

TS-ED Series 105°C, 3000 hours

- Highest ripple current capability for demanding inverter applications
- 2 and 3 pin versions available
- 3000 hour life at 105°C



Rated Working Voltage:	200 ~ 250 VDC	400 ~ 450 VDC											
Operating Temperature:	-40 ~ +105°C	-25 ~ +105°C											
Nominal Capacitance:	220~2200 μF	56 ~ 560μF											
Capacitance Tolerance:	± 20%												
Dissipation Factor (120Hz, 20°C):	15% maximum (120Hz, +20°C)												
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:	0.71	0.78	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

E E T
Common Code

E D
Series Code

□ □
Voltage Code

□ □ □
Capacitance Code

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-ED Standard Ratings (part numbers shown with 6.3mm length terminal and top vinyl plate)

Cap. (µF)	Size (mm) D x L	Max 105°C R.C. (A _{ms}) 120Hz	Max 105°C R.C. (A _{ms}) 10kHz~	20°C ESR (Ω, max.) 120Hz	20°C ESR (Ω, max.) 20kHz	Panasonic Part Number
200 VDC Working, 250 VDC Surge						
270	22 x 25	1.42	2.03	0.553	0.249	EETED2D271BA
330	22 x 30	1.56	2.23	0.452	0.203	EETED2D331BA
390	22 x 30	1.71	2.44	0.383	0.172	EETED2D391BA
	25 x 25	1.71	2.44	0.383	0.172	EETED2D391CA
470	22 x 35	1.85	2.64	0.317	0.143	EETED2D471BA
	25 x 30	1.85	2.64	0.317	0.143	EETED2D471CA
560	22 x 40	2.14	3.05	0.266	0.120	EETED2D561BA
	25 x 30	2.14	3.05	0.266	0.120	EETED2D561CA
	30 x 25	2.14	3.05	0.266	0.120	EETED2D561DA
680	22 x 45	2.42	3.45	0.219	0.099	EETED2D681BA
	25 x 35	2.42	3.45	0.219	0.099	EETED2D681CA
	30 x 30	2.42	3.45	0.219	0.099	EETED2D681DA
820	22 x 50	2.63	3.76	0.182	0.082	EETED2D821BA
	25 x 40	2.63	3.76	0.182	0.082	EETED2D821CA
	30 x 30	2.63	3.76	0.182	0.082	EETED2D821DA
	35 x 25	2.63	3.76	0.182	0.091	EETED2D821EA
1000	25 x 45	2.84	4.06	0.149	0.067	EETED2D102CA
	30 x 35	2.84	4.06	0.149	0.067	EETED2D102DA
	35 x 30	2.84	4.06	0.149	0.067	EETED2D102EA
1200	30 x 40	3.13	4.47	0.124	0.062	EETED2D122DA
	35 x 35	3.13	4.47	0.124	0.062	EETED2D122EA
1500	30 x 50	3.56	5.08	0.099	0.050	EETED2D152DA
	35 x 40	3.56	5.08	0.099	0.050	EETED2D152EA
1800	35 x 45	3.84	5.48	0.083	0.041	EETED2D182EA
2200	35 x 50	4.12	5.89	0.068	0.033	EETED2D222EA
250 VDC Working, 300 VDC Surge						
220	22 x 30	1.28	1.83	0.678	0.305	EETED2E221BA
270	22 x 30	1.42	2.03	0.553	0.249	EETED2E271BA
	25 x 25	1.42	2.03	0.553	0.249	EETED2E271CA
330	22 x 35	1.64	2.34	0.452	0.203	EETED2E331BA
	25 x 30	1.56	2.23	0.452	0.203	EETED2E331CA
250 VDC Working, 300 VDC Surge (continued)						
390	22 x 40	1.72	2.45	0.383	0.172	EETED2E391BA
	25 x 30	1.71	2.44	0.383	0.172	EETED2E391CA
	30 x 25	1.71	2.44	0.383	0.172	EETED2E391DA
470	22 x 45	1.85	2.64	0.317	0.143	EETED2E471BA
	25 x 35	1.85	2.64	0.317	0.143	EETED2E471CA
	30 x 30	1.85	2.64	0.317	0.143	EETED2E471DA
560	25 x 40	2.14	3.05	0.266	0.120	EETED2E561CA
	30 x 30	2.14	3.05	0.266	0.120	EETED2E561DA
	35 x 25	2.14	3.05	0.266	0.133	EETED2E561EA
680	25 x 45	2.42	3.45	0.219	0.099	EETED2E681CA
	30 x 35	2.42	3.45	0.219	0.099	EETED2E681DA
	35 x 30	2.42	3.45	0.219	0.110	EETED2E681EA
820	30 x 40	2.63	3.76	0.182	0.082	EETED2E821DA
	35 x 35	2.63	3.76	0.182	0.091	EETED2E821EA
1000	30 x 50	2.84	4.06	0.149	0.067	EETED2E102DA
	35 x 40	2.84	4.06	0.149	0.067	EETED2E102EA
1200	35 x 45	3.13	4.47	0.124	0.062	EETED2E122EA
1500	35 x 50	3.56	5.08	0.099	0.050	EETED2E152EA
400 VDC Working, 450 VDC Surge						
82	22 x 25	0.80	1.14	1.617	0.728	EETED2G820BA
100	22 x 30	0.91	1.30	1.326	0.597	EETED2G101BA
	25 x 25	0.91	1.30	1.326	0.597	EETED2G101CA
120	22 x 35	1.02	1.46	1.105	0.497	EETED2G121BA
	25 x 30	1.02	1.46	1.105	0.497	EETED2G121CA
150	22 x 40	1.07	1.53	0.884	0.398	EETED2G151BA
	25 x 30	1.07	1.53	0.884	0.398	EETED2G151CA
	30 x 25	1.07	1.53	0.884	0.398	EETED2G151DA
180	22 x 45	1.12	1.60	0.737	0.332	EETED2G181BA
	25 x 35	1.12	1.60	0.737	0.332	EETED2G181CA
	30 x 30	1.12	1.60	0.737	0.332	EETED2G181DA
220	22 x 50	1.42	2.03	0.603	0.271	EETED2G221BA

TS-ED 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	
400 VDC Working, 450 VDC Surge (continued)						
220	25 x 40	1.42	2.03	0.603	0.271	EETED2G221CA
	30 x 30	1.42	2.03	0.603	0.271	EETED2G221DA
	35 x 25	1.42	2.03	0.603	0.271	EETED2G221EA
270	25 x 45	1.56	2.23	0.491	0.221	EETED2G271CA
	30 x 35	1.56	2.23	0.491	0.221	EETED2G271DA
	35 x 30	1.56	2.23	0.491	0.221	EETED2G271EA
330	30 x 40	1.71	2.44	0.402	0.181	EETED2G331DA
	35 x 30	1.71	2.44	0.402	0.181	EETED2G331EA
390	30 x 45	1.85	2.64	0.340	0.153	EETED2G391DA
	35 x 35	1.85	2.64	0.340	0.153	EETED2G391EA
470	35 x 40	2.01	2.87	0.282	0.127	EETED2G471EA
560	35 x 45	2.35	3.36	0.237	0.107	EETED2G561EA
420 VDC Working, 470 VDC Surge						
68	22 x 25	1.08	0.95	1.950	0.878	EETED2S680BA
82	22 x 30	1.14	1.08	1.617	0.728	EETED2S820BA
	25 x 25	1.14	1.08	1.617	0.728	EETED2S820CA
100	22 x 30	1.30	1.14	1.326	0.597	EETED2S101BA
	25 x 25	1.30	1.14	1.326	0.597	EETED2S101CA
120	22 x 35	1.46	1.30	1.105	0.497	EETED2S121BA
	25 x 30	1.46	1.30	1.105	0.497	EETED2S121CA
150	22 x 40	1.53	1.46	0.884	0.398	EETED2S151BA
	25 x 35	1.53	1.46	0.884	0.398	EETED2S151CA
	30 x 25	1.53	1.46	0.884	0.398	EETED2S151DA
180	22 x 45	1.60	1.53	0.737	0.332	EETED2S181BA
	25 x 40	1.60	1.53	0.737	0.332	EETED2S181CA
	30 x 30	1.60	1.53	0.737	0.332	EETED2S181DA
	35 x 25	1.60	1.53	0.737	0.332	EETED2S181EA
220	25 x 45	2.03	1.60	0.603	0.271	EETED2S221CA
	30 x 35	2.03	1.60	0.603	0.271	EETED2S221DA
	35 x 30	2.03	1.60	0.603	0.271	EETED2S221EA
270	25 x 50	2.40	2.03	0.491	0.221	EETED2S271CA
	30 x 40	2.40	2.03	0.491	0.221	EETED2S271DA
	35 x 30	2.40	2.03	0.491	0.221	EETED2S271EA
330	30 x 45	2.54	2.45	0.402	0.181	EETED2S331DA
	35 x 35	2.54	2.45	0.402	0.181	EETED2S331EA
390	30 x 50	2.73	2.64	0.340	0.153	EETED2S391DA
	35 x 40	2.73	2.64	0.340	0.153	EETED2S391EA
470	35 x 45	3.18	2.82	0.282	0.127	EETED2S471EA
450 VDC Working, 500 VDC Surge						
56	22 x 25	0.67	0.95	2.368	1.066	EETED2W560BA
68	22 x 30	0.76	1.08	1.950	0.878	EETED2W680BA
	25 x 25	0.76	1.08	1.950	0.878	EETED2W680CA
82	22 x 30	0.80	1.14	1.617	0.728	EETED2W820BA
	25 x 25	0.80	1.14	1.617	0.728	EETED2W820CA
100	22 x 35	0.91	1.30	1.326	0.597	EETED2W101BA
	25 x 30	0.91	1.30	1.326	0.597	EETED2W101CA
120	22 x 40	1.02	1.46	1.105	0.497	EETED2W121BA
	25 x 35	1.02	1.46	1.105	0.497	EETED2W121CA
	30 x 25	1.02	1.46	1.105	0.497	EETED2W121DA
150	22 x 45	1.07	1.53	0.884	0.398	EETED2W151BA
	25 x 40	1.07	1.53	0.884	0.398	EETED2W151CA
	30 x 30	1.07	1.53	0.884	0.398	EETED2W151DA
	35 x 25	1.07	1.53	0.884	0.398	EETED2W151EA
180	22 x 50	1.12	1.60	0.737	0.332	EETED2W181BA
	25 x 40	1.12	1.60	0.737	0.332	EETED2W181CA
	30 x 30	1.12	1.60	0.737	0.332	EETED2W181DA
	35 x 25	1.12	1.60	0.737	0.332	EETED2W181EA
220	25 x 45	1.42	2.03	0.603	0.271	EETED2W221CA
	30 x 35	1.42	2.03	0.603	0.271	EETED2W221DA
	35 x 30	1.42	2.03	0.603	0.271	EETED2W221EA
270	30 x 40	1.72	2.45	0.491	0.221	EETED2W271DA
	35 x 35	1.72	2.45	0.491	0.221	EETED2W271EA
330	30 x 50	1.85	2.64	0.402	0.181	EETED2W331DA
	35 x 40	1.85	2.64	0.402	0.181	EETED2W331EA
390	35 x 40	1.97	2.82	0.340	0.153	EETED2W391EA
470	35 x 50	2.47	3.53	0.282	0.127	EETED2W471EA