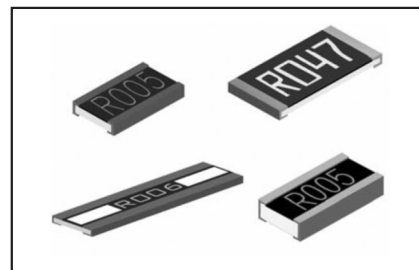


Current Sensing Chip Resistors

- 3W rating in 1W size, 1225 package
- Low TCR from $\pm 100 \sim \pm 600$ ppm/°C
- Resistance values from 1m to 1 Ω
- High purity alumina substrate for high power dissipation
- Long side terminations with higher power rating

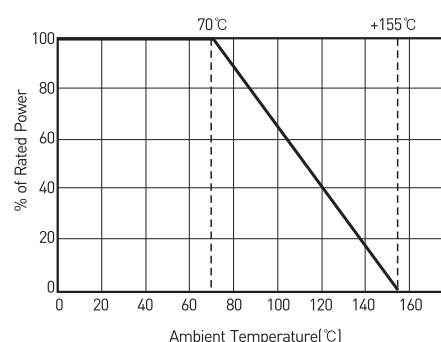


GENERAL SPECIFICATIONS

Model	Power Rating	Operating Temperature Range	Resistance Tolerance (%)	Resistance Range[Ω]	TCR[ppm/°C]	
CS01 (0201)	1/20W	-55℃ ~ +155℃	F [±1] G [±2] J [±5]	100m ~ 149m	±1000	
				150m ~ 500m	±600	
				501m ~ 1000m	±300	
CS02 (0402)	1/16W			50m ~ 100m	±400	
				101m ~ 500m	±300	
				501m ~ 1000m	±200	
CS03 (0603)	1/10W			20m ~ 50m	±600	
				51m ~ 100m	±400	
				101m ~ 500m	±300	
				501m ~ 1000m	±200	
CS05 (0805)	1/8W			20m ~ 50m	±600	
				51m ~ 100m	±400	
				101m ~ 500m	±300	
CS06 (1206)	1/4W			501m ~ 1000m	±200	
CS13 (1210)	1/2W			10m ~ 20m	±600	
CS10 (2010)	3/4W			21m ~ 50m	±400	
CS12 (2512)	1W			51m ~ 99m	±300	
				100m ~ 1000m	±200	
				3m ~ 5m	±300	
CS25 (1225)	3W			6m ~ 20m	±200	
				21m ~ 30m	±150	
				31m ~ 8000m	±100	
				10m ~ 19m	±300	
CS37 (3720)	1W			20m ~ 500m	±150	
				G [±2], J [±5]	1m ~ 4m	±300
CS75 (7520)	2W			F [±1], G [±2], J [±5]	5m ~ 10m	±200
					11m ~ 350m	±150

HIGH POWER RATING SPECIFICATIONS AND DERATING CURVE

Model	Power Rating	Resistance Range[Ω] $\pm 1\%$, $\pm 2\%$, $\pm 5\%$	TCR[ppm/°C]
CS02 (0402)	1/8W	51m ~ 100m	± 400
CS03 (0603)	1/8W, 1/5W	101m ~ 500m	± 300
CS05 (0805)	1/4W	501m ~ 1000m	± 200
CS06 (1206)	1/2W	10m ~ 20m 21m ~ 50m 51m ~ 99m 100m ~ 1000m	± 600
CS13 (1210)	3/4W		± 400
CS10 (2010)	1W		± 300
CS12 (2512)	1.5W		± 200
CS12 (2512)	2W		± 200



CHARACTERISTICS

Values in [] mean change in Ω after test

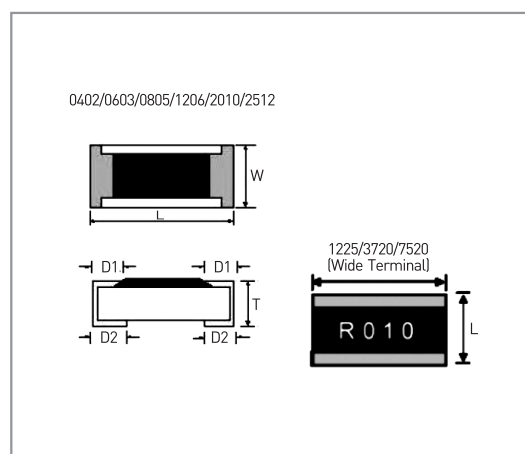
Temp. Coefficient of Resistance	As Spec.	-55°C~125°C, 25°C is the reference temperature
Short Time Overload	$\pm[1.0\%+0.05\Omega]$ for high power rating	RCWV*2.5 or maximum Overload Voltage, 5seconds
Dielectric Withstanding Voltage	No breakdown or flashover	1.42 times RCWV(RMS) for 1minute
Insulation Resistance	$\geq 10G\Omega$	Maximum Overload voltage for 1minute
Thermal Shock	$\pm[0.5\%+0.05\Omega]$	-55°C~155°C, 5cycles
Load Life	$\pm[1.0\%+0.05\Omega]$	RCWV, 70 $\pm$ 2°C 1.5hours on, 0.5hours off for 1000~1048hours
Humidity(Steady State)	$\pm[0.5\%+0.05\Omega]$	40 $\pm$ 2°C, 90~95%RH, RCWV 1.5hours on, 0.5hours off for 1000~1048hours
Resistance to Dry Heat	$\pm[0.5\%+0.05\Omega]$	at +155°C for 1000hours without load
Bending Strength	As Spec.	Bending once for 5seconds, 2010, 2512 size: 2mm, other size: 3mm
Solderability	95% coverage minimum	245 $\pm$ 5°C, 3seconds
Resistance to Soldering Heat	$\pm[0.5\%+0.05\Omega]$	260 $\pm$ 5°C, 10 $\pm$ 1seconds

* Storage Temperature: 25 $\pm$ 3°C; Humidity < 80% RH

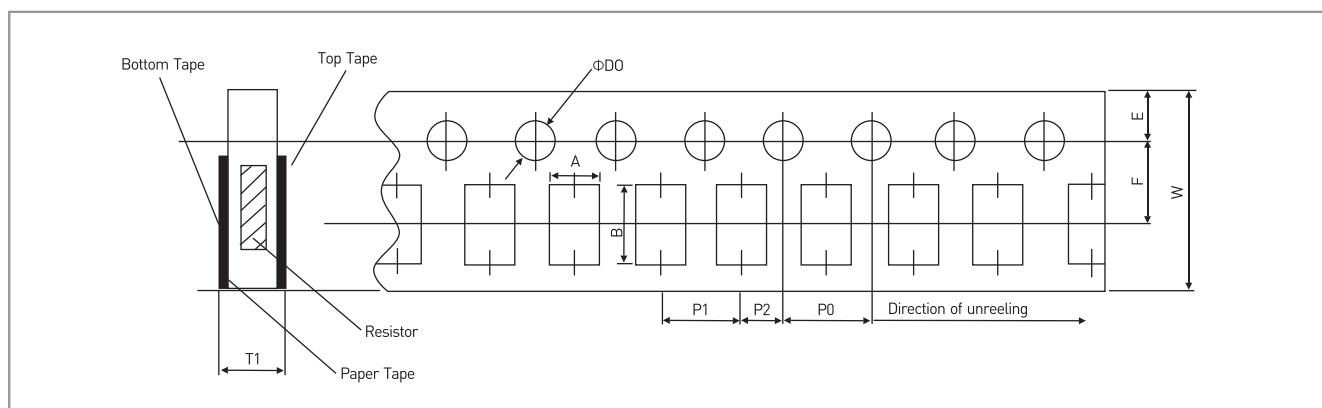
* Reference Standards: IEC60115-1, 60068-2-58, JIS-C 5201-1

DIMENSIONS [mm]

Model	Dimensions [mm]				
	L	W	T	D1	D2
CS01	0.60 $\pm$ 0.03	0.30 $\pm$ 0.03	0.23 $\pm$ 0.05	0.12 $\pm$ 0.05	0.15 $\pm$ 0.05
CS02	1.00 $\pm$ 0.05	0.50 $\pm$ 0.05	0.32 $\pm$ 0.10	0.25 $\pm$ 0.10	0.20 $\pm$ 0.10
CS03	1.60 $\pm$ 0.10	0.80 $\pm$ 0.10	0.45 $\pm$ 0.10	0.30 $\pm$ 0.20	0.30 $\pm$ 0.20
CS05	2.00 $\pm$ 1.15	1.25 $\pm$ 0.15	0.55 $\pm$ 0.10	0.30 $\pm$ 0.20	0.40 $\pm$ 0.25
CS06	3.10 $\pm$ 0.15	1.55 $\pm$ 0.15	0.55 $\pm$ 0.10	0.50 $\pm$ 0.30	0.40 $\pm$ 0.25
CS13	3.10 $\pm$ 0.10	2.60 $\pm$ 0.15	0.55 $\pm$ 0.10	0.50 $\pm$ 0.30	0.50 $\pm$ 0.25
CS10	5.00 $\pm$ 0.20	2.50 $\pm$ 0.15	0.60 $\pm$ 0.15	0.60 $\pm$ 0.30	0.50 $\pm$ 0.25
CS12	6.35 $\pm$ 0.20	3.10 $\pm$ 0.15	0.60 $\pm$ 0.10	0.60 $\pm$ 0.30	0.55 $\pm$ 0.25
CS25	3.10 $\pm$ 0.15	6.30 $\pm$ 0.15	0.90 $\pm$ 0.15	0.60 $\pm$ 0.30	0.80 $\pm$ 0.25
CS37	2.00 $\pm$ 0.20	3.75 $\pm$ 0.20	0.60 $\pm$ 0.10	0.40 $\pm$ 0.20	0.40 $\pm$ 0.20
CS75	2.00 $\pm$ 0.20	7.50 $\pm$ 0.30	0.60 $\pm$ 0.10	0.40 $\pm$ 0.20	0.40 $\pm$ 0.20

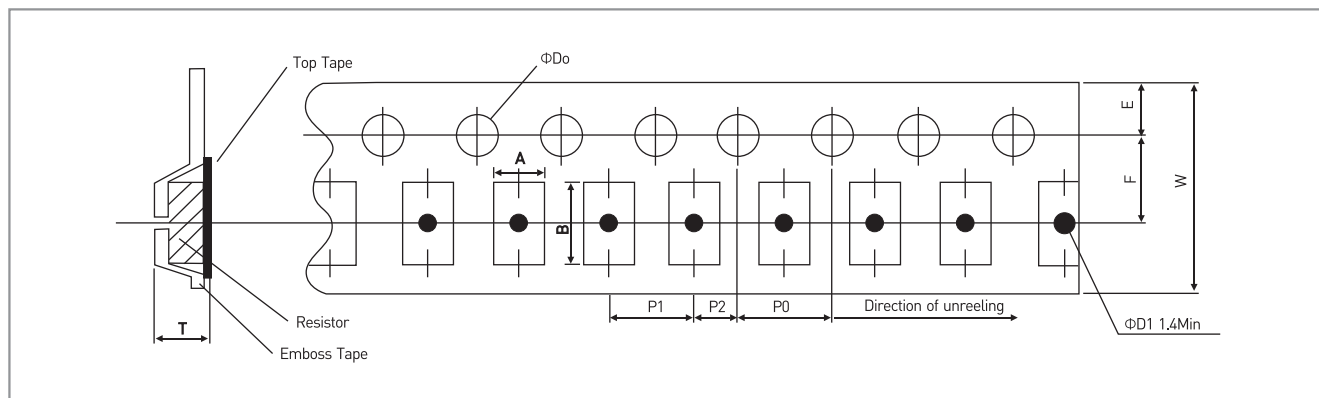


PAPER TAPE SPECIFICATIONS



Model	Dimensions [mm]									
	A	B	W	E	F	P0	P1	P2	ΦD0	T
CS01	0.38±0.05	0.68±0.05	8.00±0.2	1.75±0.1	3.5±0.05	4.00±0.1	2.00±0.05	2.00±0.05	1.50± ^{0.1} _{0.0}	0.42±0.2
CS02	0.65±0.1	1.15±0.1					0.45±0.1			
CS03	1.10±0.1	1.90±0.1					0.70±0.1			
CS05	1.60±0.1	2.40±0.2					0.85±0.1			
CS06	1.90±0.1	3.50±0.2								
CS13	2.90±0.1	3.50±0.2								

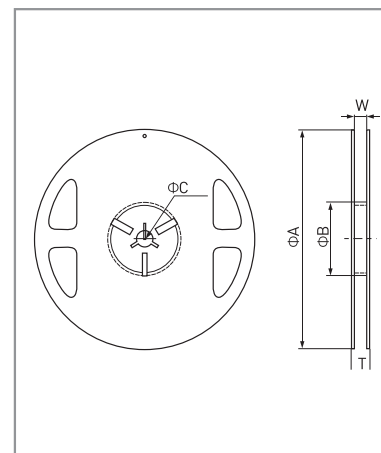
EMBOSS PLASTIC TAPE SPECIFICATIONS



Model	Dimensions [mm]									
	A	B	W	E	F	P0	P1	P2	ΦD0	T
CS10	2.80±0.10	5.50±0.10	12.0±0.10		5.5±0.05	4.0±0.05			1.50+0.10	1.00±0.20
CS12	3.40±0.10	6.70±0.10	12.0±0.10		5.5±0.05	4.0±0.05			1.50+0.10	1.00±0.20
CS25	3.38±0.10	6.68±0.10	12.0±0.30	1.75±0.10	5.5±0.10	4.0±0.10	4.0±0.10	2.0±0.05	1.55+0.05	1.45±0.20
CS37	2.50±0.20	4.45±0.20	12.0±0.30		5.5±0.05	4.0±0.05			1.50+0.10	1.20±0.20
CS75	2.50±0.20	8.30±0.20	16.0±0.30		7.8±0.05	4.0±0.05			1.50+0.10	1.20±0.20

REEL SPECIFICATIONS

Model	Dimensions [mm]					Paper Tape [pcs]	Emboss Plastic Tape [pcs]
	ΦA	ΦB	ΦC	W	T		
CS01	178±1	60.0±1.0	13.5±0.7	9.5±0.50	11.5±1.0	10,000	-
CS02	178±1	60.0±1.0	13.5±0.7	9.5±0.50	11.5±1.0	10,000	-
CS03	178±1	60.0±1.0	13.5±0.7	9.5±0.50	11.5±1.0	5,000	-
CS05	178±1	60.0±1.0	13.5±0.7	9.5±0.50	11.5±1.0	5,000	-
CS06	178±1	60.0±1.0	13.5±0.7	9.5±0.50	11.5±1.0	5,000	-
CS13	178±1	60.0±1.0	13.5±0.7	9.5±0.50	11.5±1.0	5,000	-
CS10	178±1	60.0±1.0	13.5±0.7	13.5±1.50	15.5±1.0	-	4,000
CS12	178±1	60.0±1.0	13.5±0.7	13.5±1.50	15.5±1.0	-	4,000
CS25	178±1	60.0±1.0	13.5±0.7	13.5±1.50	15.5±1.0	-	2,000
CS37	178±1	60.0±1.0	13.5±0.7	13.5±1.50	15.5±1.0	-	2,000
CS75	178±1	60.0±1.0	13.5±0.7	17.5±1.50	19.5±1.0	-	2,000



ORDERING PROCEDURE EXAMPLE

