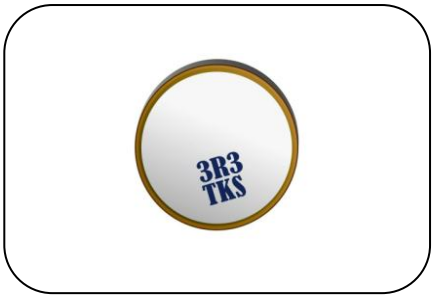
Ceramic PTC Thermistor: PSA Series
For Motor Starting Application

■ Features



1. RoHS compliant
2. PSA versions are uncased, metalized disc for clamp-contacting
3. Voltage ratings: from 160V_{ac} to 430V_{ac}
4. Stable over a long life
5. Operating temperature range:
   -10 ~ +85°C (V=V_{max})
   -25 ~ +125°C (V=0)
6. Agency recognition:
   UL&cUL File No.: E138827
   VDE File No.: 40017625
   TUV File No:R 50030891
   CQC File No:CQC03001008127 ,CQC03001008128

■ Recommended Applications

Time delay relay for compressors in refrigerators or freezers.

■ Part Number Code

P	S	A	3	3	0	H	A	G	C	6	0	4			Y
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Product Code	
PS	THINKING Ceramic PTC Thermistor PS Series

Series	
A	Disc Type

Resistance (R_{25})	
4R7	4.7Ω
330	33Ω
101	100Ω

Tolerance of R_{25}	
M	±20%
H	±25%
N	±30%
Y	Special

Curie Temperature	
A2	120℃
A3	130℃
AG	135℃

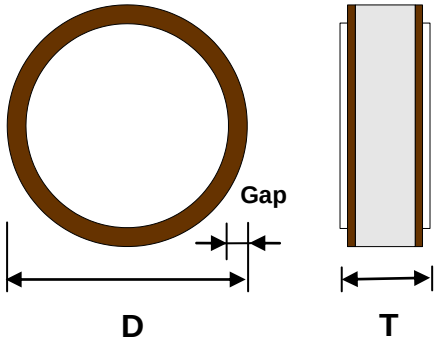
Max. Voltage	
A4	140 V
A8	180 V
C6	360 V
E0	500 V

Structure Code
04 ,05 ,06 and 33

Internal Control Code

Optional Suffix	
Y	RoHS Compliant

■ Structures and Dimensions



Series	Dimensions (mm)	
	D	T
PSA*04	20.0(+0.5/-1.0)	2.5±0.2
PSA*05	17.5(+0.5/-1.0)	2.5±0.2
PSA*06	16(+0.5/-1.0)	2.5±0.2
PSA*33	20(+0.5/-1.0)	3.2±0.2

Gap: 0.9±0.6 mm

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■ Characteristics

Part No.	Zero-power Resistance at 25℃	Rated Voltage	Max. Voltage	Max. Current	Operating Time	Power Consumption	Recovery Time	Safety Approvals			
	R_{25}(Ω)	V_r (V_{ac})	V_{max} (V_{ac})	I_{max}(A)	t_o (Sec.)	P_{max}(W)	t_r (Sec.)	UL/ cUL	VDE	TUV	CQC
PSA3R3□AGA604	3.3	120	160	12	0.3-1.2	3.5	70	√		√	√
PSA4R7□AGA804	4.7	120	180	12	0.3-1.2	3.5	70	√		√	√
PSA6R8□AGB004	6.8	120	200	10	0.3.-1.8	3.5	70	√		√	√
PSA100□AGB304	10	120	230	9	0.2-1.3	3.2	65	√		√	√
PSA150□AGB504	15	230	250	8	0.2-1.0	3.2	65	√		√	√
PSA220□AGC004	22	230	300	7	0.2-1.0	3.2	65	√		√	√
PSA330□AGC604	33	230	360	6	0.2-1.0	3.2	65	√		√	√
PSA470□AGD004	47	230	400	5	0.2-1.0	3.2	65	√		√	√
PSA680□AGD304	68	230	430	4	0.2-1.0	3.2	65	√		√	√
PSA4R7□AGA805	4.7	120	180	10	0.3-1.0	3.4	65	√		√	√
PSA6R8□AGB005	6.8	120	200	9	0.3-1.0	3.4	65	√		√	√
PSA100□AGB205	10	120	220	8	0.3-1.0	3.2	65	√		√	√
PSA150□AGB405	15	230	240	7	0.2-0.8	3.2	65	√		√	√
PSA220□AGB805	22	230	280	6	0.2-0.8	3.2	65	√		√	√
PSA330□AGC205	33	230	320	4	0.2-0.8	3.2	65	√		√	√
PSA470□AGC505	47	230	350	4	0.2-0.8	3.2	65	√		√	√
PSA680□AGD005	68	230	400	4	0.2-0.8	3.2	65	√		√	√
PSA4R7□AGA606	4.7	120	160	10	0.3-1.0	3.0	50	√		√	√
PSA6R8□AGA806	6.8	120	180	9	0.3-1.0	3.0	50	√		√	√
PSA100□AGB006	10	120	200	8	0.3-1.0	3.0	50	√		√	√
PSA150□AGC506	15	230	350	7	0.2-0.6	3.0	50	√	√		
PSA220□AGC506	22	230	350	6	0.2-0.6	3.0	50	√	√		
PSA330□AGC506	33	230	350	6	0.2-0.6	3.0	50	√	√		
PSA150□A2C533	15	230	350	8	0.2-1.0	3.2	120	√	√		
PSA250□A2C533	25	230	350	8	0.2-1.0	3.2	120	√	√		
PSA330□A2C533	33	230	350	7	0.2-1.0	3.2	120	√	√		

Note: □ is tolerance of R_{25}

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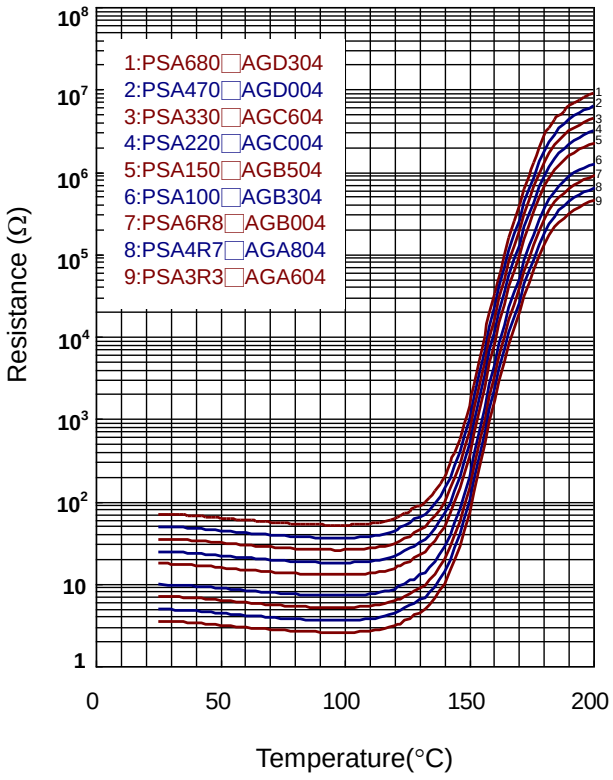
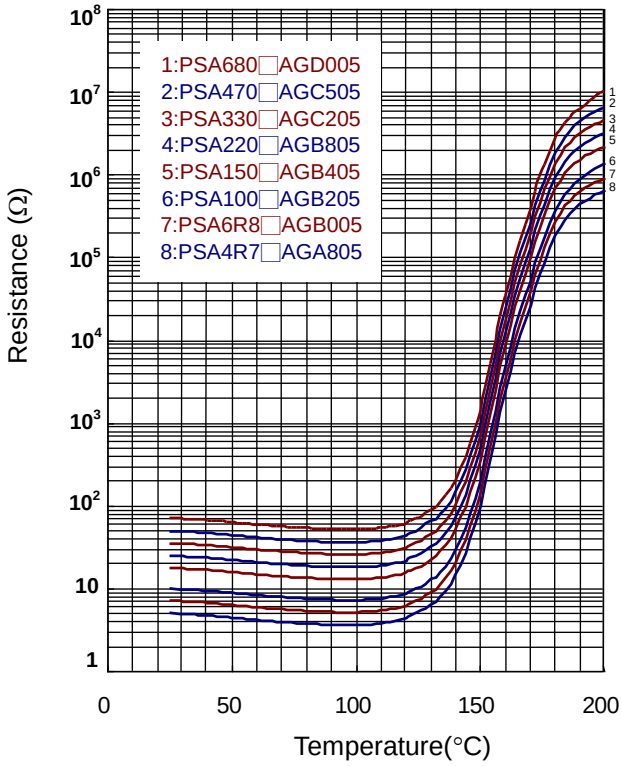
■ R-T Characteristic Curve (Typical)

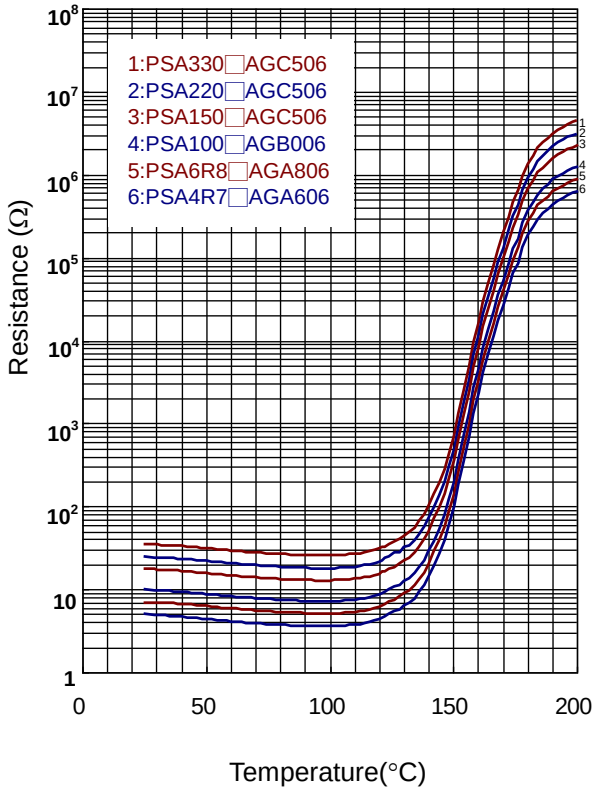
PSA *04 series



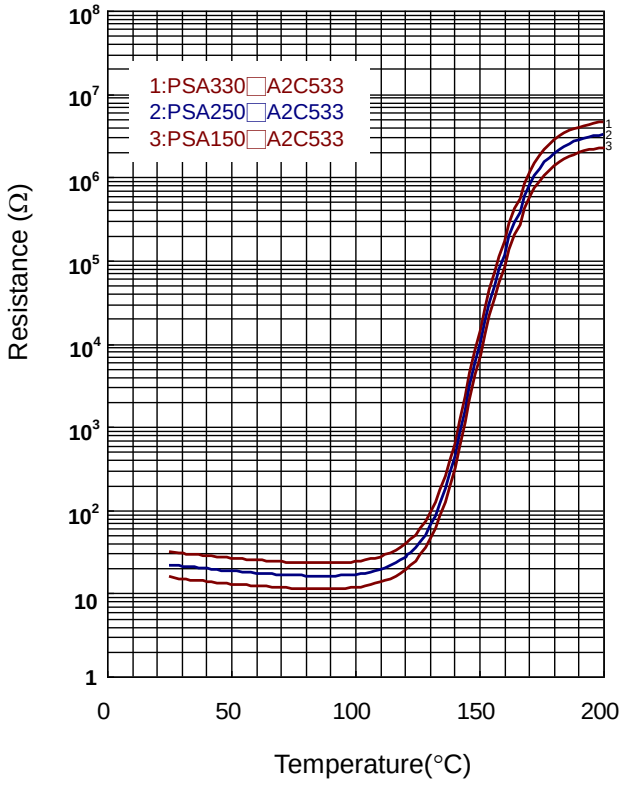
PSA *05 series



PSA *06 series



PSA *33 series



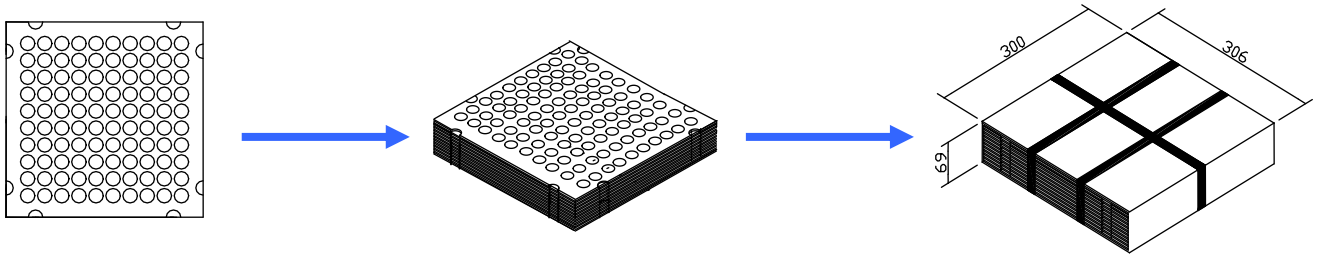
■ Reliability Test

<table>
<tr><th>Item</th><th>Standard</th><th>Test conditions and Methods</th><th>Specifications</th></tr>
<tr><td>Rapid Change of Temperature</td><td>IEC 60738-1</td><td>The thermal shock conditions shown below shall be repeated 5 cycles.
<table>
<tr><th>Step</th><th>Temperature (℃)</th><th>Period (minutes)</th></tr>
<tr><td>1</td><td>-40 ± 5</td><td>30 ± 3</td></tr>
<tr><td>2</td><td>Room temperature</td><td>5 ± 3</td></tr>
<tr><td>3</td><td>85 ± 5</td><td>30 ± 3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>5 ± 3</td></tr>
</table></td><td>$|\triangle R_{25}/R_{25}| \leqq 20\%$
No visible damage</td></tr>
<tr><td>Climatic Sequence</td><td>IEC60738-1</td><td>Dry heat: 125 ℃ for 16 hrs
Damp heat first cycle: 40℃, 95% R.H ,cycle time: 24 hrs
Cold: -25℃ for 2 hrs
Damp heat (cyclic), remaining cycles: 5 cycles
Test according to IEC60068-2-30</td><td>$|\triangle R_{25}/R_{25}| \leqq 20\ \%$
No visible damage</td></tr>
<tr><td>Damp Heat, Steady State</td><td>IEC 60738-1</td><td>40±2℃,90~95%RH, for 1000±2hrs</td><td>$|\triangle R_{25}/R_{25}| \leqq 20\ \%$
No visible damage</td></tr>
<tr><td>Endurance at Maximum Operating Temperature and Maximum Voltage</td><td>IEC 60738-1</td><td>85±5℃, Vmax, Imax for 1000±2hrs.</td><td>$|\triangle R_{25}/R_{25}| \leqq 20\%$
No visible damage</td></tr>
<tr><td>Endurance at Maximum Voltage</td><td>IEC60738-1</td><td>25±5℃, Vmax, Imax,
6 sec. on and 15sec. off × 500,000 cycles</td><td>$|\triangle R_{25}/R_{25}| \leqq 20\ \%$
No visible damage</td></tr>
</table>

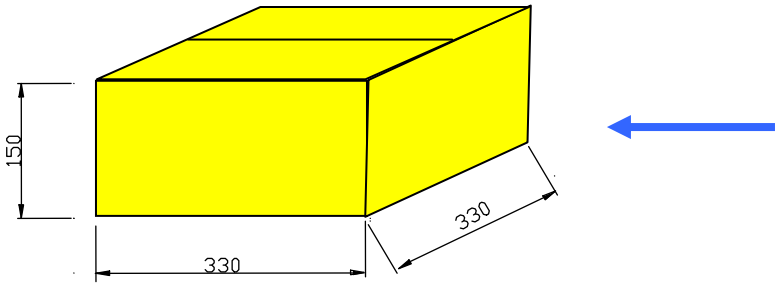
■ Packaging

Series	Quantity (pcs /carton)
PSA*04	1,000
PSA*05	1,000
PSA*06	1,500
PSA*33	1,000

(unit:mm)



Paper board (300x300x4.8) **Stacking** **Bundling**



Carton

■ Warehouse Storage Conditions of Products

- **Storage Conditions：**
  1. Storage Temperature： -10℃~ +40℃
  2. Relative Humidity： ≦75%RH
  3. Keep away from corrosive atmosphere and sunlight.
- **Period of Storage**：1 year

■ Usage

Please keep products away from the conditions mentioned below to avoid their characteristic deterioration and failure.

1. Corrosive gas or deoxidizing gas（Cl_2, H_2S, NH_3, SOx, NOx etc.）
2. Place in a vacuum or put pressure
3. Salt water, oil, solvent and chemical liquid
4. Flammable gas
5. Place in splashed water, or high humidity and dewing place
6. Other places similar to any conditions mentioned above