0505 0805
1005 1206

N-

Series

2010 2512
2525 3725

Features

Very high power dissipation

Thick film technology

AℓN substrate material

Resistance values from 10 ohms to 2 Kohms

Standard tolerance 5%

Tight TCRs

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Thick Film High Power Chip Resistors and Terminations on Aluminum Nitride

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 it's high power dissipation and no enviromental or health hazards. Thick film technology provides a stable resistive element at a very affordable price. These chips feature the following:

- High stability thick film resistive element
- AℓN substrate material
- Standard resistance range is 10Ω to 2KΩ, other values available*
- Standard tolerance is 2% or 5%, other tolerances available*
- Operating temperature: -55°C to +155°C
- Typical TCR is ±150PPM
- Maximum working voltage: E=√PR
- Available in bulk or tape and reel*

*Consult factory

Please see ordering information on the back.

Terminal materials:

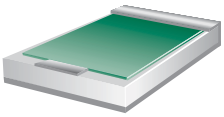
-3 ✓ PtAg (platinum silver) for epoxy or solder attachment

-7 Gold over PtAu (platinum gold) for bonding

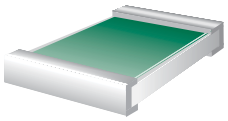
-C Solder coated PtAg for solder attachment

-P ✓ 96/4 Tin Silver Solder coated PtAg for solder attachment

Terminal styles



SG - Single wrap with groundplane



WA- Full wraparound

Various additional styles are available. Please see reverse.

Rated Power

Thickness		0.015" "D"			0.025" "G"			0.040" "T"		
Baseplate Temp		**50°C**	**70°C**	**100°C**	**50°C**	**70°C**	**100°C**	**50°C**	**70°C**	**100°C**
CASE SIZE	**0505**	30W	25W	16W	20W	16W	10W	N/A	N/A	N/A
	0805	50W	37W	25W	30W	25W	16W	N/A	N/A	N/A
	1005	60W	48W	30W	40W	30W	20W	N/A	N/A	N/A
	1206	105W	85W	55W	70W	55W	35W	N/A	N/A	N/A
	2010	150W	120W	75W	90W	75W	48W	60W	48W	30W
	2512	200W	150W	100W	120W	100W	60W	70W	60W	38W
	2525	N/A	N/A	N/A	240W	190W	120W	150W	120W	75W
	3725	N/A	N/A	N/A	380W	310W	200W	250W	200W	125W

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 above 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 above 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.

Dimensions

Case	Length	Width	Height Option 'D'	Height Option 'G'	Height Option 'T'
0505	0.050"	0.050"	0.020"Max	0.035"Max	N/A
0805	0.080"	0.050"	0.020"Max	0.035"Max	N/A
1005	0.100"	0.050"	0.020"Max	0.035"Max	N/A
1206	0.126"	0.063"	0.020"Max	0.035"Max	N/A
2010	0.197"	0.098"	0.020"Max	0.035"Max	0.050"Max
2512	0.250"	0.120"	0.020"Max	0.035"Max	0.050"Max
2525	0.250"	0.250"	N/A	0.035"Max	0.050"Max
3725	0.375"	0.250"	N/A	0.035"Max	0.050"Max

Choose the height option that best suits your power dissipation needs (see Rated Power chart on reverse) and build your Part Number below.

Additional options available. Please contact factory.
For detailed dimensional information, outline drawing is available from factory.

Termination Style Availability

	WA	SS	SB	SG	CS	EW	DE	ZG
0505	•	•	•	•	N/A	N/A	N/A	N/A
0805	•	•	•	•	•	•	N/A	N/A
1005	•	•	•	•	•	•	•	N/A
1206	•	•	•	•	•	•	•	N/A
2010	•	•	•	•	•	•	•	•
2512	•	•	•	•	•	•	•	•
2525	•	•	•	•	•	•	•	•
3725	•	•	•	•	•	•	•	•

• Indicates Availablitiy

Ordering Information

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

Example: N D 3 - 2010 CS 33R0 G

Substrate Thickness
D - 0.015"[1]
G - 0.025"
T - 0.040"[2]

Termination Material
3 - PtAg
7 - Au over PtAu[3]
C - PtAg with Solder
P - PtAg with RoHS Solder

Case Size
0505 2010
0805 2512
1005 2525
1206 3725

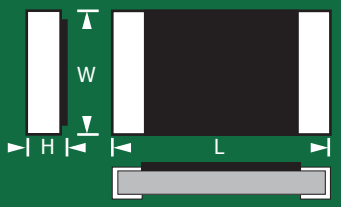
Tolerance
G - 2%
J - 5%

Resistance value

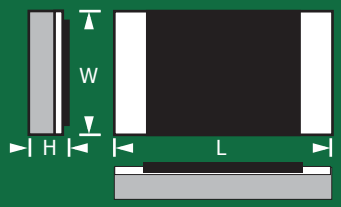
The first three digits are significant values. The fourth is the number of zeroes following. The R indicates a decimal point for resistance values less than 100Ω.

Style
WA SB CS DE
SS EW ZG[4] SG[5]

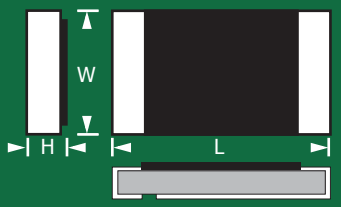
1. 0.015" Substrate available in sizes 2512 and smaller
2. 0.040" Substrate available in sizes 2010 and larger
3. Au over PtAu terminal metalization available on Single Sided, Single Sided with Backplane and Single Wrap to Ground only. A NX7- Single Wrap to Ground style features bondable terminal on input pad only, ground pad in PtAu.
4. 'ZG' denotes a Single Wrap to Ground terminal style with a trapezoidal resistor body available in sizes 2010 and larger
5. 'SG' denotes a Single Wrap to Ground terminal style with a rectangular resistor body



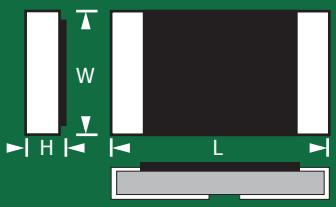
WA Style



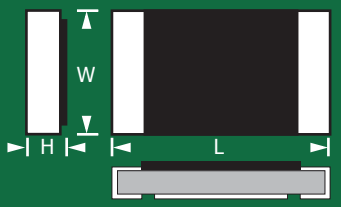
SS Style (SB with backplane)



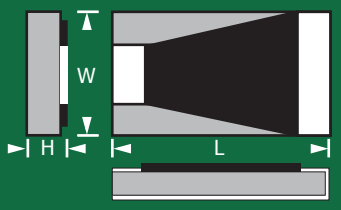
EW Style



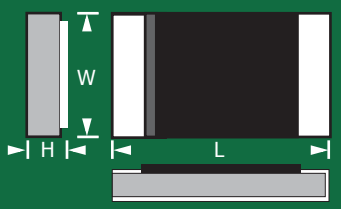
DE Style



CS Style



ZG Style



SG Style

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