

# TS13HR

## FEATURES

- $\phi 6.3 \sim \phi 10$ , 125°C, 4000 hours assured
- Low ESR and high ripple current
- Designed for reflow soldering
- Can meet IATF16949
- Can meet AEC-Q200 compliant

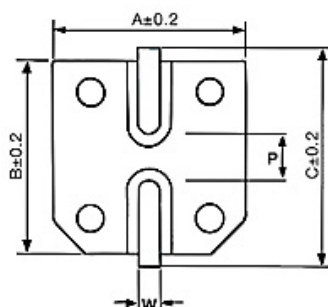
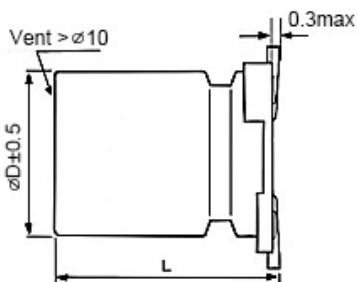


## S P E C I F I C A T I O N S

Category Temp. Range	-55°C to +125°C						
Capacitance Tolerance	±20% (120 Hz / +20 °C)						
Leakage Current	$I \leq 0.01 CV$ or $3\mu A$ whichever is greater (after 2 minutes)						
Tan $\delta$	Please see the attached characteristics list						
Characteristics at Low Temperature	Rated Voltage (V)	25	35	50	63	80	Impedance ratio at 120HZ
	Z (-25°C) / Z (+20°C)	2.0	2.0	2.0	2.0	2.0	
	Z (-55°C) / Z (+20°C)	2.5	2.5	2.5	2.5	2.5	
Endurance	After applying rated working voltage and rated ripple current for 4000 hours at +125 °C ± 2 °C, and then being stabilized at +20 °C , capacitors shall meet the following limits.						
	Capacitance change	Within ±30% of the initial value					
	Dissipation factor (tan $\delta$ )	Less than 200% of the initial value					
	ESR	Less than 200% of the initial value					
	Leakage current	Within the initial limit					
Shelf life	After storage for 1000 h at +125 °C ± 2 °C with no voltage applied and then being stabilized at +20°C, capacitors shall meet the limits specified in endurance.						
	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.						
Resistance to soldering heat	Capacitance change	Within ±10% of the initial value					
	Dissipation factor (tan $\delta$ )	Within the initial limit					
	ESR	Within the initial limit					
	Leakage current	Within the initial limit					
	Frequency correction factor for ripple current	Frequency	$120 \leq f < 1k$	$1k \leq f < 10k$	$10k \leq f < 100k$	$100k \leq f < 500k$	
	Correction Factor	0.1	0.3	0.6	1.0		

### Dimensions (mm)

Markings: SHR, HMR



$\phi D$	L	A	B	C	W	P±0.2
6.3	6±0.5	6.6	6.6	7.2	0.5~0.8	2.0
6.3	7.7±0.5	6.6	6.6	7.2	0.5~0.8	2.0
8	6.5±0.5	8.3	8.3	9.2	0.7~1.2	3.2
8	10±0.5	8.3	8.3	9.2	0.7~1.2	3.2
10	10.5±0.5	10.3	10.3	11.2	0.7~1.2	4.4

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Rated Voltage (V)	Capacitance (±20%) (µF)	Case size		Specification		
		øD(mm)	L(mm)	Rated ripple current①(mA rms)	ESR②(mΩ)	tan δ③
25	47	6.3	6	900	50	0.14
	56	6.3	6	900	50	0.14
	68	6.3	6	900	50	0.14
		6.3	7.7	1400	30	0.14
	82	6.3	6	900	50	0.14
	100	6.3	7.7	1400	30	0.14
	150	6.3	7.7	1400	30	0.14
		8	10	1600	27	0.14
	220	8	10	1600	27	0.14
	270	8	10	1600	27	0.14
	330	8	10	1600	27	0.14
10		10.5	2000	20	0.14	
470	10	10.5	2000	20	0.14	
35	33	6.3	6	900	60	0.12
	47	6.3	6	900	60	0.12
	56	6.3	6	900	60	0.12
	68	6.3	7.7	1400	35	0.12
		6.3	7.7	1400	35	0.12
	100	8	10	1600	27	0.12
		8	10	1600	27	0.12
	180	8	10	1600	27	0.12
	220	10	10.5	2000	20	0.12
	270	10	10.5	2000	20	0.12
330	10	10.5	2000	20	0.12	
50	22	6.3	6	750	80	0.10
	33	6.3	7.7	1100	40	0.10
	47	8	10	1250	30	0.10
	68	8	10	1250	30	0.10
		8	10	1250	30	0.10
	100	10	10.5	1600	28	0.10
		10	10.5	1600	28	0.10
150	10	10.5	1600	28	0.10	
63	10	6.3	6	700	120	0.08
	22	6.3	7.7	900	80	0.08
	33	8	10	1100	40	0.08
	47	8	10	1100	40	0.08
	56	10	10.5	1400	30	0.08
	68	10	10.5	1400	30	0.08
	82	10	10.5	1400	30	0.08
	100	10	10.5	1400	30	0.08
80	22	8	10	1050	45	0.08
	33	8	10	1050	45	0.08
		10	10.5	1200	36	0.08
	47	10	10.5	1200	36	0.08
56	10	10.5	1200	36	0.08	

1. Rated ripple current (100kHz / +125°C)

2. ESR (100kHz / +20°C)

3. tan δ (120Hz / +20°C)

Note: Specifications are subject to change without notice. For more detail and update, please visit our website.