

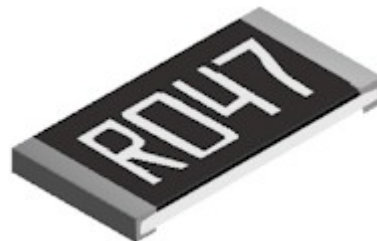
## CSTN THIN FILM CURRENT SENSING CHIP RESISTOR

### Features

- Thin film process
- High power rating up to 3 watts in 2512 size
- Tight tolerance down to  $\pm 0.5\%$
- Extremely low TCR down to  $\pm 50$  PPM/C
- Resistance values from 50m to 1ohm
- High purity alumina substrate for high power dissipation

### Applications

- Power Management Applications
- Switching Power Supply
- Over Current Protection in Audio Applications
- Voltage Regulation Module(VRM)
- DC-DC Converter, Battery Pack, Charger, Adaptor
- Automotive Engine Control
- Disk Drive
- Portable Devices(PDA, Cell Phone)



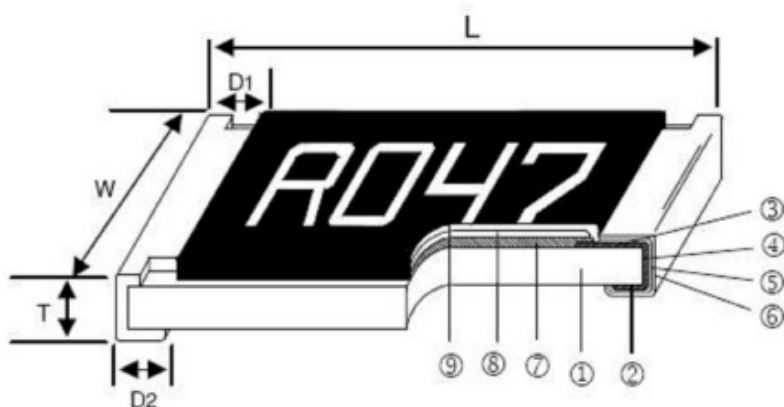
### ■ GENERAL SPECIFICATIONS

Model	Power Rating	Operating Temp. Range	Resistance Range[mΩ]		TCR[PPM/C]	
			$\pm 0.5\%$	$\pm 1\%$		
CSTN02(0402)	1/16W	-55 - +155C	500 - 1000		$\pm 100$ $\pm 50$	
CSTN03(0603)	1/10W		200 - 300 301 - 1000		$\pm 100$ $\pm 50$	
CSTN05(0805)	1/8W		200 - 300 301 - 1000		$\pm 100$ $\pm 50$	
CSTN06(1206)	1/4W		-	50 - 100		$\pm 200$ $\pm 100$ $\pm 50$
CSTN10(2010)	3/4W		50 - 100 101 - 300 301 - 1000		$\pm 200$ $\pm 100$ $\pm 50$	
CSTN12(2512)	1W		50 - 100 101 - 300 301 - 1000		$\pm 200$ $\pm 100$ $\pm 50$	

### ■ CHARACTERISTICS

Temp. Coefficient of Resistance	As Spec	+25/-55/+25/+125/+25C
Short Time Overload	$\pm 1\%$	RCWV*2.5 or Max. Overloading Voltage, 5sec.
Insulation Resistance	$>1000M\Omega$	Apply 100VDC for 1minute
Endurance	$\pm 1\%$	$70\pm 2C$ , Max. working voltage for 1000hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Damp Heat with Load	$\pm 0.5\%$	$40\pm 2C$ 90-95% R.H. Max. working voltage for 1000hrs with 1.5hrs "ON" and 0.5hrs "OFF"
Bending Strength	As Spec	Bending amplitude 3mm for 10sec.
Soldering Ability	95%min coverage	$245C\pm 5C$ , $2\pm 0.5sec$
Resistance to Soldering Heat	$\pm 0.5\%$	$260\pm 5C$ , $10\pm 1sec$
Dielectric Withstand Voltage	By Type	Apply Max. Overload Voltage for 1minute
Thermal Shock	$\pm 0.5\%$	-55C - 150C, 100 cycles
Low Temperature Operation	$\pm 0.5\%$	1 hours, -65C followed by 45 minutes of RCWV

## ■ STRUCTURE

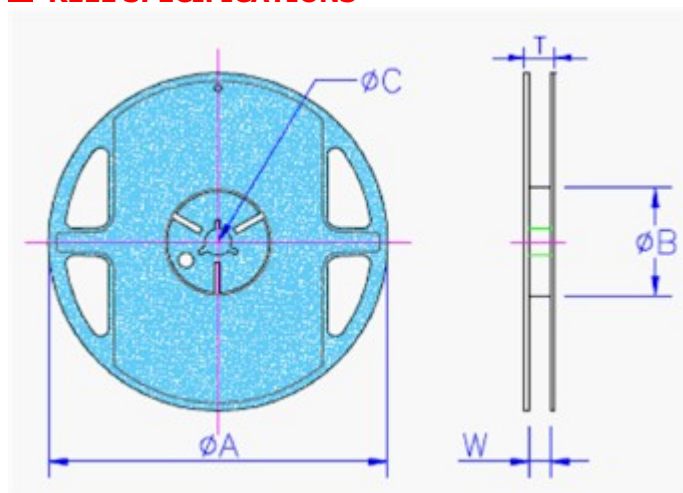


- 1 Alumina Substrate
- 2 Bottom Electrode(Ag-Pb)
- 3 Top Electrode(Ag)
- 4 Edge Electrode(NiCr)
- 5 Barrier Layer(Ni)
- 6 External Electrode(Sn)
- 7 Resistor Layer(NiCr)
- 8 Overcoat(Epoxy)
- 9 Marking

## ■ DIMENSIONS

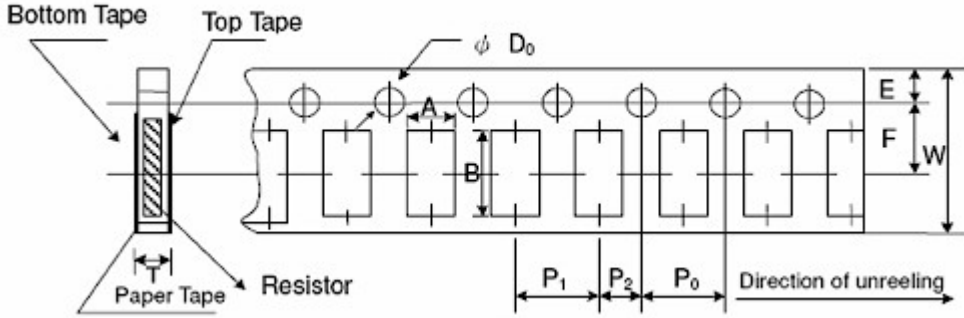
Model	Size(Inch)	L	W	T	D1	D2	Weight(g) (1000pcs)
CSTN02	0402	1.00±0.05	0.50±0.05	0.32±0.10	0.25±0.10	0.20±0.10	0.56
CSTN03	0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20	3.1
CSTN05	0805	2.00±0.15	1.25±0.15	0.55±0.10	0.30±0.20	0.40±0.25	5.6
CSTN06	1206	3.05±0.15	1.55±0.15	0.55±0.10	0.50±0.30	0.40±0.25	12.3
CSTN10	2010	5.00±0.20	2.45±0.15	0.60±0.15	0.60±0.30	0.50±0.25	26.7
CSTN12	2512	6.35±0.20	3.15±0.15	0.60±0.10	0.60±0.30	0.55±0.25	49.6

## ■ REEL SPECIFICATIONS



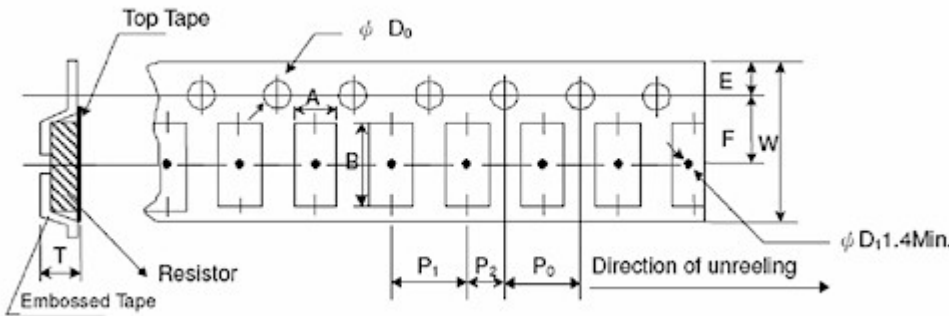
Model	Dimensions [mm]					Paper Tape [pcs]	Emboss Plastic Tape [pcs]
	ΦA	ΦB	ΦC	W	T		
CSTN02	178±1.0	60±1.0	13.5±0.7	9.5±1.0	11.5±1.0	10,000	-
CSTN03	178±1.0	60±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
CSTN05	178±1.0	60±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
CSTN06	178±1.0	60±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
CSTN10	178±1.0	60±1.0	13.5±0.7	9.5±1.0	15.5±1.0	-	4,000
CSTN12	178±1.0	60±1.0	13.5±0.7	9.5±1.0	15.5±1.0	-	4,000

**PAPER TAPE SPECIFICATIONS**



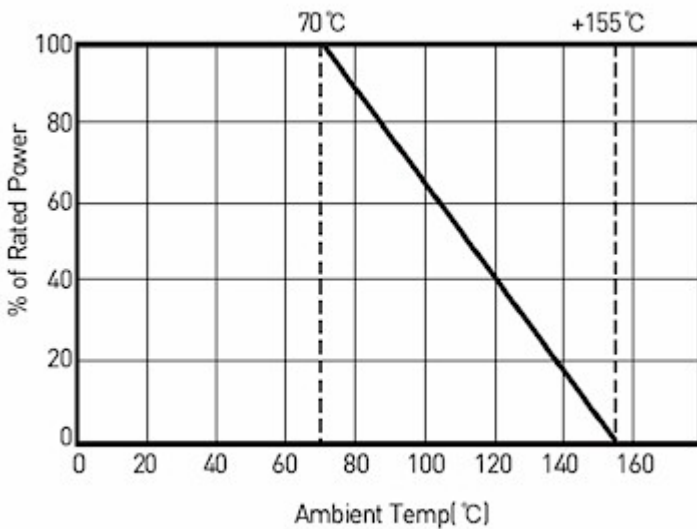
Model	Dimensions[mm]									
	A	B	W	E	F	P0	P1	P2	ΦD0	T
CSTN02	0.70±.05	1.16±.05	8.00 ±.10	1.75 ±.05	3.5 ±.05	4.00 ±.10	2.00±.05	2.00 ±.05	1.55 ±.05	0.40±.03
CSTN03	1.10±.05	1.90±.05								0.60±.03
CSTN05	1.60±.05	2.37±.05								0.75±.05
CSTN06	2.00±.05	3.55±.05								0.75±.05

**EMBOSED TAPE SPECIFICATIONS**



Model	Dimensions[mm]									
	A	B	W	E	F	P0	P1	P2	ΦD0	T
CSTN10	2.85±.10	5.45±.10	12.0±.10	1.75±.10	5.5±.05	4.00±.05	4.00±.10	2.00±.05	1.50±.10	1.00±.20
CSTN12	3.40±.10	6.65±.10	12.0±.10	1.75±.10	5.5±.05	4.00±.05	4.00±.10	2.00±.05	1.50±.10	1.00±.20

**DERATING CURVE**



■ ORDERING PROCEDURE EXAMPLE

