

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
Endurance:	3000 hours at +105°C with maximum specified ripple current (see page 6)											
Multiplier:	0.75	0.8	1.0	1.2	1.25	1.4	Multiplier:	1.0	1.7	2.0	2.2	2.35

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

Part Number System

E	C				B						
Common Code / Terminal Type				Voltage Code	Series	Capacitance Code			Diameter Code	Insulation Options	
ECOS	2 pin, 6.3mm Length Terminal (Standard)					B	22mm			A	PVC with top plate
ECEC	2 pin, 4.0mm Length "Short" Terminal					C	25mm			B	PVC without top plate
ECE3	3 Pin, 4.0mm Length Terminal					D	30mm			Contact factory for PET sleeve availability	
						E	35mm				

(Please see page 10 for details)

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 _{max})		20°C ESR (Ω, max.)		Panasonic Part Number	Cap. (μF)	Size (mm) D x L	Max 105°C R.C. (A _{max})		20°C ESR (Ω, max.)		Panasonic Part Number	
		120Hz	10kHz~	120Hz	20kHz				120Hz	10kHz~	120Hz	20kHz		
160 VDC Working, 200 VDC Surge							200 VDC Working, 250 VDC Surge (continued)							
470	22 x 30	1.40	1.96	0.423	0.190	ECOS2CB471BA	1000	25 x 50	2.20	3.08	0.216	0.108	ECOS2DB102CA	
560	22 x 35	1.50	2.10	0.355	0.160	ECOS2CB561BA		30 x 35	2.20	3.08	0.216	0.108	ECOS2DB102DA	
680	22 x 40	1.70	2.38	0.293	0.132	ECOS2CB681BA		35 x 30	2.20	3.08	0.216	0.108	ECOS2DB102EA	
	25 x 30	1.70	2.38	0.293	0.132	ECOS2CB681CA	1200	30 x 40	2.30	3.22	0.193	0.097	ECOS2DB122DA	
820	22 x 45	2.00	2.80	0.243	0.109	ECOS2CB821BA		35 x 35	2.30	3.22	0.193	0.097	ECOS2DB122EA	
	25 x 35	2.00	2.80	0.243	0.109	ECOS2CB821CA	1500	30 x 50	2.50	3.50	0.155	0.077	ECOS2DB152DA	
1000	22 x 50	2.20	3.08	0.199	0.090	ECOS2CB102BA		35 x 40	2.50	3.50	0.155	0.077	ECOS2DB152EA	
	25 x 40	2.20	3.08	0.199	0.090	ECOS2CB102CA	1800	35 x 45	2.70	3.78	0.129	0.077	ECOS2DB182EA	
	30 x 30	2.20	3.08	0.199	0.090	ECOS2CB102DA	2200	35 x 50	2.90	4.06	0.105	0.063	ECOS2DB222EA	
	35 x 25	2.20	3.08	0.199	0.090	ECOS2CB102EA	250 VDC Working, 300 VDC Surge							
1200	25 x 45	2.30	3.22	0.180	0.090	ECOS2CB122CA	180	22 x 25	0.90	1.26	0.921	0.461	ECOS2EB181BA	
	30 x 35	2.30	3.22	0.180	0.090	ECOS2CB122DA	220	22 x 30	1.00	1.40	0.754	0.377	ECOS2EB221BA	
	35 x 30	2.30	3.22	0.180	0.090	ECOS2CB122EA	270	22 x 35	1.10	1.54	0.614	0.307	ECOS2EB271BA	
1500	30 x 40	2.50	3.50	0.144	0.072	ECOS2CB152DA	330	22 x 40	1.20	1.68	0.502	0.251	ECOS2EB331BA	
	35 x 30	2.50	3.50	0.144	0.072	ECOS2CB152EA		25 x 30	1.20	1.68	0.502	0.251	ECOS2EB331CA	
1800	30 x 45	2.70	3.78	0.129	0.064	ECOS2CB182DA	390	22 x 45	1.30	1.82	0.425	0.213	ECOS2EB391BA	
	35 x 35	2.70	3.78	0.129	0.064	ECOS2CB182EA		30 x 25	1.30	1.82	0.425	0.213	ECOS2EB391DA	
2200	35 x 45	2.90	4.06	0.105	0.063	ECOS2CB222EA	470	22 x 50	1.40	1.96	0.353	0.176	ECOS2EB471BA	
2700	35 x 50	3.10	4.34	0.086	0.052	ECOS2CB272EA			25 x 40	1.40	1.96	0.353	0.176	ECOS2EB471CA
									30 x 30	1.40	1.96	0.353	0.176	ECOS2EB471DA
200 VDC Working, 250 VDC Surge							560	25 x 45	1.50	2.10	0.296	0.148	ECOS2EB561CA	
390	22 x 30	1.30	1.82	0.510	0.230	ECOS2DB391BA		35 x 25	1.50	2.10	0.296	0.148	ECOS2EB561EA	
	25 x 25	1.30	1.82	0.510	0.230	ECOS2DB391CA	680	25 x 50	1.70	2.38	0.244	0.134	ECOS2EB681CA	
470	22 x 35	1.40	1.96	0.423	0.190	ECOS2DB471BA			30 x 40	1.70	2.38	0.244	0.134	ECOS2EB681DA
	25 x 30	1.40	1.96	0.423	0.190	ECOS2DB471CA			35 x 30	1.70	2.38	0.244	0.134	ECOS2EB681EA
560	22 x 40	1.50	2.10	0.355	0.160	ECOS2DB561BA	820	30 x 45	2.00	2.80	0.202	0.111	ECOS2EB821DA	
	25 x 30	1.50	2.10	0.355	0.160	ECOS2DB561CA			35 x 35	2.00	2.80	0.202	0.111	ECOS2EB821EA
680	22 x 45	1.70	2.38	0.293	0.132	ECOS2DB681BA	1000	30 x 50	2.20	3.08	0.199	0.109	ECOS2EB102DA	
	25 x 35	1.70	2.38	0.293	0.132	ECOS2DB681CA			35 x 40	2.20	3.08	0.199	0.109	ECOS2EB102EA
820	25 x 45	2.00	2.80	0.263	0.118	ECOS2DB821CA	1200	35 x 45	2.30	3.22	0.166	0.099	ECOS2EB122EA	
	30 x 30	2.00	2.80	0.263	0.118	ECOS2DB821DA		1500	35 x 50	2.50	3.50	0.144	0.093	ECOS2EB152EA
820	35 x 25	2.00	2.80	0.263	0.118	ECOS2DB821EA								

TS-HB Standard Ratings (continued)

Cap. (μ F)	Size (mm) D x L	Max 105°C R.C. (A_{rms})		20°C ESR (Ω , max.)		Panasonic Part Number	Cap. (μ F)	Size (mm) D x L	Max 105°C R.C. (A_{rms})		20°C ESR (Ω , max.)		Panasonic Part Number
		120Hz	10kHz~	120Hz	20kHz				120Hz	20kHz	120Hz	20kHz	
385 VDC Working, 435 VDC Surge							450 VDC Working, 500 VDC Surge (continued)						
82	22 x 30	0.64	0.90	2.022	0.809	ECOS2TB820BA	82	22 x 30	0.56	0.78	2.022	0.708	ECOS2WB820BA
100	22 x 30	0.69	0.97	1.658	0.663	ECOS2TB101BA	25 x 25	0.56	0.78	2.022	0.708	ECOS2WB820CA	
	25 x 25	0.69	0.97	1.658	0.663	ECOS2TB101CA	100	22 x 35	0.64	0.90	1.658	0.580	ECOS2WB101BA
120	22 x 35	0.75	1.05	1.382	0.553	ECOS2TB121BA	25 x 30	0.64	0.90	1.658	0.580	ECOS2WB101CA	
	25 x 30	0.75	1.05	1.382	0.553	ECOS2TB121CA	120	22 x 40	0.72	1.01	1.382	0.484	ECOS2WB121BA
150	22 x 40	0.82	1.15	1.105	0.442	ECOS2TB151BA	25 x 35	0.72	1.01	1.382	0.484	ECOS2WB121CA	
	25 x 30	0.82	1.15	1.105	0.442	ECOS2TB151CA	30 x 25	0.72	1.01	1.382	0.484	ECOS2WB121DA	
	30 x 25	0.82	1.15	1.105	0.442	ECOS2TB151DA	150	22 x 50	0.79	1.11	1.105	0.387	ECOS2WB151BA
180	22 x 45	0.95	1.33	0.921	0.368	ECOS2TB181BA	25 x 40	0.79	1.11	1.105	0.387	ECOS2WB151CA	
	25 x 35	0.95	1.33	0.921	0.368	ECOS2TB181CA	30 x 30	0.79	1.11	1.105	0.387	ECOS2WB151DA	
	30 x 30	0.95	1.33	0.921	0.368	ECOS2TB181DA	35 x 25	0.79	1.11	1.105	0.387	ECOS2WB151EA	
220	25 x 45	1.10	1.54	0.754	0.301	ECOS2TB221CA	180	25 x 45	0.87	1.22	0.921	0.322	ECOS2WB181CA
	30 x 30	1.10	1.54	0.829	0.332	ECOS2TB221DA	30 x 35	0.87	1.22	0.921	0.322	ECOS2WB181DA	
	35 x 25	1.10	1.54	0.829	0.332	ECOS2TB221EA	220	25 x 50	1.00	1.40	0.754	0.264	ECOS2WB221CA
270	25 x 50	1.20	1.68	0.675	0.270	ECOS2TB271CA	30 x 40	1.00	1.40	0.754	0.264	ECOS2WB221DA	
	35 x 30	1.20	1.68	0.675	0.270	ECOS2TB271EA	35 x 30	1.00	1.40	0.754	0.264	ECOS2WB221EA	
330	30 x 45	1.35	1.89	0.553	0.221	ECOS2TB331DA	270	30 x 45	1.19	1.67	0.614	0.215	ECOS2WB271DA
	35 x 35	1.35	1.89	0.553	0.221	ECOS2TB331EA	35 x 35	1.19	1.67	0.614	0.215	ECOS2WB271EA	
390	30 x 50	1.55	2.17	0.510	0.204	ECOS2TB391DA	330	30 x 50	1.38	1.93	0.502	0.176	ECOS2WB331DA
470	35 x 45	1.75	2.45	0.423	0.212	ECOS2TB471EA	35 x 40	1.38	1.93	0.502	0.176	ECOS2WB331EA	
560	35 x 50	1.80	2.52	0.355	0.178	ECOS2TB561EA	390	35 x 45	1.55	2.17	0.425	0.149	ECOS2WB391EA
400 VDC Working, 450 VDC Surge							470 VDC Working, 520 VDC Surge (continued)						
82	22 x 30	0.64	0.90	2.022	0.708	ECOS2GB820BA	470	35 x 50	1.74	2.44	0.353	0.123	ECOS2WB471EA
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							500 VDC Working, 550 VDC Surge (continued)						
100	22 x 30	0.64	0.90	1.824	0.821	ECOS2SB101BA	500	35 x 50	1.90	2.66	0.326	0.147	ECOS2SB561EA
	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							