

0402 0505 0603 0805 1005 1206 2010 2512 2525 3725

ULR

HI PWR

RoHS

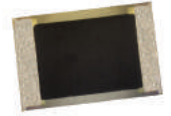
Sn62

NON-MAG

BONDABLE

Partial Wraparound Thick Film Chip Resistors for High Frequency Applications

The IMS N-Series thick film high power chip resistors and chip terminations on aluminum nitride are ideal for most applications requiring high thermal conductivity in a small size package. AlN is an ideal replacement for BeO with its high power dissipation and no environmental or health hazards. Thick film technology provides a stable resistive element at a very affordable price.



FEATURES

- High stability thick film resistive element
- Very high power dissipation
- AlN substrate material
- Tight TCRs
- Maximum working voltage: $E=\sqrt{PR}$
- Standard resistance range is 10Ω to $2K\Omega^*$ (Other values available, consult factory)
- Standard tolerance is 2% or 5% (Other tolerances available, consult factory)
- Operating temperature: -55°C to $+150^{\circ}\text{C}$
- Ultra Leach Resistant terminals (ULR) available

* Max value for 0505 and 2525 sizes is $1K\Omega$

DIMENSIONS

Part	Length	Width	Height 'C' (max)	Height 'D' (max)	Height 'G' (max)	Height 'T' (max)
0402	0.040"	0.020"	0.015"	0.020"	N/A	N/A
0505	0.050"	0.050"	0.015"	0.020"	0.035"	N/A
0603	0.060"	0.030"	0.015"	0.020"	0.035"	N/A
0805	0.080"	0.050"	0.015"	0.020"	0.035"	N/A
1005	0.100"	0.050"	N/A	0.020"	0.035"	N/A
1206	0.126"	0.063"	N/A	0.020"	0.035"	N/A
2010	0.197"	0.098"	N/A	0.020"	0.035"	0.050"
2512	0.250"	0.120"	N/A	0.020"	0.035"	0.050"
2525	0.250"	0.250"	N/A	0.020"	0.035"	0.050"
3725	0.375"	0.250"	N/A	0.020"	0.035"	0.050"

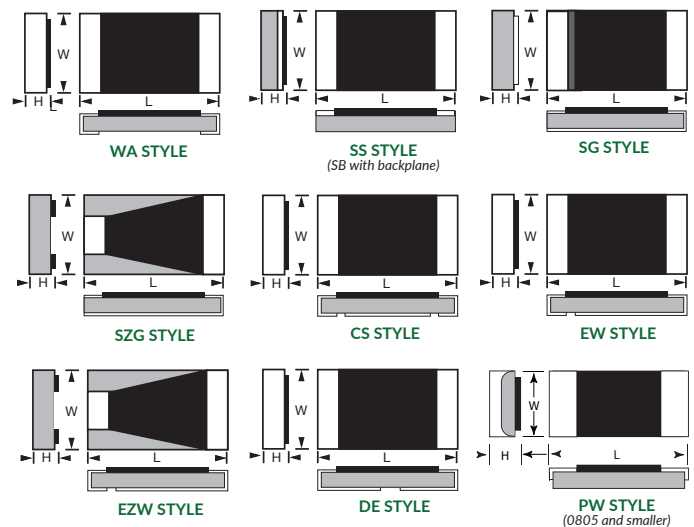
C=0.010" (available with size 0805 and smaller)

D=0.015"

G=0.025" (available with size 0402 and larger)

T=0.040" (available with size 2010 and larger)

Contact factory for detailed dimensional information.



TERMINATIONS

Termination Style Availability

Part	WA	SS	SB	SG	SZG	CS	EW	EZW	DE	PW
0402	•	•	•	•	N/A	N/A	N/A	N/A	N/A	•
0505	•	•	•	•	N/A	N/A	N/A	N/A	N/A	•
0603	•	•	•	•	N/A	N/A	N/A	N/A	N/A	•
0805	•	•	•	•	N/A	•	•	N/A	N/A	•
1005	•	•	•	•	•	•	•	N/A	•	N/A
1206	•	•	•	•	•	•	•	N/A	•	N/A
2010	•	•	•	•	•	•	•	•	•	N/A
2512	•	•	•	•	•	•	•	•	•	N/A
2525	•	•	•	•	•	•	•	•	•	N/A
3725	•	•	•	•	•	•	•	•	•	N/A

• Indicates Availability

Termination Style

- WA - Wraparound
- SS - Single Sided
- SB - Single Backplane
- SG - Single Wrap to Ground
- SZG - Single Wrap to Ground with Tapered Resistor Element
- CS - Center Stripe
- EW - Extended Wrap
- EZW - Extended Wrap with Tapered Resistor Element
- DE - Dual Extended
- PW - Partial Wrap

Termination Materials

- 3 PtAg
- 7 Au over PtAu
- 8 PtAg ULR
- C PtAg w/ Sn62 Solder
- H PtAg w/ Sn62 Solder ULR
- P PtAg w/ Sn96 Solder
- R PtAg w/ Sn96 Solder ULR

RoHS Compliant =

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A Word About Thermal Management

Tests of aluminum nitride "SG" 50Ω terminations demonstrate the above power capacities, assuming a thermally conductive application where the steady-state baseplate temperature of the chip is maintained at or below the values identified in the below table and the maximum film temperature did not exceed 150°C. The data also shows that the ratio of temperature rise versus power applied increases with increasing chip size (for a given thickness) so the criteria should be carefully considered when operating larger chips. As with any application, actual performance of these chips will depend on a host of circuit dependent parameters.

Thickness	0.010" (C)			0.015" (D)			0.025" (G)			0.040" (T)			
	Baseplate Temp	ΔT=100	ΔT=85	ΔT=50	ΔT=100	ΔT=85	ΔT=50	ΔT=100	ΔT=85	ΔT=50	ΔT=100	ΔT=85	ΔT=50
Item Size	0402	13W	11W	7.1W	8.8W	7.3W	4.7W	N/A	N/A	N/A	N/A	N/A	N/A
	0505	45W	37W	24W	30W	25W	16W	20W	16W	10W	N/A	N/A	N/A
	0603	24W	20W	13W	16W	13W	8.7W	9.5W	7.7W	5.2W	N/A	N/A	N/A
	0805	75W	55W	37W	50W	37W	25W	30W	25W	16W	N/A	N/A	N/A
	1005	N/A	N/A	N/A	60W	48W	30W	40W	30W	20W	N/A	N/A	N/A
	1206	N/A	N/A	N/A	105W	85W	55W	70W	55W	35W	N/A	N/A	N/A
	2010	N/A	N/A	N/A	150W	120W	75W	90W	75W	48W	60W	48W	30W
	2512	N/A	N/A	N/A	200W	150W	100W	120W	100W	60W	70W	60W	38W
	2525	N/A	N/A	N/A	400W	300W	200W	240W	190W	120W	150W	120W	75W
	3725	N/A	N/A	N/A	640W	500W	340W	380W	310W	200W	250W	200W	125W

ORDERING INFORMATION

Example: 33Ω, 2%, 2010 Center Strip style resistor on 0.015" substrate with PtAg terminations

N D 3 - 2010 S CS 33R0 G

Substrate Thickness
 C - 0.010"¹ G - 0.025"
 D - 0.015" T - 0.040"²

Termination Material
 -3 PtAg
 -7 Au over PtAu³
 -8 PtAg ULR
 -C PtAg w/ Sn62 Solder
 -H PtAg w/ Sn62 Solder ULR
 -P PtAg w/ Sn96 Solder
 -R PtAg w/ Sn96 Solder ULR

Case Size
 0402 0505 0603 0805 1005
 1206 2010 2512 2525 3725

Resistance value
 The first three digits are significant values. The fourth is the number of zeroes following. The R indicates a decimal point when resistance value is less than 100Ω.

Style
 WA SB CS DE PW
 SS EW EZW⁴ SZG⁵ SG⁶

Trim Method
 Leave blank for normal. S=Scrub Cut

Tolerance
 G - 2% J - 5%

Packaging: B=Bulk, T=Tape and Reel
 RoHS Compliant =
 ULR = Ultra Leach Resistant

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- C-0.010" Substrate available in sizes 0805 and smaller.
- T-0.040" Substrate available in sizes 2010 and larger.
- Au over PtAu terminal metalization available on Single Sided (SS), Single Sided with Backplane (SB) and Single Wrap to Ground (SG) only.
 A NX7- Single Wrap to Ground style features bondable terminal on input pad only, ground pad in PtAu.
- 'EZW' denotes an Extended Wrap to Ground terminal style with a trapezoidal resistor body available in sizes 1005 and larger.
- 'SZG' denotes a Single Wrap to Ground terminal style with a trapezoidal resistor body available in sizes 1005 and larger.
- 'SG' denotes a Single Wrap to Ground terminal style with a rectangular resistor body.