

Technical Information - CECC & ESA/ESCC Approved Products

Approval of the manufacturing facility

The facility is approved to manufacture non-solid electrolytic tantalum capacitors under BS 9000, IECQ, CECC and MIL-STD-790 for MIL-PRF-39006/-. The facility is registered on the Defence Contracts List as satisfying the requirements of DEF STAN 05-21.

Specifications

The TH capacitor can be offered to the following specifications covering both the European range of values and the American range:
BS CECC 30 202 001, 30 202 005, 30202.012, QC 300 202 GB 0001.
Arcotronics In-House Specification 1000 SD 00007.
The TH series is GAM T1 listed in France.

Performance Curves & Technical Data

Publication 5008 lists the technical data for the TH range and includes:
Constructional details/performance curves: the variation of electrical parameters with temperature and frequency/In-rush currents/long term storage/parameter variation on endurance.

- All-Tantalum electrodes
- Withstands high ripple current
- Long life reliability
- Reverse voltage capability
- Approved to BS CECC 30 202 001
- Approved to ESA/ESCC 3003/005
- Approved to BS CECC 30 202 005
- Approved to QC 300 202 GB 0001

Severity of Tests

The BS CECC 30 202 001 test sequence includes tests at the following severities.

Environmental Classification	: 55/125/56
Sealing (Tracer Gas)	: 1×10^{-8} mbar din ³ /s
Rapid change of temperature	: 30 cycles and 500 cycles
Vibration	: 20g. (150mm or 196m/s ² for 30 hours)
Bump	: 4000 bumps at 390 m/s ²
Low Air Pressure	: 2 KN/m ² (20mbar)
Endurances 85°C and 125°C	: 2000 & 10000 hours
Reverse voltage	: 3 volts for 125 hours

Usage at Higher Temperatures

Temperatures in excess of the upper category temperature of 125°C, to a maximum of 200°C, can be sustained with appropriate derating. The 200°C range is illustrated on pages 17 to 22.

Table 1- Ripple Current Ratings: Multiplying Factors

Frequency of applied ripple current		120Hz				800Hz				1kHz				10kHz				40kHz				100kHz			
		Temp °C				Temp °C				Temp °C				Temp °C				Temp °C				Temp °C			
Ambient still air		≤ 55°	85°	105°	125°	≤ 55°	85°	105°	125°	≤ 55°	85°	105°	125°	≤ 55°	85°	105°	125°	≤ 55°	85°	105°	125°	≤ 55°	85°	105°	125°
% of 85°C rated peak voltage	100%	.60	.39	-	-	.71	.43	-	-	.72	.45	-	-	.88	.55	-	-	1.0	.63	-	-	1.1	.69	-	-
	90%	.60	.46	-	-	.71	.55	-	-	.72	.55	-	-	.88	.67	-	-	1.0	.77	-	-	1.1	.85	-	-
	80%	.60	.52	.35	-	.71	.62	.42	-	.72	.62	.42	-	.88	.76	.52	-	1.0	.87	.59	-	1.1	.96	.65	-
	70%	.60	.58	.44	-	.71	.69	.52	-	.72	.70	.52	-	.88	.85	.64	-	1.0	.97	.73	-	1.1	1.07	.80	-
	≤ 66 2/3%√	.60	.60	.46	.27	.71	.71	.55	.32	.72	.72	.55	.32	.88	.88	.68	.40	1.0	1.0	.77	.45	1.1	1.1	.85	.50

Basic Criteria

Ripple current rating is expressed in amps. r.m.s. for a particular frequency, temperature and applied voltage.

Maximum temperature rise above ambient is 50°C up to 85°C ambient, with linear derating above 85°C to a maximum temperature rise of 10°C at 125°C ambient.

Cooling conditions will affect the capability of the capacitor to handle ripple current.

The sum of the peak a.c. and d.c. voltages must not exceed the rated forward or reverse voltage at the appropriate temperature.

The maximum RMS ripple current which can be applied is shown on pages 4 to 6 for each value of capacitance and voltage rating. This is shown at a frequency of 40 kHz and a temperature of 85°C. Multiplying factors for other frequencies, temperatures and allowing for variation in applied peak voltage are shown in Table 1 above.

The ripple current causes heating due to i^2R losses, where R is the ESR of the capacitor. Based on an assumption that the maximum temperature rise is 50°C in still air and allowing for the upper temperature rating of the capacitor, multiplying factors are derived at different temperatures.

As the ESR is frequency dependent there are also multiplying factors for frequencies.

Selection Chart - CECC Range

Rated Voltage @ 85°C	6	6.3	8	10	15	16	25	30	40	50	60	63	75	100	125
Category Voltage @ 125°C	4	4	5	7	10	10	16	20	25	30	40	40	50	65	85
Rated Capacitance µF	Case Size														
2.7															T1
3.3															T1
3.5													T1		
3.6															T1
3.9															T1
4.0										T1					
4.7														T1	
5.0										T1					
5.6														T1	
6.8													T1		
8.0								T1							
8.2											T1		T1		
9.0													T1		
10							T1			T1		T1			
12												T1			
14															T2
15				T1				T1	T1				T1	T2	
18								T1	T1						T2
20				T1							T2				
22							T1		T1	T1				T2	
25			T1					T1		T2					T3
27						T1									
30	T1													T2/T3	
33				T1	T1	T1	T1						T2	T2/T3	
39							T1				T2			T2/T3	T3
40								T2					T3		
43							T1						T2	T3	
47				T1	T1	T1				T2		T2	T2	T3	T3
50						T2					T3				
56		T1		T1	T1							T2	T2/T3	T3	T4
60										T3					
68	T1	T1		T1				T2	T2		T3		T2/T3	T3/T4	T4
70					T2										
82				T1						T3	T2	T2	T3	T4	T4
86														T4	
100				T1/T2			T2	T3	T2	T2			T3	T3	T4
110													T4		
120		T1	T1/T2		T2	T2	T3	T2	T2				T3	T4	
140	T2										T4				
150		T1		T2			T2	T2/T3	T3				T4	T3/T4	
160	T1						T2			T4					
170					T3			T2							
180				T2			T2/T3							T3	
220		T2	T2		T2	T2	T3		T4		T3	T3	T4	T4	
250				T3										T4	
270	T2				T2/T3	T2			T3	T3	T4	T4			
290				T3		T2									
300					T2			T3/T4							
330	T3				T2		T3	T4	T3	T3		T4	T4		
350					T2			T4	T3		T4				
390					T2/T3			T3/T4	T3	T4	T4				
430				T2/T3				T3		T4					
470		T2			T3		T4	T3		T4					
540						T4									
560	T2/T3	T2/T3					T4	T3	T4						
680				T4		T3	T4								
750					T4	T3									
820					T4		T3	T4							
850				T4	T3	T4		T4							
1000					T3		T4								
1200	T4				T3	T4	T4								
1500	T3	T3				T4									
1800					T4										
2200	T4	T4													

Characteristics & Capabilities: TH range

Reverse voltage capability

The TH-series employs tantalum cathodes which allow the continuous application of reverse potentials not exceeding 3V over the whole temperature range.

Surge voltage

The surge voltage capability is 115% of the voltage rating at the relevant temperature.

Temperature range

The capacitor is designed for operation between -55°C and +125°C, with linear voltage derating above 85°C to 66% of the rated voltage at + 125°C.

Capacitance tolerance

The standard capacitance tolerance is $\pm 20\%$ and $\pm 10\%$ although special tolerances are available by arrangement.

TH

Fig. 1. Case Sizes - Outline and Dimensions

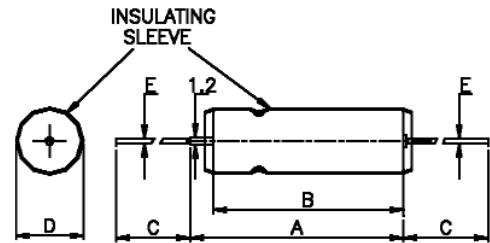


Table 1 - Dimensions (mm)

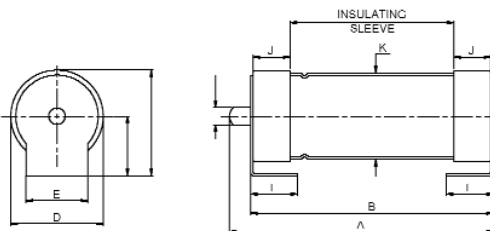
Case Size	A max	B max	C max	D max	E ± 0.1
1	16	13	30	5.6	0.65
2	21	18	30	7.8	0.65
3	24	21	30	10.2	0.65
4	31	28	30	10.2	0.65

Weight

Case Size	Approximate Weight
1	2.5g
2	5.5g
3	10.5g
4	14.5g

SMTH

Fig. 2. Case Sizes - Outline and Dimensions



Surface mount foot material - 0.25mm Nickel

Table 2 - Dimensions (mm)

Case Size	A max	B min	B max	C ± 0.4	D ± 0.1	E ± 0.1	F min	F max	G ± 0.1	H ± 0.4	I max	J max	K max
1	17.8	14.0	15.0	7.8	6.25	3.8	2.7	3.8	1.8	4.6	3.8	5.6	7.8
2	22.6	18.4	19.4	9.8	8.30	6.1	2.7	3.8	1.8	5.7	4.2	7.8	10.3
3	25.8	22.4	23.4	12.4	10.8	8.4	2.7	3.8	1.8	7.0	4.7	10.3	15.0
4	33.3	29.2	30.2	12.4	10.8	8.4	2.7	3.8	1.8	7.0	4.7	10.3	15.0

Weight

Case Size	Approximate Weight
1	2.5g
2	5.6g
3	11.6g
4	15.0g

Capacitance µF	Rated Volts 85°C	Category Volts 125°C	Case Size	Max. ESR 25°C 100Hz Ω	Impedance			Leakage Current		Max. Capacitance Change		Max. RMS Ripple 85°C 40kHz (mA) (Note A)	TH	
					-55°C 100Hz Ω	25°C 100kHz Ω	-55°C 100kHz Ω	25°C µA	85 + 125°C µA	-55°C %	-125°C %		Part No. Cap. Tol. ±10% 402/1/-	Part No. Cap. Tol. ±20% 402/1/-
68	6.3	4	T1	2.9	60	5	25	.75	1.5	-40	16	960	57611/117	57611/017
120	6.3	4	T1	4.0	81	5	25	1.5	3	-41	16	820	57611/120	57611/020
150	6.3	4	T1	4.0	80	5	25	1.5	3	-42	16	820	57611/121	57611/021
220	6.3	4	T2	1.8	30	1	10	1.0	5	-44	18	1370	57621/123	57621/023
470	6.3	4	T2	2.3	46	1	10	2.0	5	-60	20	1281	57621/127	57621/027
560	6.3	4	T2	2.4	48	1	10	2.0	10	-68	20	1255	57621/128	57621/028
560	6.3	4	T3	1.3	25	1	10	2.0	6	-64	20	1900	57631/128	57631/028
1000	6.3	4	T4	0.9	22	1	10	3.0	14	-80	25	2388	57641/131	57641/031
1500	6.3	4	T3	1.8	36	1	10	3.0	15	-84	25	1615	57631/133	57631/033
2200	6.3	4	T4	1.0	22	1	10	4.0	15	-86	25	2265	57641/135	57641/035
47	10	6.3	T1	3.7	90	5	25	.75	1.5	-36	14	855	57612/115	57612/015
68	10	6.3	T1	4.0	85	5	25	1.0	2	-40	16	820	57612/117	57612/017
82	10	6.3	T1	4.0	84	5	25	1.5	3	-40	16	820	57612/118	57612/018
100	10	6.3	T1	4.0	82	5	25	1.5	3	-40	16	820	57612/119	57612/019
150	10	6.3	T2	2.3	45	1	10	1.0	2	-32	16	1271	57622/121	57622/021
180	10	6.3	T2	2.2	40	1	10	1.0	2	-35	16	1300	57622/122	57622/022
330	10	6.3	T2	2.6	52	1	10	2.0	5	-54	18	1195	57622/125	57622/025
390	10	6.3	T2	2.6	54	1	10	2.0	5	-60	20	1195	57622/126	57622/026
470	10	6.3	T3	1.5	25	1	10	2.0	12	-65	20	1800	57632/127	57632/027
680	10	6.3	T4	0.9	23	1	10	3.0	15	-80	25	2487	57642/129	57642/029
820	10	6.3	T4	1.0	22	1	10	3.0	15	-80	25	2360	57642/130	57642/030
1000	10	6.3	T3	1.8	36	1	10	3.0	15	-80	25	1720	57632/131	57632/031
1200	10	6.3	T3	1.8	36	1	10	3.0	15	-80	25	1720	57632/132	57632/032
1500	10	6.3	T4	1.0	23	1	10	4.0	15	-84	25	2360	57642/133	57642/033
1800	10	6.3	T4	1.0	24	1	10	4.0	15	-84	25	2360	57642/134	57642/034
33	16	10	T1	4.0	90	5	25	.75	1.5	-28	16	820	57613/113	57613/013
47	16	10	T1	4.7	100	5	25	1.0	2	-28	16	760	57613/115	57613/015
56	16	10	T1	4.7	100	5	25	1.0	2	-28	16	760	57613/116	57613/016
120	16	10	T2	2.6	50	1	10	1.0	2	-28	16	1230	57623/120	57623/020
220	16	10	T2	2.8	62	1	10	2.0	5	-35	16	1215	57623/123	57623/023
270	16	10	T2	2.2	60	1	10	2.0	5	-45	18	1215	57623/124	57623/024
330	16	10	T3	1.7	30	1	10	2.0	12	-58	20	1760	57633/125	57633/025
470	16	10	T4	1.2	24	1	10	3.0	15	-75	25	2100	57643/127	57643/027
560	16	10	T4	1.0	23	1	10	3.0	15	-80	25	2300	57643/128	57643/028
680	16	10	T3	2.1	42	1	10	3.0	12	-80	25	1582	57633/129	57633/029
820	16	10	T3	2.1	42	1	10	3.0	16	-80	25	1582	57633/130	57633/030
1000	16	10	T4	1.0	25	1	10	4.0	15	-82	25	2300	57643/131	57643/031
1200	16	10	T4	1.0	25	1	10	4.0	15	-84	25	2300	57643/132	57643/032
22	25	16	T1	4.2	140	5	25	.75	1.5	-20	12	800	57614/111	57614/011
27	25	16	T1	5.3	140	5	25	1.5	3	-20	12	715	57614/112	57614/012
33	25	16	T1	5.3	130	5	25	1.5	3	-24	14	715	57614/113	57614/013
39	25	16	T1	5.3	120	5	25	1.5	3	-28	16	715	57614/114	57614/014
100	25	16	T2	2.8	50	5	25	1.0	2	-28	15	1215	57624/119	57624/019
150	25	16	T2	3.0	62	1	10	2.0	5	-35	15	1130	57624/121	57624/021
180	25	16	T2	3.0	60	1	10	2.0	5	-35	15	1130	57624/122	57624/022
220	25	16	T3	1.8	33	1	10	2.0	12	-52	20	1614	57634/123	57634/023
330	25	16	T4	1.3	27	1	10	3.0	12	-60	25	1862	57644/125	57644/025
390	25	16	T3	2.4	48	1	10	3.0	12	-70	22	1398	57634/126	57634/026
390	25	16	T4	1.1	24	1	10	3.0	15	-68	25	2025	57644/126	57644/026
470	25	16	T3	2.4	48	1	10	3.0	12	-76	22	1398	57634/127	57634/027
560	25	16	T3	2.4	48	1	10	3.0	15	-80	25	1398	57634/128	57634/028
680	25	16	T4	1.2	24	1	10	4.0	15	-80	25	1939	57644/129	57644/029
820	25	16	T4	1.3	26	1	10	4.0	15	-80	25	1862	57644/130	57644/030
15	40	25	T1	6.2	175	5	25	1.0	2	-20	12	660	57615/109	57615/009
18	40	25	T1	8.0	200	5	25	1.5	4	-20	12	580	57615/110	57615/010
22	40	25	T1	8.0	190	5	25	1.5	4	-24	12	580	57615/111	57615/011
68	40	25	T2	2.8	60	5	25	1.0	7	-24	15	1285	57625/117	57625/017
100	40	25	T2	2.8	60	5	25	2.0	7	-40	15	1285	57625/119	57625/019
120	40	25	T2	3.0	62	1	10	2.0	7	-32	15	1241	57625/120	57625/020
150	40	25	T3	1.6	35	1	10	2.0	12	-48	15	1525	57635/121	57635/021
220	40	25	T4	1.5	27	1	10	3.0	20	-58	23	1900	57645/123	57645/023
270	40	25	T3	2.6	52	1	10	3.0	14	-60	25	1373	57635/124	57635/024
330	40	25	T3	2.6	52	1	10	3.0	18	-65	25	1373	57635/125	57635/025
390	40	25	T4	1.5	30	1	10	4.0	20	-75	25	1900	57645/126	57645/026
470	40	25	T4	1.5	30	1	10	4.0	20	-80	25	1900	57645/127	57645/027
10	63	40	T1	8.2	250	5	25	1.0	2	-20	9	572	57616/107	57616/007
12	63	40	T1	8.2	233	5	25	1.5	4	-20	9	572	57616/108	57616/008
15	63	40	T1	8.5	220	5	25	1.5	4	-22	9	562	57616/109	57616/009
47	63	40	T2	2.8	70	5	25	1.0	7	-24	15	1150	57626/115	57626/015
56	63	40	T2	3.0	72	5	25	2.0	7	-26	15	1150	57626/116	57626/016
82	63	40	T2	3.2	70	5	25	2.0	7	-36	15	1150	57626/118	57626/018
100	63	40	T3	2.3	42	5	25	2.0	11	-37	15	1420	57636/119	57636/019
120	63	40	T3	2.3	49	1	10	3.0	14	-40	18	1420	57636/120	57636/020
150	63	40	T4	1.4	27	1	10	3.0	20	-45	20	1865	57646/121	57646/021
220	63	40	T3	2.6	55	1	10	3.0	15	-50	25	1341	57636/123	57636/023
270	63	40	T4	1.5	33	1	10	5.0	22	-70	25	1850	57646/124	57646/024
330	63	40	T4	1.5	31	1	10	5.0	25	-72	25	1850	57646/125	57646/025
6.8	75	50	T1	6.8	300	5	25	1.0	2	-20	9	610	57617/105	57617/005
8.2	75	50	T1	6.8	280	5	25	2.0	5	-20	9	610	57617/106	57617/006
33	75	50	T2	3.6	90	5	25	1.0	4	-24	12	1079	57627/113	57627/013

European Range

All items BS CECC 30 202 001 Approved

Capacitance µF	Rated Volts 85°C	Category Volts 125°C	Case Size	Max. ESR 25°C 100Hz Ω	Impedance			Leakage Current		Max. Capacitance Change		Max. RMS Ripple 85°C 40kHz (mA) (Note A)	TH	
					-55°C 100Hz Ω	25°C 100kHz Ω	-55°C 100kHz Ω	25°C µA	85 + 125°C µA	-55°C %	-125°C %		Part No. Cap. Tol. ±10% 402/1/-	Part No. Cap. Tol. ±20% 402/1/-
47	75	50	T2	3.8	87	5	25	2.0	10	-30	14	1051	57627/115	57627/015
68	75	50	T2	3.8	86	5	25	2.0	10	-36	15	1051	57627/117	57627/017
68	75	50	T3	2.0	50	5	25	2.0	20	-30	15	1522	57637/117	57637/017
82	75	50	T3	2.0	45	5	25	2.0	10	-32	15	1335	57637/118	57637/018
100	75	50	T3	2.6	60	5	25	3.0	16	-36	18	1335	57637/119	57637/019
120	75	50	T4	1.4	28	1	10	3.0	22	-36	20	1914	57647/120	57647/020
150	75	50	T3	2.6	60	1	10	3.0	16	-40	20	1335	57637/121	57637/021
150	75	50	T4	1.4	30	1	10	4.0	22	-48	22	1914	57647/121	57647/021
180	75	50	T3	2.6	60	1	10	3.0	20	-50	22	1335	57637/122	57637/022
220	75	50	T4	1.5	32	1	10	5.0	22	-60	22	1850	57647/123	57647/023
4.7	100	63	T1	8.5	500	5	25	1.0	2	-16	8	565	57618/103	57618/003
5.6	100	63	T1	9.6	475	5	25	2.0	5	-17	8	530	57618/104	57618/004
22	100	63	T2	3.7	100	5	25	1.0	4	-16	8	1065	57628/111	57628/011
33	100	63	T2	3.7	95	5	25	2.0	12	-16	8	1065	57628/113	57628/013
33	100	63	T3	3.3	93	5	25	2.0	8	-16	8	1200	57638/113	57638/013
39	100	63	T2	3.8	92	5	25	2.0	12	-24	12	1065	57628/114	57628/014
39	100	63	T3	2.4	89	5	25	3.0	16	-20	12	1389	57638/114	57638/014
47	100	63	T3	2.4	68	5	25	2.0	10	-22	12	1389	57638/115	57638/015
56	100	63	T3	2.6	60	5	25	2.0	10	-28	15	1335	57638/116	57638/016
68	100	63	T3	2.6	60	5	25	3.0	24	-30	15	1335	57638/117	57638/017
68	100	63	T4	1.5	42	1	10	3.0	24	-30	20	1850	57648/117	57648/017
82	100	63	T4	1.5	39	1	10	3.0	24	-25	20	1859	57648/118	57648/018
100	100	63	T4	1.5	36	1	10	3.0	24	-35	20	1859	57648/119	57648/019
2.7	125	85	T1	13.3	780	5	25	1.0	2	-16	8	452	57619/199	57619/099
3.3	125	85	T1	11.1	600	5	25	1.0	2	-16	8	495	57619/101	57619/001
3.9	125	85	T1	11.1	557	5	25	2.0	5	-16	8	495	57619/102	57619/002
15	125	85	T2	5.0	167	5	25	1.0	7	-16	8	1050	57629/109	57629/009
18	125	85	T2	3.7	133	5	25	2.0	10	-16	8	1065	57629/110	57629/010
39	125	85	T3	2.8	90	5	25	2.0	10	-16	8	1282	57639/114	57639/014
47	125	85	T3	2.8	70	5	25	2.0	10	-23	10	1282	57639/115	57639/015
68	125	85	T4	1.5	42	1	10	3.0	26	-24	15	1859	57649/117	57649/017
82	125	85	T4	1.5	39	1	10	3.0	24	-24	18	1859	57649/118	57649/018

Note A. Quoted ripple current figures must be used in conjunction with the multiplying factors shown in Table 1. Note B. Certain of these values have been allocated NATO Stock Numbers. See publication 5007/A. For SMTH selection, replace the first '5' of the above Part No's with a '7'

American Range

All items BS CECC 30 202 001 Approved

Capacitance µF	Rated Volts 85°C	Category Volts 125°C	Case Size	Max. ESR 25°C 100Hz Ω	Impedance			Leakage Current		Max. Capacitance Change		Max. RMS Ripple 85°C 40kHz (mA) (Note A)	TH	
					-55°C 100Hz Ω	25°C 100kHz Ω	-55°C 100kHz Ω	25°C µA	85 + 125°C µA	-55°C %	-125°C %		Part No. Cap. Tol. ±10% 402/1/-	Part No. Cap. Tol. ±20% 402/1/-
30	6	4	T1	4.0	100	5	25	.75	1.5	-40	12	820	58101/120	58101/020
68	6	4	T1	2.9	60	5	25	.75	1.5	-40	16	960	58101/129	58101/029
140	6	4	T2	2.2	40	1	10	1.0	3	-40	16	1200	58201/136	58201/036
160	6	4	T1	4.0	80	5	25	1.5	3	-42	16	820	58101/138	58101/038
270	6	4	T2	2.0	25	1	10	1.0	2	-44	20	1375	58201/143	58201/043
330	6	4	T3	1.4	20	1	10	2.0	6	-44	16	1800	58301/146	58301/046
560	6	4	T2	2.4	48	1	10	2.0	10	-68	20	1255	58201/151	58201/051
560	6	4	T3	1.3	25	1	10	2.0	6	-64	20	1900	58301/151	58301/051
1200	6	4	T4	0.9	20	1	10	3.0	12	-80	25	2388	58401/154	58401/054
1500	6	4	T3	1.8	36	1	10	3.0	15	-84	25	1615	58301/155	58301/055
2200	6	4	T4	1.0	22	1	10	4.0	15	-86	25	2265	58401/157	58401/057
25	8	5	T1	4.0	100	5	25	.75	1.5	-40	12	820	58102/119	58102/019
56	8	5	T1	3.3	59	5	25	.75	1.5	-40	16	900	58102/127	58102/027
120	8	5	T1	4.0	80	5	25	1.0	2	-44	20	820	58102/135	58102/035
120	8	5	T2	2.6	50	1	10	1.0	2	-44	20	1230	58202/135	58202/035
220	8	5	T2	2.4	30	1	10	1.0	2	-44	18	1300	58202/141	58202/041
290	8	5	T3	1.8	25	1	10	2.0	6	-64	20	1745	58302/144	58302/044
430	8	5	T2	2.6	54	1	10	2.0	10	-64	20	1230	58202/149	58202/049
430	8	5	T3	1.4	25	1	10	2.0	6	-64	20	1825	58302/149	58302/049
850	8	5	T4	1.0	22	1	10	3.0	12	-80	25	2456	58402/153	58402/053
20	10	7	T1	4.0	175	5	25	.75	1.5	-32	12	820	58103/117	58103/017
100	10	7	T2	2.4	60	5	25	1.0	2	-35	16	1200	58203/133	58203/033
250	10	7	T3	1.8	30	1	10	2.0	6	-40	16	1720	58303/142	58303/042
300	10	7	T2	2.6	52	1	10	2.0	5	-54	18	1195	58203/145	58203/045
350	10	7	T2	2.6	52	1	10	2.0	5	-60	18	1195	58203/147	58203/047
390	10	7	T3	1.5	25	1	10	2.0	6	-64	20	1800	58303/148	58303/048
750	10	7	T4	0.9	22	1	10	3.0	12	-80	25	2487	58403/152	58403/052
850	10	7	T3	1.8	36	1	10	3.0	12	-84	25	1720	58303/153	58303/053
15	15	10	T1	4.4	155	5	25	.75	1.5	-24	12	780	58104/115	58104/015
33	15	10	T1	4.0	90	5	25	.75	1.5	-28	16	820	58104/121	58104/021
47	15	10	T1	4.7	100	5	25	1.0	2	-28	16	760	58104/125	58104/025
56	15	10	T1	4.7	100	5	25	1.0	2	-28	16	760	58104/127	58104/027
70	15	10	T2	2.8	75	5	25	1.0	2	-28	16	1150	58204/130	58204/030
120	15	10	T2	2.6	50	1	10	1.0	2	-28	16	1230	58204/135	58204/035
170	15	10	T3	2.4	35	1	10	2.0	6	-32	16	1480	58304/139	58304/039
220	15	10	T2	2.8	62	1	10	2.0	5	-35	16	1215	58204/141	58204/041
270	15	10	T2	2.8	60	1	10	2.0	5	-45	18	1215	58204/143	58204/043

American Range

All items BS CECC 30 202 001 Approved

Capacitance µF	Rated Volts 85°C	Category Volts 125°C	Case Size	Max. ESR 25°C 100kHz Ω	Impedance			Leakage Current		Max. Capacitance Change		Max. RMS Ripple 85°C 40kHz (mA) (Note A)	TH	
					-55°C 100kHz Ω	25°C 100kHz Ω	-55°C 100kHz Ω	25°C µA	85 + 125°C µA	-55°C %	-125°C %		Part No. Cap. Tol. ±10% 402/1/-	Part No. Cap. Tol. ±20% 402/1/-
270	15	10	T3	2.2	30	1	10	2.0	6	-56	20	1709	58304/143	58304/043
290	15	10	T2	2.8	65	1	10	2.0	5	-54	18	1215	58204/144	58204/044
540	15	10	T4	1.0	23	1	10	3.0	12	-80	25	2300	58404/150	58404/050
750	15	10	T3	2.1	42	1	10	3.0	15	-80	25	1582	58304/152	58304/052
850	15	10	T4	1.0	24	1	10	4.0	15	-80	25	2300	58404/153	58404/053
1200	15	10	T4	1.0	25	1	10	4.0	15	-84	25	2300	58404/154	58404/054
10	25	15	T1	5.3	220	5	25	.75	1.5	-16	9	715	58105/112	58105/012
43	25	15	T1	5.3	120	5	25	1.5	3	-28	16	715	58105/124	58105/024
50	25	15	T2	3.0	70	5	25	1.0	2	-28	15	1130	58205/126	58205/026
120	25	15	T3	2.6	38	1	10	2.0	6	-32	15	1420	58305/135	58305/035
160	25	15	T2	3.0	60	1	10	2.0	5	-35	15	1130	58205/138	58205/038
180	25	15	T3	2.0	32	1	10	2.0	6	-48	15	1531	58305/140	58305/040
350	25	15	T4	1.0	24	1	10	3.0	12	-64	25	2246	58405/147	58405/047
850	25	15	T4	1.3	26	1	10	4.0	15	-80	25	1970	58405/153	58405/053
8	30	20	T1	6.6	275	5	25	.75	1.5	-16	12	640	58106/109	58106/009
15	30	20	T1	6.2	175	5	25	.75	1.5	-20	12	660	58106/115	58106/015
25	30	20	T1	6.6	160	5	25	1.5	3	-24	12	640	58106/119	58106/019
33	30	20	T1	6.6	160	5	25	1.5	3	-26	12	640	58106/121	58106/021
40	30	20	T2	3.7	65	5	25	1.0	2	-24	12	1065	58206/123	58206/023
68	30	20	T2	2.8	60	5	25	1.0	2	-24	15	1215	58206/129	58206/029
100	30	20	T3	2.6	40	5	25	2.0	6	-28	12	1477	58306/133	58306/033
120	30	20	T2	3.0	60	1	10	2.0	5	-32	15	1185	58206/134	58206/034
150	30	20	T2	3.0	60	1	10	2.0	6	-35	15	1185	58206/137	58206/037
150	30	20	T3	2.3	35	1	10	2.0	6	-48	15	1525	58306/137	58306/037
170	30	20	T2	3.0	65	1	10	2.0	7	-48	15	1185	58206/139	58206/039
300	30	20	T3	2.2	44	1	10	3.0	12	-60	15	1559	58306/145	58306/045
300	30	20	T4	1.2	31	1	10	3.0	12	-60	25	2100	58406/145	58406/045
330	30	20	T3	2.6	52	1	10	3.0	12	-65	25	1373	58306/146	58306/046
350	30	20	T3	2.6	52	1	10	3.0	15	-70	25	1477	58306/147	58306/047
390	30	20	T3	2.6	52	1	10	3.0	15	-75	25	1477	58306/148	58306/048
430	30	20	T3	2.6	54	1	10	3.0	15	-80	25	1477	58306/149	58306/049
560	30	20	T4	1.4	30	1	10	4.0	20	-80	25	1950	58406/151	58406/051
5	50	30	T1	8.0	400	5	25	.75	2	-16	6	580	58107/107	58107/007
10	50	30	T1	6.4	250	5	25	.75	2	-20	9	640	58107/112	58107/012
18	50	30	T1	8.0	200	5	25	1.5	3	-24	12	580	58107/116	58107/016
22	50	30	T1	8.0	190	5	25	1.5	4	-24	12	580	58107/118	58107/018
25	50	30	T2	4.6	95	5	25	1.0	3	-20	12	1065	58207/119	58207/019
47	50	30	T2	3.7	70	5	25	1.0	3	-24	15	1215	58207/125	58207/025
60	50	30	T3	2.9	45	5	25	2.0	7	-16	12	1285	58307/128	58307/028
82	50	30	T3	2.3	45	5	25	2.0	7	-32	15	1460	58307/131	58307/031
100	50	30	T2	3.2	67	5	25	2.0	7	-40	15	1150	58207/133	58207/033
160	50	30	T4	1.3	27	1	10	3.0	16	-50	23	2040	58407/138	58407/038
270	50	30	T3	2.6	52	1	10	3.0	15	-60	25	1373	58307/143	58307/043
350	50	30	T4	1.5	30	1	10	4.0	20	-70	25	1900	58407/147	58407/047
390	50	30	T4	1.5	30	1	10	5.0	25	-75	25	1900	58407/148	58407/048
430	50	30	T4	1.5	31	1	10	5.0	25	-80	25	1900	58407/149	58407/049
4	60	40	T1	9.3	550	5	25	.75	2	-16	6	525	58108/105	58108/005
8.2	60	40	T1	6.6	275	5	25	.75	2	-20	9	625	58108/110	58108/010
20	60	40	T2	4.0	105	5	25	1.0	4	-16	12	1026	58208/117	58208/017
39	60	40	T2	3.0	90	5	25	1.0	4	-24	12	1185	58208/122	58208/022
50	60	40	T3	2.6	50	5	25	2.0	7	-16	12	1341	58308/126	58308/026
68	60	40	T3	2.4	50	5	25	2.0	7	-30	15	1393	58308/129	58308/029
82	60	40	T2	3.2	70	5	25	2.0	7	-36	15	1150	58208/131	58208/031
140	60	40	T4	1.3	28	1	10	3.0	16	-40	20	1990	58408/136	58408/036
220	60	40	T3	2.6	55	1	10	3.0	15	-50	25	1341	58308/141	58308/041
270	60	40	T4	1.5	33	1	10	5.0	22	-70	25	1850	58408/143	58408/043
330	60	40	T4	1.5	31	1	10	5.0	25	-72	25	1850	58408/146	58408/046
3.5	75	50	T1	9.5	650	5	25	1.0	2	-16	6	525	58109/103	58109/003
9	75	50	T1	8.2	280	5	25	2.0	5	-20	9	572	58109/111	58109/011
15	75	50	T2	5.0	150	5	25	1.0	4	-16	9	1000	58209/115	58209/015
40	75	50	T3	3.0	60	5	25	2.0	8	-16	12	1293	58309/123	58309/023
43	75	50	T2	3.8	89	5	25	2.0	8	-24	12	1051	58209/124	58209/024
56	75	50	T2	3.8	84	5	25	2.0	10	-30	15	1051	58209/127	58209/027
56	75	50	T3	2.4	60	5	25	2.0	8	-28	15	1396	58309/127	58309/027
110	75	50	T4	1.3	29	1	10	3.0	20	-35	20	1990	58409/134	58409/034
250	75	50	T4	1.5	33	1	10	5.0	22	-68	25	1850	58409/142	58409/042
30	100	65	T2	3.7	99	5	25	2.0	12	-16	8	1065	58210/120	58210/020
30	100	65	T3	3.3	80	5	25	2.0	8	-16	8	1200	58310/120	58310/020
43	100	65	T3	2.4	70	5	25	2.0	8	-20	8	1389	58310/124	58310/024
86	100	65	T4	1.5	30	1	10	3.0	20	-24	15	1859	58410/132	58410/032
3.6	125	85	T1	11.1	600	5	25	1.0	2	-16	8	495	58111/104	58111/004
14	125	85	T2	5.0	167	5	25	1.0	4	-16	8	1050	58211/114	58211/014
25	125	85	T3	2.6	93	5	25	2.0	8	-16	8	1335	58311/119	58311/019
56	125	85	T4	1.5	47	1	10	3.0	20	-25	15	1859	58411/127	58411/027

Note A. Quoted ripple current figures must be used in conjunction with the multiplying factors shown in Table 1.
For SMTH selection, replace the first '5' of the above Part No's with a '7'

Ordering procedure

Example: TH Case Size T4

56µ F ± 10% 125V

Arcotronics Part Number 402/1/58411/127.

Specification (if required)