

# ASC Series

Anti-Sulfur Thick Film Chip Resistor



- Resistances from 1 Ohm to 10M Ohms
- Power Rating 0.05 to 1 Watt
- Resistance Tolerances to  $\pm 0.5\%$
- TCR's to  $\pm 200$  ppm/ $^{\circ}\text{C}$
- Sizes: 0201/0402/0603/0805/1206/2010 /2512
- Moisture Resistant Anti-Sulfur Construction
- AEC-Q200 Certified

SPECIFICATIONS								
Package Size	Power Rating (W) at 70°C	Operating Temperature Range	MAX Operating Voltage <sup>1</sup>	MAX Overload Voltage <sup>2</sup>	Resistance Range E24 / E96 values			TCR PPM/ $^{\circ}\text{C}$
					$\pm 0.5\%$	$\pm 1\%$	$\pm 5\%$	
0201	0.05	-55 to +125	25V	50V	-	1 $\Omega$ - 10M $\Omega$		$\pm 200$
0402	0.0625	-55 to +155	50V	100V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$
0603	0.100		50V	100V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$
0805	0.125		150V	300V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$
1206	0.250		200V	400V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$
1210	0.333		200V	400V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$
2010	0.750		200V	400V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$
2512	1		250V	500V	1 $\Omega$ - 9.76 $\Omega$ 10 $\Omega$ - 1M $\Omega$ 1.02M $\Omega$ - 10M $\Omega$			$\pm 200$ $\pm 100$ $\pm 200$

<sup>1</sup> Operating Voltage =  $\sqrt{P \cdot R}$  or MAX Listed, whichever is lower.

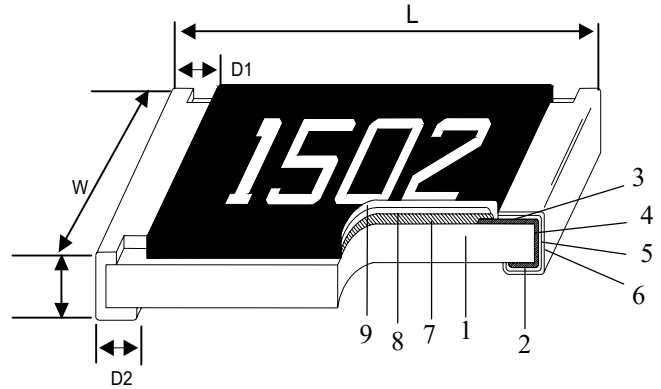
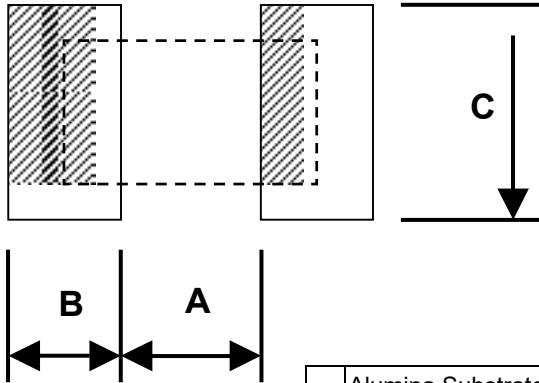
<sup>2</sup> Overload Voltage =  $2.5 \cdot \sqrt{P \cdot R}$  or MAX Listed, whichever is lower.

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## Recommended Land Pattern



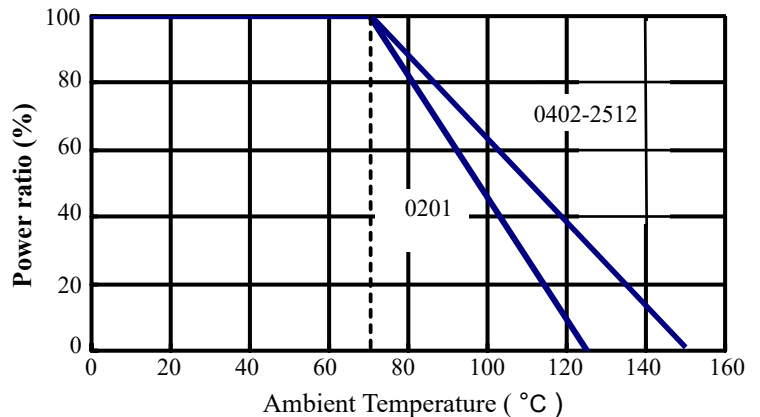
4	Alumina Substrate	4	Edge Electrode	7	Resistor Layer
3	Bottom Electrode	5	Barrier Layer	8	Primary Overcoat
	Top Electrode	6	External Electrode	9	Secondary Overcoat

Size	L (mm)	W (mm)	T (mm)	D1 (mm)	D2 (mm)	Weight* (g)
0201	0.60 ± 0.03	0.30 ± 0.03	0.23 ± 0.03	0.15 ± 0.05	0.15 ± 0.05	0.150
0402	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.20 ± 0.10	0.620
0603	1.60 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20	2.042
0805	2.00 ± 0.10	1.25 ± 0.10	0.50 ± 0.10	0.35 ± 0.20	0.40 ± 0.20	4.368
1206	3.10 ± 0.10	1.55 ± 0.10	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.20	8.947
1210	3.10 ± 0.10	2.60 ± 0.15	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.20	15.959
2010	5.00 ± 0.10	2.50 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20	24.241
2512	6.35 ± 0.10	3.10 ± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20	39.448

\* Weight based on 1,000 pcs

Recommended Land Pattern (mm)			
Type	A	B	C
0201	0.30	0.25	0.30
0402	0.50	0.45	0.60
0603	0.90	0.60	0.90
0805	1.20	0.70	1.30
1206	2.00	0.90	1.60
1210	2.00	0.90	2.80
2010	3.80	0.90	2.80
2512	3.80	1.60	3.50

## Derating Curve



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Environmental Characteristics			
Test	Requirement		Conditions
	±1% and Below	±5%	
TCR	As Spec.		-55°C to +125, +25°C is reference temperature
Short Time Overload	±(1%+0.05Ω)	±(2%+0.05Ω)	RCWV*2.5 or Max. overload voltage for 5 seconds, 2 seconds for high power series
Insulation Resistance	>10 GΩ		Max. Overload for 1 minute
Endurance	±(2%+0.10Ω)	±(3%+0.10Ω)	70 ± 2°C, RCWV for 1000 hrs w/ 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(2%+0.10Ω)	±(3%+0.10Ω)	40±2°C, 90 to 95% R.H. RCWV for 1000 hrs w/ 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	±(1%+0.05Ω)	±(1.5%+0.10Ω)	at +125/+155°C for 1000 hrs
Bending Strength	±(1%+0.05Ω)	±(1%+0.05Ω)	Bending once for 5 seconds 2010,2512 sizes: 2 mm other sizes: 3 mm
Solderability Terminal Finish = Nickel Tin	95% min. coverage		245±5°C for 3 seconds
Resistance to Soldering Heat	±(0.5%+0.05Ω)	±(1%+0.05Ω)	260±5°C for 10 seconds
Voltage Proof	No breakdown or flashover		1.42 times Max. Operating Voltage for 1 minute
Leaching	Individual leaching area ≤ 5% Total leaching area ≤ 10%		260±5°C for 30 seconds
Rapid Change of Temperature	±(0.5%+0.05Ω)	±(1%+0.05Ω)	-55°C to +125/+155°C, 5 cycles
Sulfur Test	±(0.5%+0.05Ω)	±(0.5%+0.05Ω)	H2S, 50 ± 2°C, 91 to 93% R.H., no power rating for 1000 hrs

RCWV(Rated Continuous Working Voltage) =  $\sqrt{P \cdot R}$  or Max. Operating Voltage whichever is lower

## Ordering Information

Part Description: Part Type - Package Size- Resistance - Tolerance - TCR

Example: ASC0402 50 Ohms 0.05% 100ppm

(Note: if no TCR is specified: The highest value will be supplied)