

TS-HB Series 105°C, 3000 hours

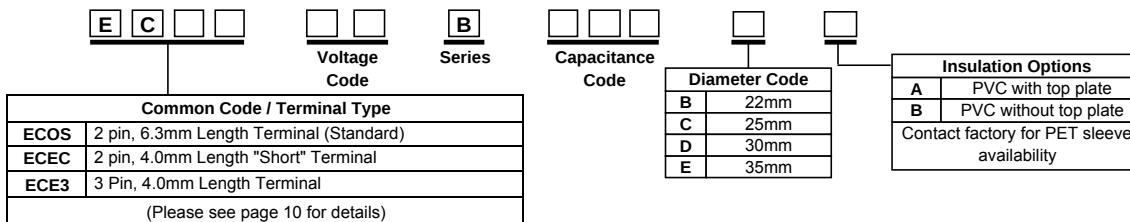
- **Compact size (20 ~ 25% smaller than TS-HA series)**
- **2 and 3 pin versions available**
- **Long 3000 hour life at 105°C with high ripple current capability**
- **Can vent construction**



Rated Working Voltage:	160 ~ 250 VDC						385 ~ 450 VDC						
Operating Temperature:	-40 ~ +105°C						-25 ~ +105°C						
Nominal Capacitance:	330 ~ 2700μF (±20%)						82 ~ 560μF (±20%)						
Dissipation Factor: (120 Hz, +20°C)	Working Voltage [V]:						160 ~ 450						
	Max. D.F. (%):						15						
Leakage Current:	3√CV (μA) max. after 5 minutes; C = Capacitance in μF, V = WV												
Ripple Current Multipliers:	Ripple Current Frequency Factors						Ripple Current Ambient Temperature Factors*						
	Frequency(Hz):	50	60	100~120	500	1k	10k~	Ambient Temperature:	105°C	85°C	70°C	60°C	≤45°C
	Multiplier:	0.75	0.8	1.0	1.2	1.25	1.4	Multiplier:	1.0	1.7	2.0	2.2	2.35
Endurance:	3000 hours at +105°C with maximum specified ripple current (see page 6)												

*Use of temperature ripple current multipliers may limit life to the hours specified for the maximum operating temperature.

Part Number System



TS-HB Standard Ratings (part numbers shown with 2 pins, 6.3mm length terminal, and top vinyl plate)

Cap. (μF)	Size (mm) D x L	Max 105°C R.C. (A _{rms})		20°C ESR (Ω, max.)		Panasonic Part Number
		120Hz	10kHz~	120Hz	20kHz	
160 VDC Working, 200 VDC Surge						
470	22 x 30	1.40	1.96	0.423	0.190	ECOS2CB471BA
560	22 x 35	1.50	2.10	0.355	0.160	ECOS2CB561BA
680	22 x 40	1.70	2.38	0.293	0.132	ECOS2CB681BA
	25 x 30	1.70	2.38	0.293	0.132	ECOS2CB681CA
820	22 x 45	2.00	2.80	0.243	0.109	ECOS2CB821BA
	25 x 35	2.00	2.80	0.243	0.109	ECOS2CB821CA
1000	22 x 50	2.20	3.08	0.199	0.090	ECOS2CB102BA
	25 x 40	2.20	3.08	0.199	0.090	ECOS2CB102CA
	30 x 30	2.20	3.08	0.199	0.090	ECOS2CB102DA
	35 x 25	2.20	3.08	0.199	0.090	ECOS2CB102EA
1200	25 x 45	2.30	3.22	0.180	0.090	ECOS2CB122CA
	30 x 35	2.30	3.22	0.180	0.090	ECOS2CB122DA
	35 x 30	2.30	3.22	0.180	0.090	ECOS2CB122EA
1500	30 x 40	2.50	3.50	0.144	0.072	ECOS2CB152DA
	35 x 30	2.50	3.50	0.144	0.072	ECOS2CB152EA
1800	30 x 45	2.70	3.78	0.129	0.064	ECOS2CB182DA
	35 x 35	2.70	3.78	0.129	0.064	ECOS2CB182EA
2200	35 x 45	2.90	4.06	0.105	0.063	ECOS2CB222EA
2700	35 x 50	3.10	4.34	0.086	0.052	ECOS2CB272EA
200 VDC Working, 250 VDC Surge						
390	22 x 30	1.30	1.82	0.510	0.230	ECOS2DB391BA
	25 x 25	1.30	1.82	0.510	0.230	ECOS2DB391CA
470	22 x 35	1.40	1.96	0.423	0.190	ECOS2DB471BA
	25 x 30	1.40	1.96	0.423	0.190	ECOS2DB471CA
560	22 x 40	1.50	2.10	0.355	0.160	ECOS2DB561BA
	25 x 30	1.50	2.10	0.355	0.160	ECOS2DB561CA
	30 x 25	1.50	2.10	0.355	0.160	ECOS2DB561DA
680	22 x 45	1.70	2.38	0.293	0.132	ECOS2DB681BA
	25 x 35	1.70	2.38	0.293	0.132	ECOS2DB681CA
820	25 x 45	2.00	2.80	0.263	0.118	ECOS2DB821CA
	30 x 30	2.00	2.80	0.263	0.118	ECOS2DB821DA
820	35 x 25	2.00	2.80	0.263	0.118	ECOS2DB821EA

Cap. (μF)	Size (mm) D x L	Max 105°C R.C. (A _{rms})		20°C ESR (Ω, max.)		Panasonic Part Number
		120Hz	10kHz~	120Hz	20kHz	
200 VDC Working, 250 VDC Surge (continued)						
1000	25 x 50	2.20	3.08	0.216	0.108	ECOS2DB102CA
	30 x 35	2.20	3.08	0.216	0.108	ECOS2DB102DA
	35 x 30	2.20	3.08	0.216	0.108	ECOS2DB102EA
1200	30 x 40	2.30	3.22	0.193	0.097	ECOS2DB122DA
	35 x 35	2.30	3.22	0.193	0.097	ECOS2DB122EA
1500	30 x 50	2.50	3.50	0.155	0.077	ECOS2DB152DA
	35 x 40	2.50	3.50	0.155	0.077	ECOS2DB152EA
1800	35 x 45	2.70	3.78	0.129	0.077	ECOS2DB182EA
2200	35 x 50	2.90	4.06	0.105	0.063	ECOS2DB222EA
250 VDC Working, 300 VDC Surge						
180	22 x 25	0.90	1.26	0.921	0.461	ECOS2EB181BA
220	22 x 30	1.00	1.40	0.754	0.377	ECOS2EB221BA
270	22 x 35	1.10	1.54	0.614	0.307	ECOS2EB271BA
330	22 x 40	1.20	1.68	0.502	0.251	ECOS2EB331BA
	25 x 30	1.20	1.68	0.502	0.251	ECOS2EB331CA
390	22 x 45	1.30	1.82	0.425	0.213	ECOS2EB391BA
	30 x 25	1.30	1.82	0.425	0.213	ECOS2EB391DA
470	22 x 50	1.40	1.96	0.353	0.176	ECOS2EB471BA
	25 x 40	1.40	1.96	0.353	0.176	ECOS2EB471CA
	30 x 30	1.40	1.96	0.353	0.176	ECOS2EB471DA
560	25 x 45	1.50	2.10	0.296	0.148	ECOS2EB561CA
	35 x 25	1.50	2.10	0.296	0.148	ECOS2EB561EA

TS-HB Standard Ratings (continued)

Cap. (μF)	Size (mm) D x L	Max 105°C R.C. (A _{rms})		20°C ESR (Ω, max.)		Panasonic Part Number
		120Hz	10kHz~	120Hz	20kHz	
385 VDC Working, 435 VDC Surge						
82	22 x 30	0.64	0.90	2.022	0.809	ECOS2TB820BA
100	22 x 30	0.69	0.97	1.658	0.663	ECOS2TB101BA
	25 x 25	0.69	0.97	1.658	0.663	ECOS2TB101CA
120	22 x 35	0.75	1.05	1.382	0.553	ECOS2TB121BA
	25 x 30	0.75	1.05	1.382	0.553	ECOS2TB121CA
150	22 x 40	0.82	1.15	1.105	0.442	ECOS2TB151BA
	25 x 30	0.82	1.15	1.105	0.442	ECOS2TB151CA
	30 x 25	0.82	1.15	1.105	0.442	ECOS2TB151DA
180	22 x 45	0.95	1.33	0.921	0.368	ECOS2TB181BA
	25 x 35	0.95	1.33	0.921	0.368	ECOS2TB181CA
	30 x 30	0.95	1.33	0.921	0.368	ECOS2TB181DA
220	25 x 45	1.10	1.54	0.754	0.301	ECOS2TB221CA
	30 x 30	1.10	1.54	0.829	0.332	ECOS2TB221DA
	35 x 25	1.10	1.54	0.829	0.332	ECOS2TB221EA
270	25 x 50	1.20	1.68	0.675	0.270	ECOS2TB271CA
	35 x 30	1.20	1.68	0.675	0.270	ECOS2TB271EA
330	30 x 45	1.35	1.89	0.553	0.221	ECOS2TB331DA
	35 x 35	1.35	1.89	0.553	0.221	ECOS2TB331EA
390	30 x 50	1.55	2.17	0.510	0.204	ECOS2TB391DA
470	35 x 45	1.75	2.45	0.423	0.212	ECOS2TB471EA
560	35 x 50	1.80	2.52	0.355	0.178	ECOS2TB561EA
400 VDC Working, 450 VDC Surge						
82	22 x 30	0.64	0.90	2.022	0.708	ECOS2GB820BA
100	22 x 30	0.69	0.97	1.658	0.580	ECOS2GB101BA
	25 x 25	0.69	0.97	1.658	0.580	ECOS2GB101CA
120	22 x 35	0.75	1.05	1.382	0.484	ECOS2GB121BA
	25 x 30	0.75	1.05	1.382	0.484	ECOS2GB121CA
150	22 x 40	0.82	1.15	1.105	0.387	ECOS2GB151BA
	25 x 30	0.82	1.15	1.105	0.387	ECOS2GB151CA
	30 x 25	0.82	1.15	1.105	0.387	ECOS2GB151DA
180	22 x 45	0.95	1.33	0.921	0.322	ECOS2GB181BA
	25 x 35	0.95	1.33	0.921	0.322	ECOS2GB181CA
	30 x 30	0.95	1.33	0.921	0.322	ECOS2GB181DA
220	25 x 45	1.10	1.54	0.754	0.264	ECOS2GB221CA
	30 x 30	1.10	1.54	0.754	0.264	ECOS2GB221DA
	35 x 25	1.10	1.54	0.754	0.264	ECOS2GB221EA
270	25 x 50	1.20	1.68	0.614	0.215	ECOS2GB271CA
	30 x 35	1.20	1.68	0.614	0.215	ECOS2GB271DA
	35 x 30	1.20	1.68	0.614	0.215	ECOS2GB271EA
330	30 x 45	1.35	1.89	0.502	0.201	ECOS2GB331DA
	35 x 35	1.35	1.89	0.502	0.201	ECOS2GB331EA
390	30 x 50	1.55	2.17	0.425	0.170	ECOS2GB391DA
	35 x 40	1.55	2.17	0.425	0.170	ECOS2GB391EA
470	35 x 45	1.75	2.45	0.353	0.141	ECOS2GB471EA
560	35 x 50	1.80	2.52	0.296	0.118	ECOS2GB561EA
420 VDC Working, 470 VDC Surge						
100	22 x 30	0.64	0.90	1.824	0.821	ECOS2SB101BA
	25 x 25	0.64	0.90	1.824	0.821	ECOS2SB101CA
120	22 x 35	0.72	1.01	1.520	0.684	ECOS2SB121BA
	25 x 30	0.72	1.01	1.520	0.684	ECOS2SB121CA
150	22 x 40	0.79	1.11	1.216	0.547	ECOS2SB151BA
	25 x 30	0.79	1.11	1.216	0.547	ECOS2SB151CA
	30 x 25	0.79	1.11	1.216	0.547	ECOS2SB151DA
180	22 x 45	0.87	1.22	1.013	0.456	ECOS2SB181BA
	25 x 40	0.87	1.22	1.013	0.456	ECOS2SB181CA
	30 x 30	0.87	1.22	1.013	0.456	ECOS2SB181DA
220	25 x 45	1.00	1.40	0.829	0.373	ECOS2SB221CA
	30 x 30	1.00	1.40	0.829	0.373	ECOS2SB221DA
	35 x 25	1.00	1.40	0.829	0.373	ECOS2SB221EA
270	25 x 50	1.19	1.67	0.675	0.304	ECOS2SB271CA
	30 x 40	1.19	1.67	0.675	0.304	ECOS2SB271DA
	35 x 30	1.19	1.67	0.675	0.304	ECOS2SB271EA
330	30 x 45	1.38	1.93	0.553	0.249	ECOS2SB331DA
	35 x 35	1.38	1.93	0.553	0.249	ECOS2SB331EA
390	30 x 50	1.55	2.17	0.468	0.210	ECOS2SB391DA
	35 x 40	1.55	2.17	0.468	0.210	ECOS2SB391EA
470	35 x 45	1.74	2.44	0.388	0.175	ECOS2SB471EA
560	35 x 50	1.90	2.66	0.326	0.147	ECOS2SB561EA

Cap. (μF)	Size (mm) D x L	Max 105°C R.C. (A _{rms})		20°C ESR (Ω, max.)		Panasonic Part Number
		120Hz	10kHz~	120Hz	20kHz	
450 VDC Working, 500 VDC Surge (continued)						
82	22 x 30	0.56	0.78	2.022	0.708	ECOS2WB820BA
	25 x 25	0.56	0.78	2.022	0.708	ECOS2WB820CA
100	22 x 35	0.64	0.90	1.658	0.580	ECOS2WB101BA
	25 x 30	0.64	0.90	1.658	0.580	ECOS2WB101CA
120	22 x 40	0.72	1.01	1.382	0.484	ECOS2WB121BA
	25 x 35	0.72	1.01	1.382	0.484	ECOS2WB121CA
	30 x 25	0.72	1.01	1.382	0.484	ECOS2WB121DA
150	22 x 50	0.79	1.11	1.105	0.387	ECOS2WB151BA
	25 x 40	0.79	1.11	1.105	0.387	ECOS2WB151CA
	30 x 30	0.79	1.11	1.105	0.387	ECOS2WB151DA
	35 x 25	0.79	1.11	1.105	0.387	ECOS2WB151EA
180	25 x 45	0.87	1.22	0.921	0.322	ECOS2WB181CA
	30 x 35	0.87	1.22	0.921	0.322	ECOS2WB181DA
220	25 x 50	1.00	1.40	0.754	0.264	ECOS2WB221CA
	30 x 40	1.00	1.40	0.754	0.264	ECOS2WB221DA
	35 x 30	1.00	1.40	0.754	0.264	ECOS2WB221EA
270	30 x 45	1.19	1.67	0.614	0.215	ECOS2WB271DA
	35 x 35	1.19	1.67	0.614	0.215	ECOS2WB271EA
330	30 x 50	1.38	1.93	0.502	0.176	ECOS2WB331DA
	35 x 40	1.38	1.93	0.502	0.176	ECOS2WB331EA
390	35 x 45	1.55	2.17	0.425	0.149	ECOS2WB391EA
470	35 x 50	1.74	2.44	0.353	0.123	ECOS2WB471EA

Cap. (μF)	Size (mm) D x L	Max 105°C R.C. (A _{rms})		20°C ESR (Ω, max.)		Panasonic
		120Hz	10kHz~	120Hz	20kHz	Part Number
450 VDC Working, 500 VDC Surge (continued)						
82	22 x 30	0.56	0.78	2.022	0.708	ECOS2WB820BA
	25 x 25	0.56	0.78	2.022	0.708	ECOS2WB820CA
100	22 x 35	0.64	0.90	1.658	0.580	ECOS2WB101BA
	25 x 30	0.64	0.90	1.658	0.580	ECOS2WB101CA
120	22 x 40	0.72	1.01	1.382	0.484	ECOS2WB121BA
	25 x 35	0.72	1.01	1.382	0.484	ECOS2WB121CA
	30 x 25	0.72	1.01	1.382	0.484	ECOS2WB121DA
150	22 x 50	0.79	1.11	1.105	0.387	ECOS2WB151BA
	25 x 40	0.79	1.11	1.105	0.387	ECOS2WB151CA
	30 x 30	0.79	1.11	1.105	0.387	ECOS2WB151DA
	35 x 25	0.79	1.11	1.105	0.387	ECOS2WB151EA
180	25 x 45	0.87	1.22	0.921	0.322	ECOS2WB181CA
	30 x 35	0.87	1.22	0.921	0.322	ECOS2WB181DA
220	25 x 50	1.00	1.40	0.754	0.264	ECOS2WB221CA
	30 x 40	1.00	1.40	0.754	0.264	ECOS2WB221DA
	35 x 30	1.00	1.40	0.754	0.264	ECOS2WB221EA
270	30 x 45	1.19	1.67	0.614	0.215	ECOS2WB271DA
	35 x 35	1.19	1.67	0.614	0.215	ECOS2WB271EA
330	30 x 50	1.38	1.93	0.502	0.176	ECOS2WB331DA
	35 x 40	1.38	1.93	0.502	0.176	ECOS2WB331EA
390	35 x 45	1.55	2.17	0.425	0.149	ECOS2WB391EA
470	35 x 50	1.74	2.44	0.353	0.123	ECOS2WB471EA