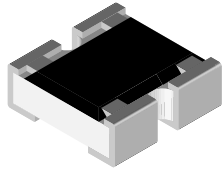


# Thick Film Chip Attenuator, Surface Mount, Unbalanced $\pi$ Type



## FEATURES

- Single component reduces board space and component counts - replaces 3 or more components
- Tolerance matching and temperature tracking superior to individual components
- Maximum power dissipation: 0.075 W for CZA06S; 0.040 W for CZA04S
- Consult factory for extended values, non-standard tolerances, impedance matching and other attenuation values
- Frequency range: DC to 3 GHz
- Surface mount chip attenuator in a resistor array package
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### Note

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

## STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{70\text{ }^\circ\text{C}}$ W	IMPEDANCE $\Omega$	ATTENUATION RANGE AND TOLERANCE	
			$\pm 0.3$ dB (L)	$\pm 0.5$ dB (H)
CZA04S	0.040	50	0 dB, 1 dB to 5 dB	6 dB to 20 dB
CZA06S	0.075	50/75/100/300/600	0 dB, 1 dB to 5 dB	6 dB to 20 dB

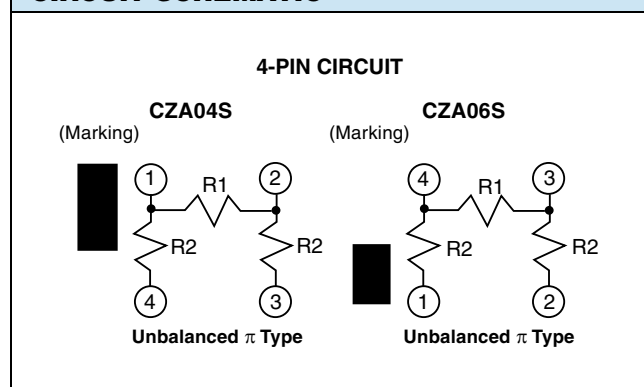
### Note

- Power rating depends on the maximum temperature at the solder point, the component placement density and the substrate material

IMPEDANCE	50 $\Omega$	75 $\Omega$	100 $\Omega$	300 $\Omega$	600 $\Omega$
1	1	1	1	1	1
1.5	1.5	1.5	1.5	1.5	1.5
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16	16	16	16	16	16
17	17	17	17	17	17
18	18	18	18	18	18
19	19	19	19	19	19
20	20	20	20	20	20

Attenuation  
in dB <sup>(1)</sup>

## CIRCUIT SCHEMATIC



### Note

<sup>(1)</sup> Consult factory for other attenuations

## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CZA04S	CZA06S
Rated dissipation at 70 $^\circ\text{C}$	W	0.040	0.075
VSWR		1.2 max.	1.2 max.
Category temperature range	$^\circ\text{C}$	-55 to +125	-55 to +150
Frequency range		DC to 3 GHz	DC to 3 GHz



GLOBAL PART NUMBER INFORMATION																	
New Global Part Numbering: <b>CZA06S04015050LRT</b> (preferred part numbering format)																	
C	Z	A	0	6	S	0	4	0	1	5	0	5	0	L	R	T	
MODEL	PIN COUNT	ATTENUATION	IMPEDANCE	TOLERANCE	PACKAGING	SPECIAL											
CZA04S CZA06S	04 = 4 pin	010 = 1.0 dB 015 = 1.5 dB 020 = 2.0 dB 150 = 15.0 dB 000 = 0 dB or 0 Ω jumper	050 = 50 Ω 075 = 75 Ω 100 = 100 Ω 000 = 0 Ω jumper	H = ± 0.5 dB L = ± 0.3 dB Z = 0 Ω Jumper	EA = lead (Pb)-free, T/R (all) TD = tin lead, T/R (04 only) RT = tin lead, T/R (06 only)	(Dash number) Up to 1 digit Blank = standard											
Historical Part Number Example: <b>CZA06S04015050LRT</b> (will continue to be accepted)																	
CZA	06S	04	015	050	L	RT											
MODEL	CASE SIZE	PIN COUNT	ATTENUATION	IMPEDANCE	TOLERANCE	PACKAGING											

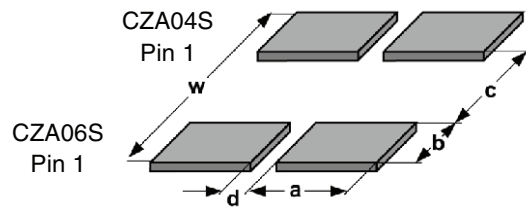
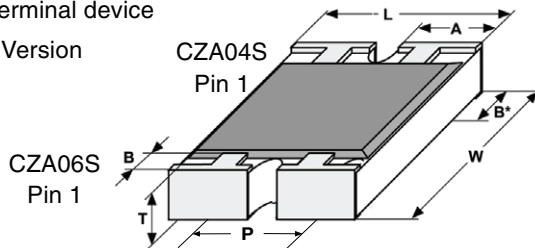
Note

- For additional information on packaging, refer to the Surface Mount Network Packaging document ([www.vishay.com/doc?31540](http://www.vishay.com/doc?31540))

**DIMENSIONS**

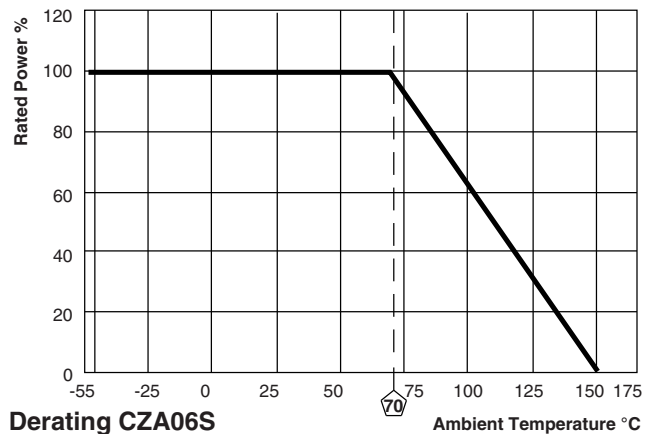
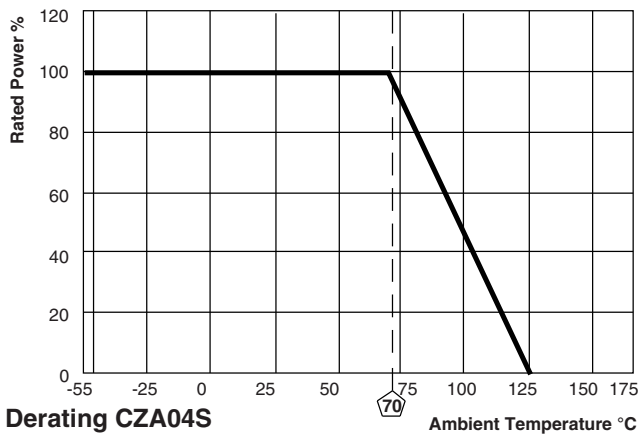
4-Terminal device

S - Version



GLOBAL MODEL	DIMENSIONS in inches (millimeters)						
	L	W	T	A	P	B	B*
CZA04S	0.039 ± 0.004 (1.00 ± 0.10)	0.039 ± 0.006 (1.00 ± 0.15)	0.014 ± 0.004 (0.36 ± 0.10)	0.013 ± 0.006 (0.33 ± 0.15)	0.026 (0.65)	0.006 ± 0.004 (0.15 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)
CZA06S	0.063 ± 0.006 (1.60 ± 0.15)	0.059 ± 0.006 (1.50 ± 0.15)	0.020 ± 0.004 (0.51 ± 0.10)	0.024 ± 0.006 (0.61 ± 0.15)	0.031 (0.80)	0.012 ± 0.006 (0.30 ± 0.15)	0.012 ± 0.006 (0.30 ± 0.15)

GLOBAL MODEL	SOLDER PAD DIMENSIONS in inches (millimeters)				
	c	w	d	a	b
CZA04S	0.018 (0.45)	0.083 (2.10)	0.008 (0.20)	0.018 (0.45)	0.032 (0.82)
CZA06S	0.031 (0.80)	0.122 (3.10)	0.014 (0.36)	0.025 (0.63)	0.045 (1.15)





<b>PERFORMANCE</b>			
<b>TEST</b>	<b>CONDITIONS OF TEST</b>	<b>TEST RESULTS (TYPICAL TEST LOTS)</b>	
		<b>0.5 dB to 5 dB</b>	<b>6 dB to 20 dB</b>
Endurance test at 70 °C per EIA 575-3.14	1000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF"	± 0.2 dB	± 0.3 dB
Overload per EIA 575-3.6	Short time overload	± 0.2 dB	± 0.3 dB
Thermal shock	Per EIA 575-3.5	± 0.2 dB	± 0.3 dB
Moisture resistance	Per EIA 575-3.10	± 0.2 dB	± 0.3 dB
Resistance to soldering heat	10 s at 260 °C solder bath temperature EIA 575 3.8	± 0.2 dB	± 0.3 dB
High temperature exposure	Per EIA 575-3.7	± 0.2 dB	± 0.3 dB
Low temperature operations	Per EIA-575-3.6	± 0.2 dB	± 0.3 dB
Solderability and leaching	EIA 575-3.12	95 % coverage	



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