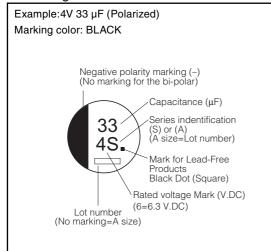
## ■ Specifications



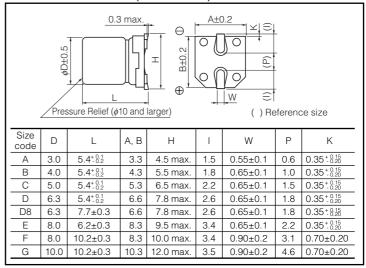
## ■ Frequency correction factor for ripple current

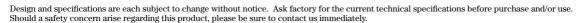
	Frequency (Hz)								
	50, 60	120	1 k	10 k to					
Correction factor	0.70	1.00	1.30	1.70					

#### Marking



### ■ Dimensions in mm (not to scale)





(Unit: mm)

# **Panasonic**

## ■ Standard Products

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			Case size		S	pecification	on	Part No. (RoHS:compliant)		Min. Packaging Q'ty
W.V.	Cap. (±20 %)	Dia.	Length	<b>*</b> Size Code		tan δ (120 Hz) (+20 °C)	Endurance		Reflow	Taping
(V)	(μF)	(mm)	(mm)		(mA r.m.s.)	(120 0)	(hours)			(pcs)
	22	3	5.4	А	19	0.37	1000	EEE0GS220SR **	(1)	2000
	33	4	5.4	В	26	0.35	1000	EEE0GA330SR	(1)	2000
	47	4	5.4	В	34	0.35	1000	EEE0GA470SR	(1)	2000
4	100	5	5.4	С	61	0.35	1000	EEE0GA101SR	(1)	1000
	220	6.3	5.4	D	82	0.35	1000	EEE0GA221SP	(1)	1000
	330	6.3	5.4	(D)	80	0.50	1000	EEE0GA331WP	(1)	1000
	470	6.3	7.7	D8	200	0.35	1000	EEE0GA471XP	(1)	900
	22	3	5.4	(A)	20	0.35	1000	EEE0JS220WR **	(1)	2000
		4	5.4	В	29	0.26	2000	EEE0JA220SR	(1)	2000
	33	4	5.4	(B)	22	0.35	1000	EEE0JA330WR	(1)	2000
	47	4	5.4	(B)	36	0.35	1000	EEE0JA470WR	(1)	2000
		5	5.4	C	46	0.26	2000	EEE0JA470SR	(1)	1000
	100	5	5.4	(C)	47	0.35	1000	EEE0JA101WR	(1)	1000
6.3	000	6.3	5.4	D (D)	71	0.26	2000	EEE0JA101SP	(1)	1000
	220	6.3 6.3	5.4 7.7	(D)	74	0.35	1000	EEE0JA221WP	(1)	1000
	330			D8 E	188	0.26	2000	EEE0JA331XP	(1)	900
	470	8	6.2 10.2	F	300 380	0.35 0.35	2000	EEE0JA331P EEE0JA471P	(2)	1000 500
	470	8	10.2	(F)	500	0.35	2000	EEE0JA102UP	(2)	500
	1000	10	10.2	G (F)	700	0.35	2000	EEE0JA1020P	(2)	500
	1500	10	10.2	G	750	0.35	2000	EEE0JA152P	(2)	500
	22	4	5.4	(B)	28	0.30	1000	EEE1AA220WR	(1)	2000
		4	5.4	(B)	29	0.30	1000	EEE1AA330WR	(1)	2000
	33	5	5.4	C	43	0.20	2000	EEE1AA330SR	(1)	1000
	47	5	5.4	(C)	43	0.30	1000	EEE1AA470WR	(1)	1000
		5	5.4	(C)	50	0.30	1000	EEE1AA101WR	(1)	1000
4.0	100	6.3	5.4	D	70	0.26	2000	EEE1AA101SP	(1)	1000
10	000	6.3	7.7	D8	173	0.20	2000	EEE1AA221XP	(1)	900
	220	8	6.2	Е	250	0.26	2000	EEE1AA221P	(2)	1000
	330	8	10.2	F	390	0.26	2000	EEE1AA331P	(2)	500
	470	8	10.2	(F)	390	0.26	2000	EEE1AA471UP	(2)	500
	470	10	10.2	G	400	0.26	2000	EEE1AA471P	(2)	500
	1000	10	10.2	G	580	0.26	2000	EEE1AA102P	(2)	500
	10	3	5.4	Α	20	0.18	1000	EEE1CS100SR **	(1)	2000
	10	4	5.4	В	28	0.16	2000	EEE1CA100SR	(1)	2000
	22	4	5.4	(B)	28	0.26	1000	EEE1CA220WR	(1)	2000
	22	5	5.4	С	39	0.16	2000	EEE1CA220SR	(1)	1000
	33	5	5.4	(C)	35	0.26	1000	EEE1CA330WR	(1)	1000
	47	5	5.4	(C)	39	0.26	1000	EEE1CA470WR	(1)	1000
	''	6.3	5.4	D	70	0.16	2000	EEE1CA470SP	(1)	1000
16	100	6.3	5.4	(D)	70	0.26	1000	EEE1CA101WP	(1)	1000
	220	8	6.2	E	200	0.20	2000	EEE1CA101P	(2)	1000
		6.3	7.7	D8	162	0.16	2000	EEE1CA221XP	(1)	900
	-	8	10.2	F	280	0.20	2000	EEE1CA221P	(2)	500
	330	8	10.2	(F)	320	0.20	2000	EEE1CA331UP	(2)	500
		10	10.2	G	380	0.20	2000	EEE1CA331P	(2)	500
	470	8	10.2	(F)	350	0.20	2000	EEE1CA471UP	(2)	500
		10	10.2	G	420	0.20	2000	EEE1CA471P	(2)	500

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

<sup>\*\*</sup> Dia.3mm is not recommended for new design. Please consider Dia.4mm.(Available upon request)

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"

## ■ Standard Products

W.V.	Cap. (±20 %)	Case size			Specification					Min. Packaging Q'ty
		Dia.	Length	<b>*</b> Size Code		tan δ (120 Hz) (+20 °C)	Endurance	Part No. (RoHS:compliant)	Reflow	Taping
(V)	(µF)	(mm)	(mm)		(mA r.m.s.)	,	(hours)			(pcs)
	4.7	3	5.4	А	12	0.16	1000	EEE1ES4R7SR **	(1)	2000
	4.7	4	5.4	В	22	0.14	2000	EEE1EA4R7SR	(1)	2000
	10	4	5.4	(B)	22	0.20	1000	EEE1EA100WR	(1)	2000
	10	5	5.4	С	28	0.14	2000	EEE1EA100SR	(1)	1000
	22	5	5.4	(C)	35	0.20	1000	EEE1EA220WR	(1)	1000
		6.3	5.4	D	55	0.14	2000	EEE1EA220SP	(1)	1000
	33	5	5.4	(C)	42	0.20	1000	EEE1EA330WR	(1)	1000
	33	6.3	5.4	D	65	0.14	2000	EEE1EA330SP	(1)	1000
25	47	6.3	5.4	(D)	70	0.20	1000	EEE1EA470WP	(1)	1000
		6.3	7.7	D8	143	0.14	2000	EEE1EA101XP	(1)	900
	100	8	6.2	(E)	91	0.16	2000	EEE1EA101UP	(2)	1000
		8	10.2	F	180	0.16	2000	EEE1EA101P	(2)	500
	220	8	10.2	(F)	230	0.16	2000	EEE1EA221UP	(2)	500
		10.0	10.2	G	310	0.16	2000	EEE1EA221P	(2)	500
	330	8	10.2	(F)	270	0.16	2000	EEE1EA331UP	(2)	500
		10	10.2	G	340	0.16	2000	EEE1EA331P	(2)	500
	470	10	10.2	G	380	0.16	2000	EEE1EA471P	(2)	500
	2.2	3	5.4	А	8	0.14	1000	EEE1VS2R2SR **	(1)	2000
	3.3	3	5.4	А	10	0.14	1000	EEE1VS3R3SR **	(1)	2000
	4.7	4	5.4	В	22	0.12	2000	EEE1VA4R7SR	(1)	2000
	40	4	5.4	(B)	22	0.16	1000	EEE1VA100WR	(1)	2000
	10	5	5.4	С	30	0.12	2000	EEE1VA100SR	(1)	1000
	00	5	5.4	(C)	36	0.16	1000	EEE1VA220WR	(1)	1000
	22	6.3	5.4	D	60	0.12	2000	EEE1VA220SP	(1)	1000
	00	6.3	5.4	(D)	60	0.16	1000	EEE1VA330WP	(1)	1000
35	33	8	6.2	E	130	0.14	2000	EEE1VA330P	(2)	1000
	4-7	6.3	5.4	(D)	70	0.16	1000	EEE1VA470WP	(1)	1000
	47	8	6.2	E	165	0.14	2000	EEE1VA470P	(2)	1000
		6.3	7.7	D8	132	0.12	2000	EEE1VA101XP	(1)	900
	100	8	10.2	(F)	140	0.14	2000	EEE1VA101UP	(2)	500
		10	10.2	Ğ	210	0.14	2000	EEE1VA101P	(2)	500
	000	8	10.2	(F)	200	0.14	2000	EEE1VA221UP	(2)	500
	220	10	10.2	Ğ	310	0.14	2000	EEE1VA221P	(2)	500
	330	10	10.2	G	350	0.14	2000	EEE1VA331P	(2)	500

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

<sup>\*\*</sup> Dia.3mm is not recommended for new design. Please consider Dia.4mm.(Available upon request)

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"

## ■ Standard Products

Endurance : 65 C 2500 II										
	Cap. (±20 %)	Case size			Specification					Min. Packaging Q'ty
W.V.		Dia.	Length	<b>*</b> Size Code	(+85 °C)	tan δ (120 Hz) (+20 °C)	Endurance	Part No. (RoHS:compliant)	Reflow	Taping
(V)	(µF)	(mm)	(mm)		(mA r.m.s.)		(hours)			(pcs)
	0.1	3	5.4	Α	1	0.14	1000	EEE1HS0R1SR **	(1)	2000
	0.1	4	5.4	В	1	0.12	2000	EEE1HA0R1SR	(1)	2000
	0.22	3	5.4	А	2	0.14	1000	EEE1HSR22SR **	(1)	2000
	0.22	4	5.4	В	2	0.12	2000	EEE1HAR22SR	(1)	2000
	0.33	3	5.4	Α	3	0.14	1000	EEE1HSR33SR **	(1)	2000
	0.00	4	5.4	В	3	0.12	2000	EEE1HAR33SR	(1)	2000
	0.47	3	5.4	А	5	0.14	1000	EEE1HSR47SR **	(1)	2000
	0.47	4	5.4	В	5	0.12	2000	EEE1HAR47SR	(1)	2000
	1	3	5.4	А	8	0.14	1000	EEE1HS010SR **	(1)	2000
	•	4	5.4	В	10	0.12	2000	EEE1HA010SR	(1)	2000
	2.2	3	5.4	А	8	0.14	1000	EEE1HS2R2SR **	(1)	2000
	۷.۷	4	5.4	В	16	0.12	2000	EEE1HA2R2SR	(1)	2000
	3.3	4	5.4	В	16	0.12	2000	EEE1HA3R3SR	(1)	2000
50	4.7	4	5.4	(B)	18	0.14	1000	EEE1HA4R7WR	(1)	2000
30	4.7	5	5.4	С	23	0.12	2000	EEE1HA4R7SR	(1)	1000
	10	5	5.4	(C)	27	0.14	1000	EEE1HA100WR	(1)	1000
		6.3	5.4	D	35	0.12	2000	EEE1HA100SP	(1)	1000
	22	6.3	5.4	(D)	40	0.14	1000	EEE1HA220WP	(1)	1000
		8	6.2	Е	120	0.12	2000	EEE1HA220P	(2)	1000
	33	6.3	7.7	D8	85	0.12	2000	EEE1HA330XP	(1)	900
		8	6.2	(E)	65	0.12	2000	EEE1HA330UP	(2)	1000
		8	10.2	F	110	0.12	2000	EEE1HA330P	(2)	500
	47	6.3	7.7	D8	105	0.12	2000	EEE1HA470XP	(1)	900
		8	10.2	(F)	110	0.12	2000	EEE1HA470UP	(2)	500
		10	10.2	G	130	0.12	2000	EEE1HA470P	(2)	500
	100	8	10.2	(F)	200	0.12	2000	EEE1HA101UP	(2)	500
		10	10.2	G	250	0.12	2000	EEE1HA101P	(2)	500
	220	10	10.2	G	300	0.12	2000	EEE1HA221P	(2)	500
	22	8	6.2	(E)	40	0.18	2000	EEE1JA220UP	(2)	1000
		8	10.2	F	40	0.18	2000	EEE1JA220P	(2)	500
63	33	8	10.2	F	45	0.18	2000	EEE1JA330P	(2)	500
50	47	8	10.2	(F)	45	0.18	2000	EEE1JA470UP	(2)	500
		10	10.2	G	45	0.18	2000	EEE1JA470P	(2)	500
-	100	10	10.2	G	60	0.18	2000	EEE1JA101P	(2)	500
	3.3	8	6.2	Е	50	0.18	2000	EEE2AA3R3P	(2)	1000
	4.7	8	6.2	(E)	50	0.18	2000	EEE2AA4R7UP	(2)	1000
100	7.1	8	10.2	F	80	0.18	2000	EEE2AA4R7P	(2)	500
	10	8	6.2	(E)	50	0.18	2000	EEE2AA100UP	(2)	1000
	. •	8	10.2	F	85	0.18	2000	EEE2AA100P	(2)	500
	22	8	10.2	(F)	55	0.18	2000	EEE2AA220UP	(2)	500
		10	10.2	G	85	0.18	2000	EEE2AA220P	(2)	500
	33	10	10.2	G	90	0.18	2000	EEE2AA330P	(2)	500

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

<sup>\*\*</sup> Dia.3mm is not recommended for new design. Please consider Dia.4mm.(Available upon request)
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"

# **Panasonic**

## ■ Standard Products (Bi-polar)

W.V. Cap.			Case size		S	pecification	on	Part No. (RoHS:compliant)	Reflow	Min. Packaging Q'ty
	Cap. (±20 %)	Dia.	Length	Size Code	Ripple Current (120 Hz) (+85 °C)	tan δ (120 Hz) (+20 °C)	Endurance			Taping
(V)	(µF)	(mm)	(mm)		(mA r.m.s.)		(hours)			(pcs)
6.3	22	5	5.4	С	29	0.52	2000	EEE0JA220NR	(1)	1000
0.3	47	6.3	5.4	D	46	0.52	2000	EEE0JA470NP	(1)	1000
10	10	4	5.4	В	25	0.40	2000	EEE1AA100NR	(1)	2000
10	33	6.3	5.4	D	43	0.40	2000	EEE1AA330NP	(1)	1000
	4.7	4	5.4	В	20	0.32	2000	EEE1CA4R7NR	(1)	2000
16	10	5	5.4	С	25	0.32	2000	EEE1CA100NR	(1)	1000
	22	6.3	5.4	D	39	0.32	2000	EEE1CA220NP	(1)	1000
	3.3	4	5.4	В	12	0.28	2000	EEE1EA3R3NR	(1)	2000
25	4.7	5	5.4	С	21	0.28	2000	EEE1EA4R7NR	(1)	1000
	10	6.3	5.4	D	28	0.28	2000	EEE1EA100NP	(1)	1000
	2.2	4	5.4	В	12	0.24	2000	EEE1VA2R2NR	(1)	2000
35	4.7	5	5.4	С	22	0.24	2000	EEE1VA4R7NR	(1)	1000
	10	6.3	5.4	D	30	0.24	2000	EEE1VA100NP	(1)	1000
	0.22	4	5.4	В	2	0.24	2000	EEE1HAR22NR	(1)	2000
	0.33	4	5.4	В	3	0.24	2000	EEE1HAR33NR	(1)	2000
50	0.47	4	5.4	В	5	0.24	2000	EEE1HAR47NR	(1)	2000
	1	4	5.4	В	10	0.24	2000	EEE1HA010NR	(1)	2000
	2.2	5	5.4	С	16	0.24	2000	EEE1HA2R2NR	(1)	1000
	3.3	5	5.4	С	21	0.24	2000	EEENZ1H3R3R	(1)	1000
	4.7	6.3	5.4	D	31	0.24	2000	EEE1HA4R7NP	(1)	1000

 $<sup>\</sup>cdot$  Please refer to the page of "Reflow Profile" and "The Taping Dimensions".  $\cdot$  When requesting vibration-proof product, please put the last "V" instead to "P"