

Surface mount type TH Series

RoHS compliance, Halogen free
 higher thermal resistance: 125°C guaranteed (ambient temperature)
 For the Industrial equipment

Specifications

Items	Condition	Specifications								
		THB			THC			THE		
Series	-	THB			THC			THE		
Rated voltage (V)	-	4.0	6.3	10	2.5	6.3	10	2.5	4.0	6.3
Surge voltage (V)	-	4.6	7.2	12	2.9	7.2	12	2.9	4.6	7.2
Category temperature range (°C)	-	-55 to +125								
Capacitance tolerance (%)	120Hz/20°C	M : ±20								
Rated capacitance range (μF)	120Hz/20°C	220 to 470			68 to 220			150 to 330		
Dissipation Factor (DF)	120Hz/20°C	Please see the attached characteristics list								
Leakage current	Rated voltage applied, after 5 minutes	Please see the attached characteristics list								
Equivalent series resistance (ESR)	100kHz/20°C	Please see the attached characteristics list								
Characteristics of impedance ratio at high temp. and low temp.	100kHz/+20°C	-55°C	Z/Z _{20°C}	0.6 to 2.0						
		+125°C	Z/Z _{20°C}	0.6 to 2.0						
Endurance	125°C, 1,000h, category voltage applied	ΔC/C	Within±20% of the initial value							
		DF	≤ 2 times of the initial limit							
		LC	≤ 2 times of the initial limit							
Damp heat (Steady State)	60°C, 90 to 95%RH, 500h, No-applied voltage	ΔC/C	Within+40%, -20% of the initial value							
		DF	≤ 1.5 times of the initial limit							
		LC	≤ 3 times of the initial limit							
Surge	105°C, 1,000 cycles, 1kΩ discharge resistance, surge voltage applied	ΔC/C	Within±5% of the initial value							
		DF	Within the initial limit							
		LC	≤ 3 times of the initial limit							

Marking and dimensions

(unit : mm)

Size code	L ±0.3※1	W ±0.2	H ±0.1※2	S ±0.2	W1 ±0.1
D2E	7.3	4.3	1.8	1.3	2.4
D2	7.3	4.3	1.9	1.3	2.4
D3L	7.3	4.3	2.8	1.3	2.4
D4	7.3	4.3	3.8	1.3	2.4

※1 ±0.2: D2 ※2 ±0.2: D3L, D4

※1 The rated voltage is as follows.

R.V.	2.5	4.0	6.3	10
Mark	e	g	j	A

※2 Lot.No. shows roughly manufacturing date.

Recommended land pattern dimension of PWB

(unit : mm)

Size code	a	b	c
D2E	2.4	2.9	3.7
D2	2.4	2.9	3.7
D3L	2.4	2.9	3.7
D4	2.4	2.9	3.7

Size list

RV: Rated voltage

μF	Series	RV 2.5	RV 4.0	RV 6.3	RV 10.0
68	THC				D2
	THE			D2E	
150	THB			D3L	D4
	THC	D2			
220	THE		D2E		
	THB		D3L	D4	D4
330	THE	D2E			
	THB			D4	
470	THB			D4	

TH series characteristics list

Series	Size code	Part number	Rated voltage (V)	Rated temperature (°C)	Rated capacitance (μF)	Category voltage (V)	Category temperature (°C)	DF (% max)	LC (μA) max/5min.	ESR (mΩmax) 100kHz/20°C	Maximum allowable ripple current (mA rms) 100kHz※1	MSL	
												Reflow temp. ≤ 260°C	Reflow temp. ≤ 250°C
THB	D3L	6THB220ML	6.3	105	220	4.0	125	10	138.6	40	2000	—	5
		4THB330ML	4.0	105	330	2.5	125	10	132.0	40	2000	—	5
	D4	10THB330M	10	105	330	6.3	125	10	330.0	35	3000	—	5
		10THB220M	10	105	220	6.3	125	10	220.0	40	3000	—	5
		6THB470M	6.3	105	470	4.0	125	15	296.1	35	3000	—	5
		6THB330M	6.3	105	330	4.0	125	10	207.9	40	3000	—	5
THC	D2	10THC68M	10	105	68	6.3	125	10	68.0	45	1700	—	5
		6THC150M	6.3	105	150	4.0	125	10	94.5	40	1900	—	5
		2R5THC220M	2.5	105	220	1.6	125	10	55.0	45	1700	—	5
THE	D2E	6THE150M	6.3	105	150	4.0	125	10	94.5	25	2400	—	5
		6THE150MI	6.3	105	150	4.0	125	10	94.5	18	2800	—	5
		4THE220M	4.0	105	220	2.5	125	10	88.0	25	2400	—	5
		4THE220MI	4.0	105	220	2.5	125	10	88.0	18	2800	—	5
		4THE220MF	4.0	105	220	2.5	125	10	88.0	15	3100	—	5
		2R5THE330M	2.5	105	330	1.6	125	10	82.5	25	2400	—	5
		2R5THE330MI	2.5	105	330	1.6	125	10	82.5	18	2800	—	5
		2R5THE330MF	2.5	105	330	1.6	125	10	82.5	15	3100	—	5

※1 100k to 500kHz,45°C