

### Snap-in Type

Series: HA Type : TS

- Features Endurance: 105°C 2000 h  
Length 20 mm  
RoHS directive compliant

Country of Origin

Japan  
Malaysia  
U.S.A (\*\*\*)



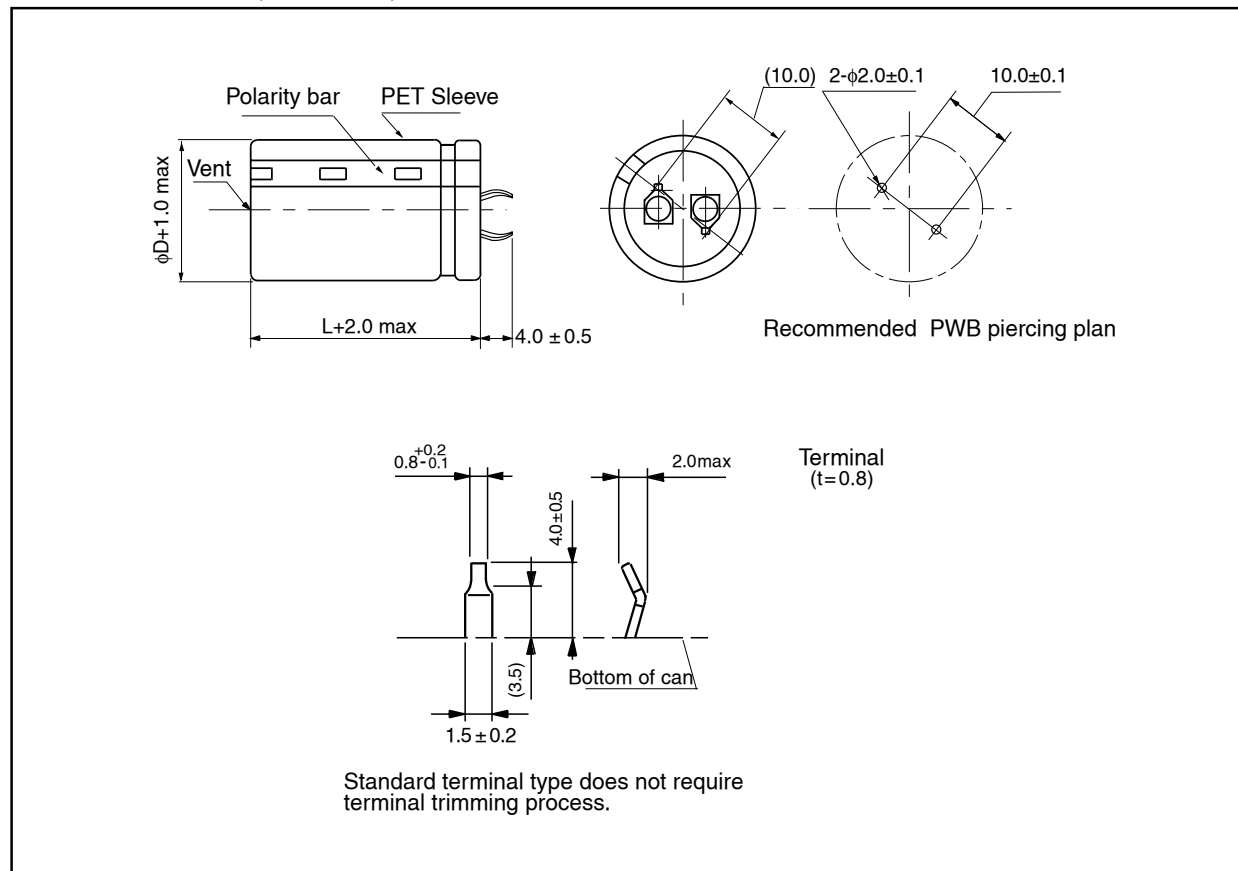
- Recommended Applications  
Smoothing circuits, AC adaptor

(\*\*\*) Regarding USA product,  
Please check PEDCA's  
Catalog.

#### Specifications

Category temp. range	-40 to +105°C	-40 to +105°C	-25 to +105°C					
Rated W.V. Range	10 to 100 V .DC	160 to 250 V .DC	315 to 400 V .DC					
Nominal Cap. Range	330 to 68000 μ F	68 to 470 μ F	33 to 120 μ F					
Capacitance Tolerance	±20 % (120Hz/+20°C)							
DC Leakage Current	3√CV (μA) max. after 5 minutes application of rated working voltage at +20°C. C:Capacitance(μF) V:W.V. (V.DC)							
tan δ	Please see the attached standard products list							
Frequency Correction Factor for Ripple Current	Frequency (Hz)	50	60	100	120	500	1k	10k to
	10 to 100V	0.93	0.95	0.99	1.00	1.05	1.08	1.15
	160 to 400V	0.75	0.80	0.95	1.00	1.20	1.25	1.40
Endurance	After 2000 hours application of DC voltage with specified ripple current (≤ rated DC working voltage) at +105°C, the capacitor shall meet the following limits.							
	Capacitance change	±20 % of initial measured value						
	tan δ	≤ 200 % of initial specified value						
	DC leakage current	≤ initial specified value						
Shelf Life	After storage for 1000 hours at +105±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)							

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



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### ■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Part No. PET sleeve Terminal Length 4.0mm (Without P.V.C.plate)	Min.Packaging Q'ty  (pcs)
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (A)	tan δ (120Hz) (+20°C)		
10	10000	22	25	1.8	0.55	ECEC1AA103BJ	200
	12000	22	30	2.2	0.55	ECEC1AA123BJ	200
	15000	22	35	2.3	0.55	ECEC1AA153BJ	200
		25	25	2.3	0.55	ECEC1AA153CJ	200
	18000	22	40	2.4	0.55	ECEC1AA183BJ	200
		25	30	2.4	0.55	ECEC1AA183CJ	200
	22000	22	45	2.6	0.55	ECEC1AA223BJ	200
		25	35	2.6	0.55	ECEC1AA223CJ	200
		30	25	2.6	0.55	ECEC1AA223DJ	200
	27000	22	50	3.1	0.55	ECEC1AA273BJ	200
		25	40	3.1	0.55	ECEC1AA273CJ	200
		30	30	3.1	0.55	ECEC1AA273DJ	200
		35	25	3.1	0.55	ECEC1AA273EJ	200
	33000	25	45	3.4	0.55	ECEC1AA333CJ	200
		30	35	3.4	0.55	ECEC1AA333DJ	100
		35	30	3.4	0.55	ECEC1AA333EJ	200
	39000	25	50	3.7	0.61	ECEC1AA393CJ	200
		30	40	3.7	0.61	ECEC1AA393DJ	100
		35	30	3.7	0.61	ECEC1AA393EJ	200
	47000	30	45	4.2	0.69	ECEC1AA473DJ	100
35		35	4.2	0.69	ECEC1AA473EJ	100	
56000	30	50	5.0	0.78	ECEC1AA563DJ	100	
	35	40	5.0	0.78	ECEC1AA563EJ	100	
68000	35	50	5.5	0.90	ECEC1AA683EJ	100	
16	6800	22	25	2.2	0.45	ECEC1CA682BJ	200
	8200	22	30	2.4	0.45	ECEC1CA822BJ	200
	10000	22	30	2.6	0.45	ECEC1CA103BJ	200
		25	25	2.6	0.45	ECEC1CA103CJ	200
	12000	22	35	2.9	0.45	ECEC1CA123BJ	200
		25	30	2.9	0.45	ECEC1CA123CJ	200
		30	25	2.9	0.45	ECEC1CA123DJ	200
	15000	22	40	3.2	0.45	ECEC1CA153BJ	200
		25	35	3.2	0.45	ECEC1CA153CJ	200
		30	30	3.2	0.45	ECEC1CA153DJ	200
	18000	22	45	3.5	0.45	ECEC1CA183BJ	200
		25	40	3.5	0.45	ECEC1CA183CJ	200
		30	30	3.5	0.45	ECEC1CA183DJ	200
		35	25	3.5	0.45	ECEC1CA183EJ	200
	22000	25	45	3.8	0.45	ECEC1CA223CJ	200
		30	35	3.8	0.45	ECEC1CA223DJ	100
35		30	3.8	0.45	ECEC1CA223EJ	200	
27000	25	50	4.2	0.45	ECEC1CA273CJ	200	

Endurance : 105°C 2000 h

Terminal Pitch : 10mm

When capacitors of φ35x45L and φ35x50L are mounted on PWB, reinforce them with mounting clamp or adhesives.(Avoid using adhesives including halogenated compositions.)

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■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Part No. PET sleeve Terminal Length 4.0mm (Without P.V.C.plate)	Min. Packaging Qty (pcs)
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (A)	tan δ (120Hz) (+20°C)		
16	27000	30	40	4.2	0.45	ECEC1CA273DJ	100
		35	30	4.2	0.45	ECEC1CA273EJ	200
	33000	30	45	4.7	0.45	ECEC1CA333DJ	100
		35	35	4.7	0.45	ECEC1CA333EJ	100
	39000	30	50	5.1	0.51	ECEC1CA393DJ	100
		35	40	5.1	0.51	ECEC1CA393EJ	100
	47000	35	45	5.5	0.59	ECEC1CA473EJ	100
56000	35	50	6.0	0.68	ECEC1CA563EJ	100	
25	4700	22	25	2.0	0.35	ECEC1EA472BJ	200
	5600	22	30	2.2	0.35	ECEC1EA562BJ	200
	6800	22	30	2.4	0.35	ECEC1EA682BJ	200
		25	25	2.4	0.35	ECEC1EA682CJ	200
	8200	22	35	2.7	0.35	ECEC1EA822BJ	200
		25	30	2.7	0.35	ECEC1EA822CJ	200
		30	25	2.7	0.35	ECEC1EA822DJ	200
	10000	22	40	3.0	0.35	ECEC1EA103BJ	200
		25	35	3.0	0.35	ECEC1EA103CJ	200
		30	30	3.0	0.35	ECEC1EA103DJ	200
	12000	22	45	3.2	0.35	ECEC1EA123BJ	200
		25	40	3.2	0.35	ECEC1EA123CJ	200
		30	30	3.2	0.35	ECEC1EA123DJ	200
		35	25	3.2	0.35	ECEC1EA123EJ	200
	15000	25	45	3.6	0.35	ECEC1EA153CJ	200
		30	35	3.6	0.35	ECEC1EA153DJ	100
		35	30	3.6	0.35	ECEC1EA153EJ	200
	18000	25	50	3.9	0.35	ECEC1EA183CJ	200
		30	40	3.9	0.35	ECEC1EA183DJ	100
		35	35	3.9	0.35	ECEC1EA183EJ	100
22000	30	45	4.3	0.35	ECEC1EA223DJ	100	
	35	35	4.3	0.35	ECEC1EA223EJ	100	
27000	35	45	4.8	0.35	ECEC1EA273EJ	100	
33000	35	50	5.5	0.35	ECEC1EA333EJ	100	
35	3300	22	25	1.9	0.30	ECEC1VA332BJ	200
	3900	22	30	2.0	0.30	ECEC1VA392BJ	200
	4700	22	35	2.2	0.30	ECEC1VA472BJ	200
		25	25	2.2	0.30	ECEC1VA472CJ	200
	5600	22	35	2.4	0.30	ECEC1VA562BJ	200
		25	30	2.4	0.30	ECEC1VA562CJ	200
		30	25	2.4	0.30	ECEC1VA562DJ	200
	6800	22	40	2.6	0.30	ECEC1VA682BJ	200
		25	35	2.6	0.30	ECEC1VA682CJ	200
30		30	2.6	0.30	ECEC1VA682DJ	200	

Endurance : 105°C 2000h

Terminal Pitch : 10mm

When capacitors of φ35x45L and φ35x50L are mounted on PWB, reinforce them with mounting clamp or adhesives.(Avoid using adhesives including halogenated compositions.)

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### ■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Part No. PET sleeve Terminal Length 4.0mm (Without P.V.C.plate)	Min.Packaging Q'ty  (pcs)
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (A)	tan δ (120Hz) (+20°C)		
35	8200	22	50	2.9	0.30	ECEC1VA822BJ	200
		25	40	2.9	0.30	ECEC1VA822CJ	200
		30	30	2.9	0.30	ECEC1VA822DJ	200
		35	25	2.9	0.30	ECEC1VA822EJ	200
	10000	25	45	3.2	0.30	ECEC1VA103CJ	200
		30	35	3.2	0.30	ECEC1VA103DJ	100
		35	30	3.2	0.30	ECEC1VA103EJ	200
	12000	25	50	3.5	0.30	ECEC1VA123CJ	200
		30	40	3.5	0.30	ECEC1VA123DJ	100
		35	30	3.5	0.30	ECEC1VA123EJ	200
	15000	30	45	3.9	0.30	ECEC1VA153DJ	100
		35	35	3.9	0.30	ECEC1VA153EJ	100
	18000	35	40	4.3	0.30	ECEC1VA183EJ	100
	22000	35	50	5.0	0.30	ECEC1VA223EJ	100
50	1800	22	25	1.5	0.25	ECEC1HA182BJ	200
	2200	22	30	1.7	0.25	ECEC1HA222BJ	200
	2700	22	30	1.8	0.25	ECEC1HA272BJ	200
		25	25	1.8	0.25	ECEC1HA272CJ	200
	3300	22	35	2.0	0.25	ECEC1HA332BJ	200
		25	30	2.0	0.25	ECEC1HA332CJ	200
	3900	22	40	2.2	0.25	ECEC1HA392BJ	200
		25	35	2.2	0.25	ECEC1HA392CJ	200
		30	25	2.2	0.25	ECEC1HA392DJ	200
	4700	22	45	2.5	0.25	ECEC1HA472BJ	200
		25	40	2.5	0.25	ECEC1HA472CJ	200
		30	30	2.5	0.25	ECEC1HA472DJ	200
		35	25	2.5	0.25	ECEC1HA472EJ	200
	5600	22	50	2.8	0.25	ECEC1HA562BJ	200
		25	40	2.8	0.25	ECEC1HA562CJ	200
		30	35	2.8	0.25	ECEC1HA562DJ	100
		35	30	2.8	0.25	ECEC1HA562EJ	200
	6800	25	50	3.3	0.25	ECEC1HA682CJ	200
		30	40	3.3	0.25	ECEC1HA682DJ	100
		35	30	3.3	0.25	ECEC1HA682EJ	200
	8200	30	45	3.6	0.25	ECEC1HA822DJ	100
35		35	3.6	0.25	ECEC1HA822EJ	100	
10000	30	50	4.0	0.25	ECEC1HA103DJ	100	
	35	40	4.0	0.25	ECEC1HA103EJ	100	
12000	35	45	4.5	0.25	ECEC1HA123EJ	100	
15000	35	50	4.8	0.25	ECEC1HA153EJ	100	
63	1200	22	25	1.4	0.20	ECEC1JA122BJ	200
	1500	22	30	1.5	0.20	ECEC1JA152BJ	200

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Terminal Pitch : 10mm

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■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Part No. PET sleeve Terminal Length 4.0mm (Without P.V.C.plate)	Min.Packaging Q'ty  (pcs)
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (A)	tan δ (120Hz) (+20°C)		
63	1800	22	30	1.7	0.20	ECEC1JA182BJ	200
		25	25	1.7	0.20	ECEC1JA182CJ	200
	2200	22	35	2.0	0.20	ECEC1JA222BJ	200
		25	30	2.0	0.20	ECEC1JA222CJ	200
	2700	22	40	2.2	0.20	ECEC1JA272BJ	200
		25	35	2.2	0.20	ECEC1JA272CJ	200
		30	25	2.2	0.20	ECEC1JA272DJ	200
	3300	22	50	2.5	0.20	ECEC1JA332BJ	200
		25	40	2.5	0.20	ECEC1JA332CJ	200
		30	30	2.5	0.20	ECEC1JA332DJ	200
		35	25	2.5	0.20	ECEC1JA332EJ	200
	3900	25	45	2.7	0.20	ECEC1JA392CJ	200
		30	35	2.7	0.20	ECEC1JA392DJ	100
		35	30	2.7	0.20	ECEC1JA392EJ	200
	4700	25	50	3.0	0.20	ECEC1JA472CJ	200
		30	40	3.0	0.20	ECEC1JA472DJ	100
		35	30	3.0	0.20	ECEC1JA472EJ	200
	5600	30	45	3.3	0.20	ECEC1JA562DJ	100
		35	35	3.3	0.20	ECEC1JA562EJ	100
	6800	30	50	3.6	0.20	ECEC1JA682DJ	100
35		40	3.6	0.20	ECEC1JA682EJ	100	
8200	35	45	3.9	0.20	ECEC1JA822EJ	100	
10000	35	50	4.4	0.20	ECEC1JA103EJ	100	
80	820	22	25	1.2	0.17	ECEC1KA821BJ	200
	1000	22	30	1.3	0.17	ECEC1KA102BJ	200
		25	25	1.3	0.17	ECEC1KA102CJ	200
	1200	22	30	1.5	0.17	ECEC1KA122BJ	200
		25	25	1.5	0.17	ECEC1KA122CJ	200
	1500	22	35	1.7	0.17	ECEC1KA152BJ	200
		25	30	1.7	0.17	ECEC1KA152CJ	200
	1800	22	40	1.8	0.17	ECEC1KA182BJ	200
		25	35	1.8	0.17	ECEC1KA182CJ	200
		30	25	1.8	0.17	ECEC1KA182DJ	200
	2200	22	45	2.1	0.17	ECEC1KA222BJ	200
		25	35	2.1	0.17	ECEC1KA222CJ	200
		30	30	2.1	0.17	ECEC1KA222DJ	200
		35	25	2.1	0.17	ECEC1KA222EJ	200
	2700	25	45	2.4	0.17	ECEC1KA272CJ	200
		30	35	2.4	0.17	ECEC1KA272DJ	100
35		30	2.4	0.17	ECEC1KA272EJ	200	
3300	25	50	2.6	0.17	ECEC1KA332CJ	200	
	30	40	2.6	0.17	ECEC1KA332DJ	100	

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Terminal Pitch : 10mm

When capacitors of φ35x45L and φ35x50L are mounted on PWB, reinforce them with mounting clamp or adhesives.(Avoid using adhesives including halogenated compositions.)

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### ■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Part No. PET sleeve Terminal Length 4.0mm (Without P.V.C.plate)	Min. Packaging Q'ty (pcs)
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (A)	tan δ (120Hz) (+20°C)		
80	3300	35	30	2.6	0.17	ECEC1KA332EJ	200
	3900	30	45	3.0	0.17	ECEC1KA392DJ	100
		35	35	3.0	0.17	ECEC1KA392EJ	100
	4700	30	50	3.3	0.17	ECEC1KA472DJ	100
		35	40	3.3	0.17	ECEC1KA472EJ	100
	5600	35	45	3.7	0.17	ECEC1KA562EJ	100
6800	35	50	3.9	0.17	ECEC1KA682EJ	100	
100	560	22	25	1.1	0.15	ECEC2AA561BJ	200
	820	22	30	1.4	0.15	ECEC2AA821BJ	200
		25	25	1.4	0.15	ECEC2AA821CJ	200
	1000	22	35	1.7	0.15	ECEC2AA102BJ	200
		25	30	1.7	0.15	ECEC2AA102CJ	200
	1200	22	40	1.8	0.15	ECEC2AA122BJ	200
		25	35	1.8	0.15	ECEC2AA122CJ	200
		30	25	1.8	0.15	ECEC2AA122DJ	200
	1500	22	45	2.1	0.15	ECEC2AA152BJ	200
		25	40	2.1	0.15	ECEC2AA152CJ	200
		30	30	2.1	0.15	ECEC2AA152DJ	200
		35	25	2.1	0.15	ECEC2AA152EJ	200
	1800	25	45	2.3	0.15	ECEC2AA182CJ	200
		30	35	2.3	0.15	ECEC2AA182DJ	100
		35	30	2.3	0.15	ECEC2AA182EJ	200
	2200	25	50	2.6	0.15	ECEC2AA222CJ	200
		30	40	2.6	0.15	ECEC2AA222DJ	100
		35	30	2.6	0.15	ECEC2AA222EJ	200
	2700	30	45	2.9	0.15	ECEC2AA272DJ	100
		35	35	2.9	0.15	ECEC2AA272EJ	100
	3300	30	50	3.2	0.15	ECEC2AA332DJ	100
35		40	3.2	0.15	ECEC2AA332EJ	100	
3900	35	45	3.6	0.15	ECEC2AA392EJ	100	
4700	35	50	3.8	0.15	ECEC2AA472EJ	100	

Endurance : 105°C 2000h

Terminal Pitch : 10mm

When capacitors of φ35x45L and φ35x50L are mounted on PWB, reinforce them with mounting clamp or adhesives.(Avoid using adhesives including halogenated compositions.)

■ Standard Products (L: 20mm)

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Part No. PET sleeve Terminal Length 4.0mm (Without P.V.C.plate)	Min.Packaging Q'ty  (pcs)
		Dia. (mm)	Length (mm)	Ripple current (120Hz) (+105°C) (A)	tan δ (120Hz) (+20°C)		
16	3300	22	20	1.30	0.45	ECEC1CA332BJ	200
	4700	25	20	1.60	0.45	ECEC1CA472CJ	200
	6800	30	20	1.80	0.45	ECEC1CA682DJ	200
	10000	35	20	2.40	0.45	ECEC1CA103EJ	200
25	2200	22	20	1.30	0.35	ECEC1EA222BJ	200
	3300	25	20	1.60	0.35	ECEC1EA332CJ	200
	4700	30	20	1.80	0.35	ECEC1EA472DJ	200
	6800	35	20	2.30	0.35	ECEC1EA682EJ	200
35	1500	22	20	1.10	0.30	ECEC1VA152BJ	200
	2200	25	20	1.40	0.30	ECEC1VA222CJ	200
	3300	30	20	1.70	0.30	ECEC1VA332DJ	200
	4700	35	20	2.00	0.30	ECEC1VA472EJ	200
50	1000	22	20	0.90	0.25	ECEC1HA102BJ	200
	1500	25	20	1.20	0.25	ECEC1HA152CJ	200
	2200	30	20	1.40	0.25	ECEC1HA222DJ	200
	3300	35	20	1.70	0.25	ECEC1HA332EJ	200
63	680	22	20	0.90	0.20	ECEC1JA681BJ	200
	1000	25	20	1.20	0.20	ECEC1JA102CJ	200
	1500	30	20	1.30	0.20	ECEC1JA152DJ	200
	2200	35	20	1.50	0.20	ECEC1JA222EJ	200
80	470	22	20	0.80	0.17	ECEC1KA471BJ	200
	680	25	20	1.00	0.17	ECEC1KA681CJ	200
	1000	30	20	1.20	0.17	ECEC1KA102DJ	200
	1500	35	20	1.40	0.17	ECEC1KA152EJ	200
100	330	22	20	0.80	0.15	ECEC2AA331BJ	200
	470	25	20	1.00	0.15	ECEC2AA471CJ	200
	680	30	20	1.10	0.15	ECEC2AA681DJ	200
	1000	35	20	1.20	0.15	ECEC2AA102EJ	200
160	150	22	20	0.55	0.15	ECEC2CA151BJ	200
	220	25	20	0.75	0.15	ECEC2CA221CJ	200
	330	30	20	1.00	0.15	ECEC2CA331DJ	200
	470	35	20	1.15	0.15	ECEC2CA471EJ	200
180	120	22	20	0.50	0.15	ECEC2PA121BJ	200
	180	25	20	0.70	0.15	ECEC2PA181CJ	200
	270	30	20	0.87	0.15	ECEC2PA271DJ	200
	390	35	20	1.00	0.15	ECEC2PA391EJ	200
200	100	22	20	0.50	0.15	ECEC2DA101BJ	200
	150	25	20	0.65	0.15	ECEC2DA151CJ	200
	220	30	20	0.87	0.15	ECEC2DA221DJ	200
	330	35	20	1.10	0.15	ECEC2DA331EJ	200
250	68	22	20	0.40	0.15	ECEC2EA680BJ	200
	100	25	20	0.50	0.15	ECEC2EA101CJ	200
	150	30	20	0.65	0.15	ECEC2EA151DJ	200
	220	35	20	0.67	0.15	ECEC2EA221EJ	200
400	33	22	20	0.20	0.15	ECEC2GA330BJ	200
	47	25	20	0.25	0.15	ECEC2GA470CJ	200
	68	30	20	0.35	0.15	ECEC2GA680DJ	200
	100	35	20	0.47	0.15	ECEC2GA101EJ	200

Endurance : 105°C 2000h

Terminal Pitch : 10mm

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. Mar.2006