

TS-XB Series 105°C, 7000 hours

- Designed for long life industrial applications
- Compact size
- Compact size



Rated Working Voltage:	160 ~ 250 VDC	315 ~ 450 VDC																																			
Operating Temperature:	-40 ~ +105°C	-25 ~ +105°C																																			
Nominal Capacitance:	180 ~ 2200µF	39 ~ 680µF																																			
Capacitance Tolerance:	± 20%																																				
Dissipation Factor:	15% maximum (120Hz, +20°C)																																				
Leakage Current:	3√CV (µA) max. after 5 minutes; C = Capacitance in µF, V = WV																																				
Ripple Current Multipliers:	<table border="1"> <thead> <tr> <th colspan="6">Ripple Current Frequency Factors</th> <th colspan="5">Ripple Current Ambient Temperature Factors*</th> </tr> <tr> <th>Frequency(Hz):</th> <th>50</th> <th>60</th> <th>100~120</th> <th>500</th> <th>1k</th> <th>10k~</th> <th colspan="5">Ambient Temperature: 105°C 85°C 70°C 60°C ≤45°C</th> </tr> </thead> <tbody> <tr> <td>160~450WV:</td> <td>0.75</td> <td>0.8</td> <td>1.0</td> <td>1.2</td> <td>1.25</td> <td>1.4</td> <td colspan="5">Multiplier: 1.0 1.7 2.0 2.2 2.35</td> </tr> </tbody> </table>		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					160~450WV:	0.75	0.8	1.0	1.2	1.25	1.4	Multiplier: 1.0 1.7 2.0 2.2 2.35				
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																														
160~450WV:	0.75	0.8	1.0	1.2	1.25	1.4	Multiplier: 1.0 1.7 2.0 2.2 2.35																														
Endurance:	7000 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

E E T
Common Code

X B
Series Code

□ □
Voltage Code

□ □ □
Capacitance Code

Diameter	Diameter / Terminal Code			
	# of pins:	2	2	3
	pin length:	6.3mm	4.0mm	4.0mm
22mm		B	H	P
25mm		C	J	Q
30mm		D	K	R
35mm		E	L	S

(Please see page 10 for details)

Insulation Options	
A	PVC with top plate
	PVC without top plate (no suffix)
J	PET sleeve without plate

TS-XB 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						
270	22 x 25	1.10	1.54	0.655	0.295	EETXB2C271BA
330	22 x 30	1.20	1.68	0.536	0.241	EETXB2C331BA
390	22 x 30	1.30	1.82	0.453	0.204	EETXB2C391BA
	25 x 25	1.30	1.82	0.453	0.204	EETXB2C391CA
470	22 x 35	1.40	1.96	0.376	0.169	EETXB2C471BA
	25 x 30	1.40	1.96	0.376	0.169	EETXB2C471CA
560	22 x 40	1.50	2.10	0.316	0.142	EETXB2C561BA
	25 x 30	1.50	2.10	0.316	0.142	EETXB2C561CA
	30 x 25	1.50	2.10	0.316	0.142	EETXB2C561DA
680	22 x 45	1.70	2.38	0.260	0.117	EETXB2C681BA
	25 x 35	1.70	2.38	0.260	0.117	EETXB2C681CA
	30 x 30	1.70	2.38	0.260	0.117	EETXB2C681DA
820	25 x 40	2.00	2.80	0.216	0.097	EETXB2C821CA
	30 x 30	2.00	2.80	0.216	0.097	EETXB2C821DA
1000	25 x 45	2.20	3.08	0.177	0.080	EETXB2C102CA
	30 x 35	2.20	3.08	0.177	0.080	EETXB2C102DA
1200	25 x 50	2.30	3.22	0.160	0.080	EETXB2C122CA
	30 x 40	2.30	3.22	0.160	0.080	EETXB2C122DA
	35 x 35	2.30	3.22	0.160	0.080	EETXB2C122EA
1500	30 x 45	2.50	3.50	0.128	0.064	EETXB2C152DA
	35 x 35	2.50	3.50	0.128	0.064	EETXB2C152EA
1800	30 x 50	2.70	3.78	0.115	0.057	EETXB2C182DA
	35 x 40	2.70	3.78	0.115	0.057	EETXB2C182EA
2200	35 x 50	2.90	4.06	0.094	0.056	EETXB2C222EA
180 VDC Working, 225 VDC Surge						
220	22 x 25	1.00	1.40	0.804	0.36	EETXB2P221BA
270	22 x 25	1.10	1.54	0.655	0.29	EETXB2P271BA
330	22 x 30	1.20	1.68	0.536	0.24	EETXB2P331BA
	25 x 25	1.20	1.68	0.536	0.24	EETXB2P331CA
390	22 x 30	1.30	1.82	0.453	0.20	EETXB2P391BA
	25 x 30	1.30	1.82	0.453	0.20	EETXB2P391CA
	30 x 25	1.30	1.82	0.453	0.20	EETXB2P391DA
470	22 x 40	1.40	1.96	0.376	0.17	EETXB2D471BA
	25 x 35	1.40	1.96	0.376	0.17	EETXB2D471CA
200 VDC Working, 250 VDC Surge						
220	22 x 25	1.00	1.40	0.804	0.36	EETXB2D221BA
270	22 x 30	1.10	1.54	0.655	0.29	EETXB2D271BA
	25 x 25	1.10	1.54	0.655	0.29	EETXB2D271CA
330	22 x 30	1.20	1.68	0.536	0.24	EETXB2D331BA
	25 x 25	1.20	1.68	0.536	0.24	EETXB2D331CA
	25 x 35	1.30	1.82	0.453	0.20	EETXB2D391BA
390	25 x 30	1.30	1.82	0.453	0.20	EETXB2D391CA
	30 x 25	1.30	1.82	0.453	0.20	EETXB2D391DA
	22 x 40	1.40	1.96	0.376	0.17	EETXB2D471BA
25 x 35	1.40	1.96	0.376	0.17	EETXB2D471CA	

TS-XB 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	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				120Hz	10kHz~	20kHz		
200 VDC Working, 250 VDC Surge (continued)							350 VDC Working, 400 VDC Surge (continued)						
470	30 x 30	1.40	1.96	0.376	0.17	EETXB2D471DA	150	22 x 40	0.82	1.15	0.982	0.49	EETXB2V151BA
560	22 x 45	1.50	2.10	0.316	0.14	EETXB2D561BA	25 x 30	0.82	1.15	0.982	0.49	EETXB2V151CA	
	25 x 35	1.50	2.10	0.316	0.14	EETXB2D561DA	30 x 25	0.82	1.15	0.982	0.49	EETXB2V151DA	
680	30 x 30	1.50	2.10	0.316	0.14	EETXB2D561DA	180	22 x 45	0.90	1.26	0.819	0.41	EETXB2V181BA
	25 x 40	1.70	2.38	0.260	0.12	EETXB2D681CA	25 x 35	0.90	1.26	0.819	0.41	EETXB2V181CA	
820	30 x 35	1.70	2.38	0.260	0.12	EETXB2D681DA	30 x 30	0.90	1.26	0.819	0.41	EETXB2V181DA	
	25 x 50	2.00	2.80	0.216	0.10	EETXB2D821CA	220	22 x 50	1.00	1.40	0.737	0.37	EETXB2V221BA
1000	30 x 40	2.00	2.80	0.216	0.10	EETXB2D821DA	25 x 40	1.00	1.40	0.737	0.37	EETXB2V221CA	
	35 x 30	2.00	2.80	0.216	0.10	EETXB2D821EA	30 x 30	1.00	1.40	0.737	0.37	EETXB2V221DA	
1200	30 x 45	2.20	3.08	0.177	0.09	EETXB2D102DA	270	25 x 50	1.10	1.54	0.600	0.30	EETXB2V271CA
	35 x 35	2.20	3.08	0.177	0.09	EETXB2D102EA	30 x 35	1.10	1.54	0.600	0.30	EETXB2V271DA	
1500	30 x 50	2.30	3.22	0.160	0.08	EETXB2D122DA	35 x 30	1.10	1.54	0.600	0.30	EETXB2V271EA	
	35 x 40	2.30	3.22	0.160	0.08	EETXB2D122EA	330	30 x 45	1.20	1.68	0.491	0.25	EETXB2V331DA
1500	35 x 50	2.50	3.50	0.128	0.06	EETXB2D152EA	35 x 35	1.20	1.68	0.491	0.25	EETXB2V331EA	
	35 x 40	2.50	3.50	0.128	0.06	EETXB2D152EA	390	30 x 50	1.30	1.82	0.453	0.23	EETXB2V391DA
250 VDC Working, 300 VDC Surge							35 x 40	1.30	1.82	0.453	0.23	EETXB2V391EA	
180	22 x 30	0.90	1.26	0.819	0.41	EETXB2E181BA	470	35 x 40	1.40	1.96	0.376	0.19	EETXB2V471EA
	25 x 25	0.90	1.26	0.819	0.41	EETXB2E181CA	560	35 x 50	1.50	2.10	0.316	0.16	EETXB2V561EA
220	22 x 30	1.00	1.40	0.670	0.33	EETXB2E221BA	400 VDC Working, 450 VDC Surge						
	25 x 25	1.00	1.40	0.670	0.33	EETXB2E221CA	56	22 x 25	0.51	0.71	2.631	0.92	EETXB2G560BA
270	22 x 35	1.10	1.54	0.546	0.27	EETXB2E271BA	68	22 x 30	0.56	0.78	2.167	0.76	EETXB2G680BA
	25 x 30	1.10	1.54	0.546	0.27	EETXB2E271CA	25 x 25	0.56	0.78	2.167	0.76	EETXB2G680CA	
330	30 x 25	1.10	1.54	0.546	0.27	EETXB2E271DA	82	22 x 35	0.64	0.90	1.797	0.63	EETXB2G820BA
	22 x 40	1.20	1.68	0.447	0.22	EETXB2E331BA	25 x 25	0.64	0.90	1.797	0.63	EETXB2G820CA	
390	25 x 35	1.20	1.68	0.447	0.22	EETXB2E331CA	100	22 x 35	0.69	0.97	1.474	0.52	EETXB2G101BA
	30 x 25	1.20	1.68	0.447	0.22	EETXB2E331DA	25 x 30	0.69	0.97	1.474	0.52	EETXB2G101CA	
470	22 x 45	1.30	1.82	0.378	0.19	EETXB2E391BA	120	22 x 40	0.75	1.05	1.228	0.43	EETXB2G121BA
	25 x 35	1.30	1.82	0.378	0.19	EETXB2E391CA	25 x 35	0.75	1.05	1.228	0.43	EETXB2G121CA	
560	30 x 30	1.30	1.82	0.378	0.19	EETXB2E391DA	30 x 25	0.75	1.05	1.228	0.43	EETXB2G121DA	
	25 x 45	1.40	1.96	0.314	0.16	EETXB2E471CA	150	22 x 50	0.82	1.15	0.982	0.34	EETXB2G151BA
680	30 x 35	1.40	1.96	0.314	0.16	EETXB2E471DA	25 x 40	0.82	1.15	0.982	0.34	EETXB2G151CA	
	35 x 30	1.40	1.96	0.314	0.16	EETXB2E471EA	30 x 30	0.82	1.15	0.982	0.34	EETXB2G151DA	
820	25 x 50	1.50	2.10	0.263	0.13	EETXB2E561CA	180	25 x 45	0.90	1.26	0.819	0.29	EETXB2G181CA
	30 x 35	1.50	2.10	0.263	0.13	EETXB2E561DA	30 x 35	0.90	1.26	0.819	0.29	EETXB2G181DA	
1000	35 x 30	1.50	2.10	0.263	0.13	EETXB2E561EA	35 x 25	0.90	1.26	0.819	0.29	EETXB2G181EA	
	30 x 45	1.70	2.38	0.217	0.12	EETXB2E681DA	220	25 x 50	1.00	1.40	0.670	0.23	EETXB2G221CA
1200	35 x 35	1.70	2.38	0.217	0.12	EETXB2E681EA	30 x 40	1.00	1.40	0.670	0.23	EETXB2G221DA	
	30 x 50	2.00	2.80	0.180	0.10	EETXB2E821DA	35 x 30	1.00	1.40	0.670	0.23	EETXB2G221EA	
1500	35 x 40	2.00	2.80	0.180	0.10	EETXB2E821EA	270	30 x 45	1.10	1.54	0.546	0.19	EETXB2G271DA
	35 x 45	2.20	3.08	0.177	0.10	EETXB2E102EA	330	35 x 35	1.10	1.54	0.546	0.19	EETXB2G271EA
1500	35 x 50	2.30	3.22	0.147	0.09	EETXB2E122EA	390	30 x 50	1.20	1.68	0.447	0.18	EETXB2G331DA
	35 x 40	2.30	3.22	0.147	0.09	EETXB2E122EA	470	35 x 40	1.20	1.68	0.447	0.18	EETXB2G331EA
315 VDC Working, 365 VDC Surge							450 VDC Working, 500 VDC Surge						
82	22 x 25	0.64	0.90	1.797	0.90	EETXB2F820BA	39	22 x 25	0.37	0.52	3.779	1.32	EETXB2W390BA
100	22 x 30	0.69	0.97	1.474	0.74	EETXB2F101BA	47	22 x 30	0.40	0.56	3.135	1.10	EETXB2W470BA
120	22 x 30	0.75	1.05	1.228	0.61	EETXB2F121BA	56	22 x 35	0.47	0.66	2.631	0.92	EETXB2W560BA
	25 x 25	0.75	1.05	1.228	0.61	EETXB2F121CA	25 x 25	0.47	0.66	2.631	0.92	EETXB2W560CA	
150	22 x 35	0.82	1.15	0.982	0.49	EETXB2F151BA	68	22 x 40	0.53	0.74	2.167	0.76	EETXB2W680BA
	25 x 30	0.82	1.15	0.982	0.49	EETXB2F151CA	25 x 30	0.53	0.74	2.167	0.76	EETXB2W680CA	
180	30 x 25	0.82	1.15	0.982	0.49	EETXB2F151DA	82	22 x 45	0.56	0.78	1.797	0.63	EETXB2W820BA
	22 x 40	0.90	1.26	0.819	0.41	EETXB2F181BA	25 x 35	0.56	0.78	1.797	0.63	EETXB2W820CA	
220	25 x 35	0.90	1.26	0.819	0.41	EETXB2F181CA	30 x 25	0.56	0.78	1.797	0.63	EETXB2W820DA	
	30 x 25	0.90	1.26	0.819	0.41	EETXB2F181DA	100	22 x 50	0.64	0.90	1.474	0.52	EETXB2W101BA
270	22 x 45	1.00	1.40	0.737	0.37	EETXB2F221BA	25 x 40	0.64	0.90	1.474	0.52	EETXB2W101CA	
	25 x 40	1.00	1.40	0.737	0.37	EETXB2F221CA	30 x 30	0.64	0.90	1.474	0.52	EETXB2W101DA	
330	30 x 30	1.00	1.40	0.737	0.37	EETXB2F221DA	120	25 x 45	0.72	1.01	1.228	0.43	EETXB2W121CA
	25 x 45	1.10	1.54	0.600	0.30	EETXB2F271CA	30 x 30	0.72	1.01	1.228	0.43	EETXB2W121DA	
390	30 x 35	1.10	1.54	0.600	0.30	EETXB2F271DA	150	25 x 50	0.79	1.11	0.982	0.34	EETXB2W151CA
	35 x 30	1.10	1.54	0.600	0.30	EETXB2F271EA	30 x 40	0.79	1.11	0.982	0.34	EETXB2W151DA	
470	25 x 50	1.20	1.68	0.491	0.25	EETXB2F331CA	35 x 30	0.79	1.11	0.982	0.34	EETXB2W151EA	
	30 x 40	1.20	1.68	0.491	0.25	EETXB2F331DA	180	30 x 45	0.87	1.22	0.819	0.29	EETXB2W181DA
560	35 x 30	1.20	1.68	0.491	0.25	EETXB2F331EA	35 x 35	0.87	1.22	0.819	0.29	EETXB2W181EA	
	30 x 45	1.30	1.82	0.453	0.23	EETXB2F391DA	220	30 x 50	1.00	1.40	0.670	0.23	EETXB2W221DA
680	35 x 35	1.30	1.82	0.453	0.23	EETXB2F391EA	35 x 40	1.00	1.40	0.670	0.23	EETXB2W221EA	
	30 x 50	1.40	1.96	0.376	0.19	EETXB2F471DA	270	35 x 45	1.19	1.67	0.546	0.19	EETXB2W271EA
820	35 x 40	1.40	1.96	0.376	0.19	EETXB2F471EA	330	35 x 50	1.38	1.93	0.447	0.16	EETXB2W331EA
	35 x 45	1.50	2.10	0.316	0.16	EETXB2F561EA							
820	35 x 50	1.70	2.38	0.260	0.14	EETXB2F681EA							
	35 x 40	1.70	2.38	0.260	0.14	EETXB2F681EA							
350 VDC Working, 400 VDC Surge													
82	22 x 25	0.64	0.90	1.797	0.90	EETXB2V820BA							
100	22 x 30	0.69	0.97	1.474	0.74	EETXB2V101BA							
	25 x 25	0.69	0.97	1.474	0.74	EETXB2V101CA							
120	22 x 35	0.75	1.05	1.228	0.61	EETXB2V121BA							
	25 x 30	0.75	1.05	1.228	0.61	EETXB2V121CA							