

TR Series High Moisture Resistance Products

Feature

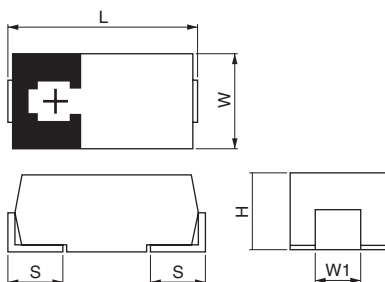
TR series are improved model of the moisture resistance more than standard products.
Suitable for the industrial equipment.



Specifications

Items	Condition	Characteristics		
Operating Temperature range	—	-55 to +105 (°C)		
Rated capacitance range	120Hz/20°C	33 to 680 (μF)		
Capacitance tolerance	120Hz/20°C	M:±20%		
Rated voltage	—	2.5 to 10 (V.DC)		
Dissipation Factor (D.F.)	120Hz/20°C	10.0 (%) *B2size:≤ 8.0 (%) D4size:≤ 15.0 (%)		
Leakage current	Rated voltage applied, after 5 minutes	Please see the attached characteristics list		
Equivalent series resistance (E.S.R. mΩmax.)	100kHz/20°C	Please see the attached characteristics list		
Temperature characteristics of Impedance ratio	100kHz/+20°C	-55°C	Z/Z _{20°C}	1.0 to 2.0
		+105°C	Z/Z _{20°C}	0.6 to 1.0
Endurance	105°C,2000h,(B2size:1000h) rated voltage applied *Rated temp. 85°C products: 85°C,1000h, rated voltage applied	ΔC/C	Within±20% of the initial value	
		D.F.	≤ 1.5 times the initial limit	
		L.C.	≤ The initial limit	
Damp heat (Load)	85°C, 85%RH, 500h, rated voltage applied	ΔC/C	Within+50%, -20% of the initial value (2R5TRE220MAZB, 2R5TRE470M (F.C), 2R5TRE330M (F.C), 2R5TRE220M (F.C)) Within+40%, -20% of the initial value (Except for the above model)	
		D.F.	≤ 1.5 times the initial limit	
		L.C.	≤ The initial limit	
Damp heat (Steady state)	60°C,90 to 95%RH,500h, No voltage applied	ΔC/C	Within+50%, -20% of the initial value (2R5TRE220MAZB, 2R5TRE470M (F.C), 2R5TRE330M (F.C), 2R5TRE220M (F.C)) Within+40%, -20% of the initial value (Except for the above model)	
		D.F.	≤ 1.5 times the initial limit	
		L.C.	≤ 3 times the initial limit	
Surge	105°C,1000 times,1kΩdischarge resistance,surge voltage applied *Rated temp. 85°C products:85°C	ΔC/C	Within±5% of the initial value	
		D.F.	≤ The initial limit	
		L.C.	≤ 3 times the initial limit	

Dimensions



(unit: mm)

Size code	L*1 (±0.3)	W (±0.2)	H*2 (±0.2)	S (±0.2)	W1 (±0.1)
B2	3.5	2.8	1.9	0.8	2.2
D2E	7.3	4.3	1.8	1.3	2.4
D3L	7.3	4.3	2.8	1.3	2.4

*1 ±0.2:B2 *2 ±0.1:D2E,B2

Size List

μF \ RV (V)	2.5	4	6.3	10
33				B2
47			B2	
68		B2		D2E
100			B2	
150		B2	B15G,D2E	
220	B2,D2E	D2E	D2E	
330	D2E	D3L	D3L	
470	D2E	D3L		
680	D3L			

Characteristics List

Size code	SANYO Part number	Rated Voltage (V)	Rated Temperature (°C)	Rated Capacitance (μF)	Category Voltage (V)	Category Temperature (°C)	D.F. (%max.)	L.C. (μA) max./5min.	E.S.R. (mΩmax.) 100kHz/20°C	Maximum allowable ripple current (mA) 100kHz*1	MSL	
											Reflow Temp. ≤ 260°C	Reflow Temp. ≤ 250°C
B15G	6TRG150M	6.3	85	150	5.0	105	10.0	94.5	70	1000	3	
B2	10TRB33M	10.0	105	33	10.0	105	8.0	33.0	70	1100		
	6TRE100MAZB	6.3	85	100	5.0	105	8.0	63.0	35	1400		
	6TRB47M	6.3	105	47	6.3	105	8.0	29.6	70	1100		
	4TRE150MAZB	4.0	85	150	3.2	105	8.0	60.0	35	1400		
	4TRB68M	4.0	105	68	4.0	105	8.0	27.2	70	1100		
	2R5TRE220MAZB	2.5	85	220	2.0	105	8.0	55.0	35	1400		
D2E	10TRE68M	10.0	105	68	10.0	105	10.0	68	25	2400	3	2a
	6TRE220M	6.3	105	220	6.3	105	10.0	138.6	25	2400		
	6TRE220MI								18	2800		
	6TRE150M	6.3	105	150	6.3	105	10.0	94.5	25	2400		
	4TRE220M	4.0	105	220	4.0	105	10.0	88	25	2400		
	4TRE220MI								18	2800		
	2R5TRE470M	2.5	105	470	2.5	105	10.0	117.5	25	2400		
	2R5TRE470MF								15	3100		
	2R5TRE470MC								12	3500		
	2R5TRE330M	2.5	105	330	2.5	105	10.0	82.5	25	2400		
	2R5TRE330MF								15	3100		
	2R5TRE330MC								12	3500		
	2R5TRE220M	2.5	105	220	2.5	105	10.0	55	25	2400		
	2R5TRE220MF								15	3100		
	2R5TRE220MC								12	3500		
D3L	6TRE330ML	6.3	105	330	6.3	105	10.0	207.9	25	2400		
	4TRE470ML	4.0	105	470	4.0	105	10.0	188	25	2400		
	4TRE470MIL								18	2800		
	4TRE330ML	4.0	105	330	4.0	105	10.0	132	25	2400		
	2R5TRE680ML	2.5	105	680	2.5	105	10.0	170	25	2400		
	2R5TRE680MFL								15	3100		

*1 100k to 500kHz, 45°C