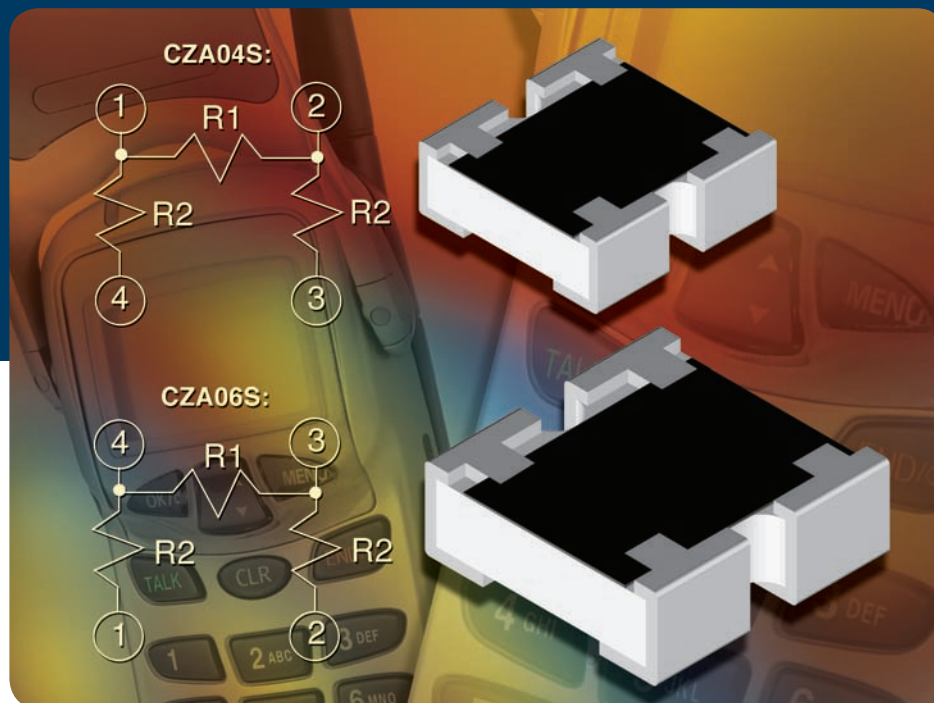




# SURFACE-MOUNT CHIP ATTENUATOR

CZA



## Surface-Mount Chip Resistor Attenuator

### KEY BENEFITS

- Single component reduces board space and component count
- Tolerance matching and temperature tracking superior to individual components
- Specific impedance and attenuation in an unbalanced  $\pi$ -type configuration
- Frequency range to 3 GHz DC

### APPLICATIONS

- RF signal attenuation
- Cell phones
- Mobile and hand-held equipment
- Power “step-down” applications

Datasheet is available on our web site at [www.vishay.com](http://www.vishay.com)  
for CZA - <http://www.vishay.com/doc?31061>

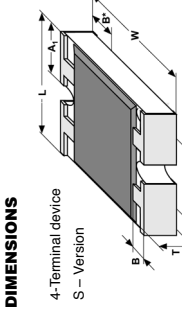
# Surface-Mount Chip Resistor Attenuator

## 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 Watts for CZA06S; 0.040 Watts for CZA04S
- Frequency range: DC to 3GHz
- Impedance matching and other attenuation values
- Frequency range: DC to 3GHz
- Lead (Pb)-Free Version is RoHS Compliant

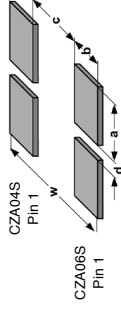


RoHS\* COMPLIANT



## DIMENSIONS

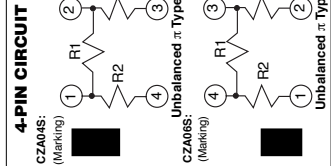
4-Terminal device  
S - Version



GLOBAL MODEL	POWER RATING		ATTENUATION RANGE AND TOLERANCE	
	P <sub>70°C</sub> W	Ω	± 0.3 dB (L)	± 0.5 dB (H)
CZA04S	0.040	50	1 - 5 dB	6 - 20 dB
CZA06S	0.075	50 / 75 / 100 / 300 / 600	1 - 5 dB	6 - 20 dB

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

Attenuation in dB	IMPEDANCE		ATTENUATION RANGE AND TOLERANCE	
	50Ω	75Ω	100Ω	300Ω
1	1	1	1	1
1.5	1.5	1.5	1.5	1.5
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20



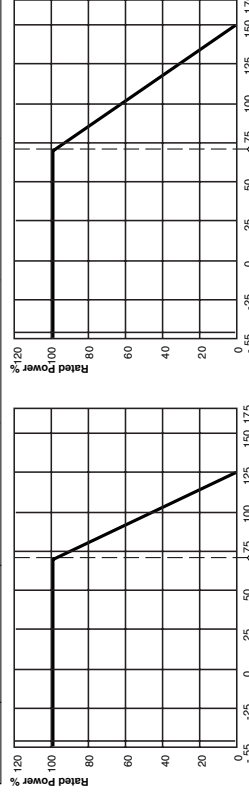
TECHNICAL SPECIFICATIONS	
PARAMETER	UNIT
Electrical Dissipation at 70°C	W
VS10V	0.040
VS15V	0.075
Category / Temperature Range	-55 / +125 °C
Frequency Range	DC to 3GHz

GLOBAL PART NUMBER INFORMATION																
New Global Part Numbering: CZA06S04015050LRT (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	04 = 4 Pin	010 = 1.0dB 015 = 1.5dB 020 = 2.0dB 150 = 15.0dB 000 = 0Ω Jumper	050 = 50Ω 075 = 75Ω 100 = 100Ω 000 = 0Ω Jumper	H = ±0.5dB L = ±0.3dB Z = 0Ω Jumper	EA = Lead 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										
CZA06S	06S	04	015	050	050	RT										
MODEL	CASE SIZE	PIN COUNT	ATTENUATION	IMPEDANCE	TOLERANCE	PACKAGING										

Historical Part Number example: CZA06S04015050LRT (will continue to be accepted)

\*Pb containing terminations are not RoHS compliant, exemptions may apply.

GLOBAL MODEL	DIMENSIONS in inches (millimeters)							
	L	W	T	A	P	B	B*	B
CZA04S	0.039 ± 0.004 [1.00 ± 0.10]	0.039 ± 0.006 [1.00 ± 1.15]	0.014 ± 0.004 [0.36 ± 0.10]	0.13 ± 0.006 [0.33 ± 0.15]	0.026 [0.65]	0.006 ± 0.004 [0.16 ± 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 ± 1.15]	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]	



Derating CZA04S Derating CZA06S

PERFORMANCE	
TEST	TEST RESULTS
Endurance Test at 70°C per EIA 575-3.14	1000 hours at 70°C, 1.5 hours "ON", 0.5 hours "OFF"
Overload per EIA 575-3.6	± 0.5dB to 5dB ± 0.3dB
Thermal Shock per EIA 575-3.5	± 0.2dB
Moisture Resistance per EIA 575-3.10	± 0.2dB
Resistance to Soldering Heat 10, ssc0045 at 260°C solder bath temperature per EIA 575-3.8	± 0.2dB
High Temperature Exposure per EIA 575-3.7	± 0.2dB
Low Temperature Operations per EIA 575-3.6	± 0.2dB
Solderability & Leaching EIA 575-3.12	± 0.2dB
	95% Coverage

Revision 10-Oct-05

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