

THERMAL VARIABLE ATTENUATORS C-TA/E-TA

FEATURES

- Flat VSWR characteristic to the temperature change.
- Linear attenuation characteristic to temperature fluctuation.
- RoHS compliant.

APPLICATIONS

- Temperature compensation of microwave high power amplifier.

SPECIFICATIONS

Electrical characteristics

	C-TA3225	E-TA3216	E-TA2012
Attenuation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10 dB at 25 °C	1, 2, 3, 4, 5 dB at 25 °C	1, 2, 3, 4, 5, 6, 7, 8, 9, 10 dB at 25 °C
Tolerance	± 0.5 dB (at 25 °C, 50 Ω load)	DC ~ 3 GHz : +0.5 dB, DC ~ 1 GHz : -0.5 dB 1 ~ 3 GHz : -1.0dB (at 25 °C, 50 Ω load)	± 0.5 dB (at 25 °C, 50 Ω load)
Impedance	50 Ω		
VSWR	Less than 1.3	DC ~ 2 GHz : Less than 1.3 2 ~ 3 GHz : Less than 1.7 (at 25 °C)	Less than 1.3 (at 25 °C)
Temperature Coefficient	N1 : (1~5dB), N2~N8 : (1~10dB) at 1 GHz : Please refer to the chart of "Example of Attenuation vs. Temperature"	N5~N8 at 1 GHz : Please refer to the chart of "Example of Attenuation vs. Temperature"	N1~N8 at 1 GHz : Please refer to the chart of "Example of Attenuation vs. Temperature" N1 is manufactured upon receipt of order basis
Frequency Range	DC ~ 2 GHz	DC ~ 3 GHz	
Power Rating	100 mW		63 mW
Operating Temperature Range	- 40 °C ~ +100 °C		

Temperature Characteristics

TCA : Temperature Coefficient of Attenuation N1 ~ N8 (dB/dB/°C)		
N1 ; - 0.0119	N4 ; - 0.0047	N7 ; - 0.0026
N2 ; - 0.0088	N5 ; - 0.0041	N8 ; - 0.0019
N3 ; - 0.0062	N6 ; - 0.0035	

Note. Temperature coefficient of E-TA3216 is N5 ~ N8 and E-TA2012 is N1 ~ N8.

PART NUMBER DESIGNATION

C-TA3225 T 1 dB N8

Series name and size
C-TA3225, E-TA3216, E-TA2012

Form of packaging
T : Taping (1000 pcs/reel)
Blank : Bulk (100 pcs/in plastic bags)

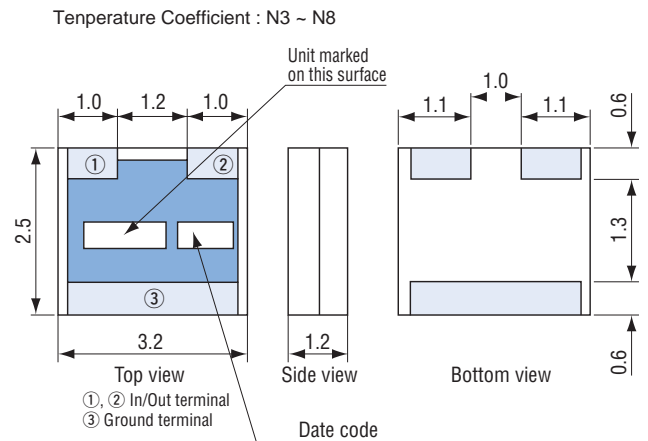
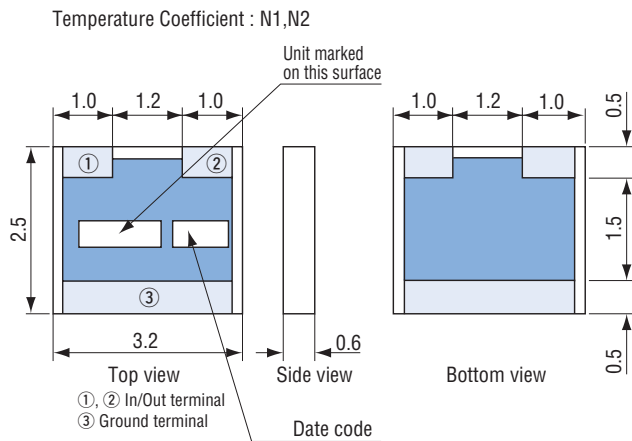
Temperature Coefficient of Attenuation
(N1, N2, N3, N4, N5, N6, N7, N8)

Attenuation [dB]
(1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

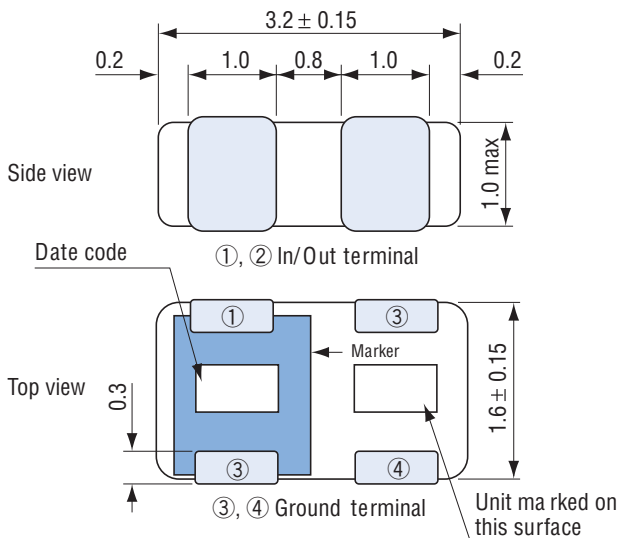
C-TA/E-TA
THERMAL VARIABLE ATTENUATORS

■外形寸法図 OUTLINE DIMENSIONS

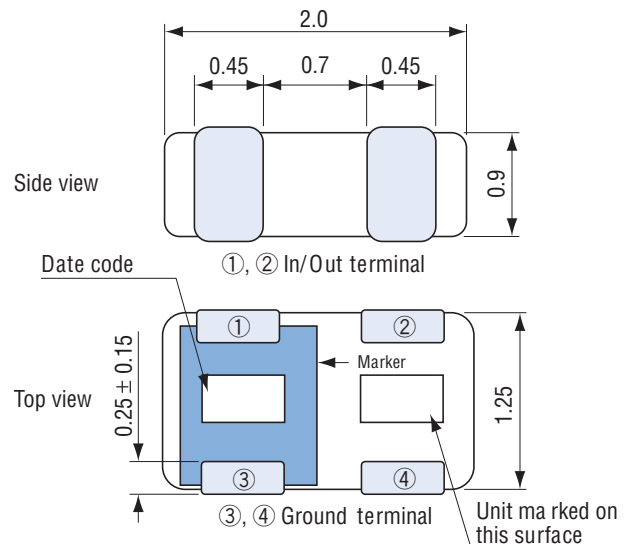
● **C-TA3225** Unless otherwise specified, tolerance : ± 0.3 (Unit : mm)



● **E-TA3216** Unless otherwise specified, tolerance : ± 0.2 (Unit : mm)



● **E-TA2012** Unless otherwise specified, tolerance : ± 0.2 (Unit : mm)

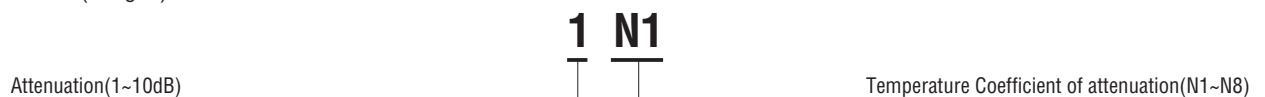


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● Date code (2 digits)



● Model code (3 digits)

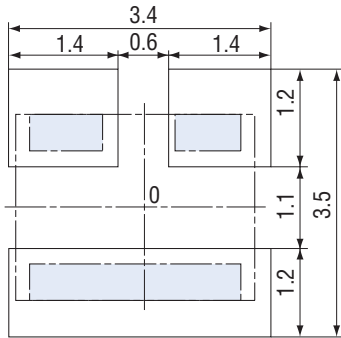


C-TA/E-TA
THERMAL VARIABLE ATTENUATORS

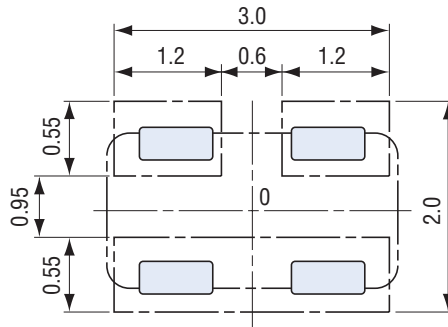
RECOMMENDED PAD OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.3 (Unit : mm)

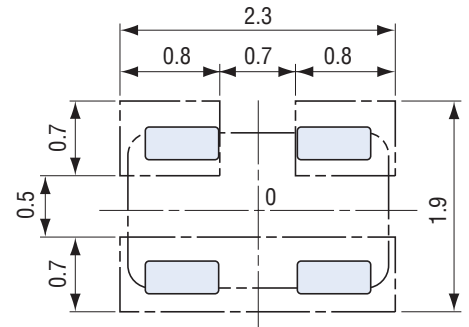
● **C-TA3225**



● **E-TA3216**



● **E-TA2012**

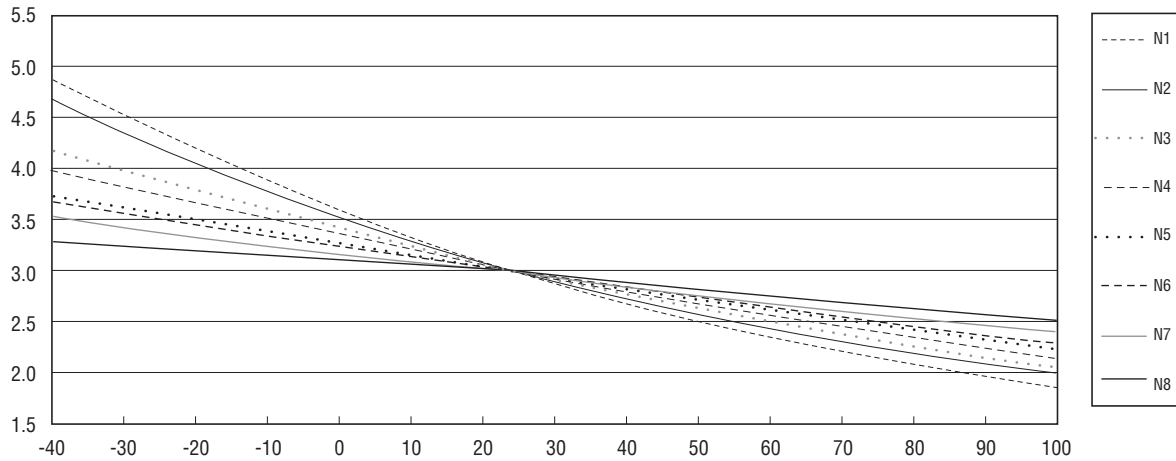


Note) The zero point is center of mounting

EXAMPLE OF ATTENUATION VS. TEMPERATURE : 3 dB

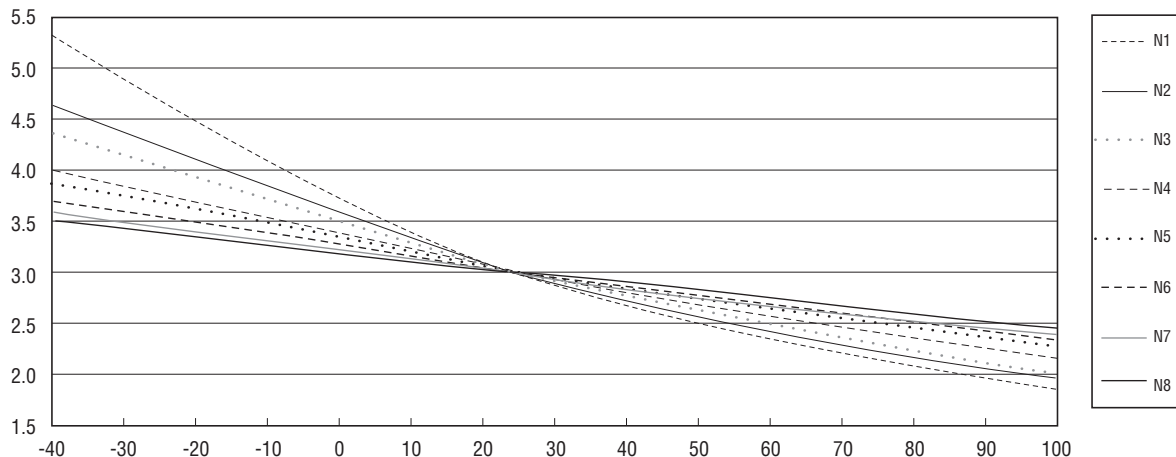
● **C-TA3225 3dB N***

3 dB Attenuation vs. Temperature



● **E-TA2012 3dB N***

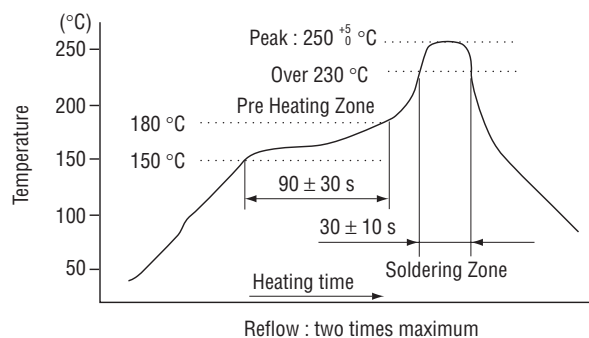
3 dB Attenuation vs. Temperature



ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Specifications
A short time overload voltage	Apply the rated voltage of 2.5 times for 5 sec.	Attenuation ± 0.1 dB
Load life	70 \pm 3 $^{\circ}$ C, Apply rated voltage for 90 minutes followed by 30 minutes Intermission. This cycle is repeated for 1000 hours.	Attenuation ± 0.2 dB
Humidity life	60 \pm 2 $^{\circ}$ C, 90 ~ 95 %RH, Apply rated voltage for 90 minutes followed by 30 minutes Intermission. This cycle is repeated for 1000 hours.	Attenuation ± 0.2 dB
Thermal shock	- 40 $^{\circ}$ C ~ 100 $^{\circ}$ C (0.5 h), 5 cycles	Attenuation ± 0.1 dB
Vibration	Vibration 10~55 Hz、Amplitude 1.5 mm、 10-55-10 Hz/minutes、xyz 2h each	Attenuation ± 0.1 dB
Soldering heat	Peak temperature 255 $^{\circ}$ C, two times maximum	<ul style="list-style-type: none"> • C-TA3225 Attenuation ± 0.1 dB (1 ~ 4 dB) Attenuation ± 0.2 dB (5 ~ 10 dB) • E-TA3216,E-TA2012 Attenuation ± 0.1 dB
Solderability	245 \pm 5 $^{\circ}$ C (lead free), 3 \pm 0.5 s	95 % or more of the immersed area should be adequately wetted.

REFLOW PROFILE FOR SOLDERING HEAT EVALUATION



PACKAGING SPECIFICATIONS

- Taping packaging specifications
 - Taping will be accepted for units of 1000 pcs. per reel.
 - Orders will be accepted for units of 1000 pcs. i.e., 1000, 2000, pcs., etc.
 - Taping version is boxed with one reel (1000 pcs.).
 - Maximum number of consecutive missing pieces = 2
- Bulk pack specifications
 - Unit of bulk in a plastic bag package is 100 pcs. per pack.
 - Boxing of bulk in a plastic bag is performed with 200 pcs. per box.