

高阻值厚膜貼片電阻

HCR Series

Resistance Range: 10.1M ~ 100M ohm

High Ohm Thick Film Chip Resistor

Application

- ◆ Entertainment: Stereo, TV tuners, Tape recorder.
- ◆ Appliance: Air conditioner, Refrigerator
- ◆ Computer & relative products: Main board, PDA.
- ◆ Communication equipment: Cell phone, Fax machine
- ◆ Power equipment: Power supply, Illumination equipment.
- ◆ Measuring instrument: Electric meter, Navigation equipment.
- ◆ Entertainment: stereo, TV tuners, tape recorder
- ◆ Appliance: Air conditioner, refrigerator
- ◆ Computer & relative products: Mainboard, PDA
- ◆ Communication equipment: cell phone, Fax machine
- ◆ Power equipment: power supply, illumination equipment
- ◆ Measuring instrument: Electric meter, Navigation equipment

FEATURE

- ◆ Small size and light weight.
- ◆ Reduction of assembly costs matching with placement machines
- ◆ Reliability high quality and fast delivery
- ◆ Small size and light weight
- ◆ Reduction of assembly costs and matching with placement machines:
- ◆ Reliability, High quality and Fast Delivery
- ◆ Smaller Size of 0201 Available .
- ◆ High Power: 1Watt (1812), 2Watt (1218), 3Watt (2030).
- ◆ Resistance Range: 10M1 Ω ~ 100M Ω

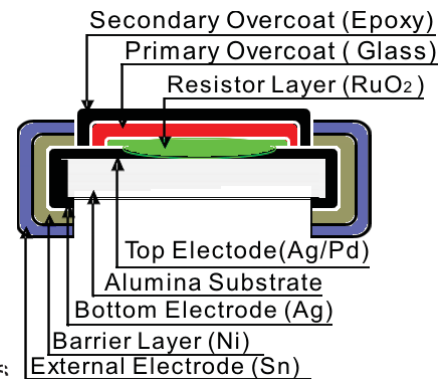
ORDERING INFORMATION



Example: HCR05JF1005

FIGURE



CONSTRUCTION



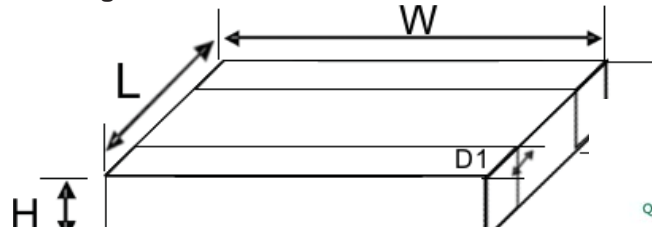
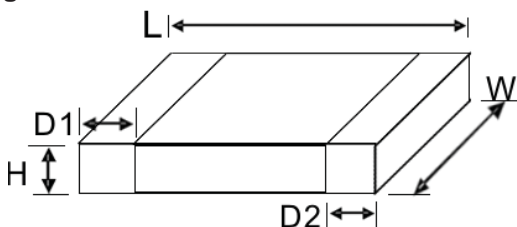
Power	Size	Type	Tolerance	TCR(°C)	Resistance	Packing	  品質承諾標誌 QUALITY COMMITMENT
1/16W	0402	HCR02	J = ±5%	E=±100ppm	IEC: E24	10K Reel	
1/10W	0603	HCR03	H = ±3%	K=±150ppm	1M=105	5K Reel	
1/8W	0805	HCR05	G = ±2%	F=±200ppm	10M=106	5K Reel	
1/4W	1206	HCR06	F = ±1%	G=±300ppm	100M=107	5K Reel	
1/3W	1210	HCR10			IEC: E96	5K Reel	
1/2W	1812	HCR18			1M=1004	4K Reel	
	2010	HCR20			10M=1005	4K Reel	
1W	2512	HCR25			100M=1006	4K Reel	
	1218	HCR28				4K Reel	
2W	2030	HCR30				2K Reel	

DIMENSION

Power	Size	Type	L	W	H	D1	D2	Fig.
1/16W	0402	HCR02	1.0±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10	Fig-1
1/10W	0603	HCR03	1.6±0.15	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20	
1/8W	0805	HCR05	2.0±0.15	1.25±0.10	0.50±0.10	0.35±0.20	0.40±0.20	
1/4W	1206	HCR06	3.1±0.10	1.55±0.10	0.55±0.10	0.45±0.20	0.40±0.20	
1/3W	1210	HCR10	3.1±0.10	2.55±0.10	0.55±0.10	0.50±0.20	0.50±0.20	
1/2W	1812	HCR18	4.50 ±0.20	3.00 ±0.20	0.55 ±0.10	0.45±0.20	0.40±0.20	
1/2W	2010	HCR20	5.0±0.20	2.50±0.20	0.55±0.10	0.60±0.20	0.50±0.20	
1W	2512	HCR25	6.3±0.20	3.20±0.20	0.55±0.10	0.60±0.20	0.50±0.20	Fig-2
1W	1218	HCR28	3.1±0.10	4.60±0.20	0.55±0.10	0.45±0.20	0.40±0.20	
2W	2030	HCR30	5.2±0.20	7.60±0.20	0.76±0.10	0.80±0.20	0.80±0.20	

Fig-1

Fig-2



高阻值厚膜貼片電阻

HCR Series

Resistance Range: 10.1M ~ 100M ohm

High Ohm Thick Film Chip Resistor

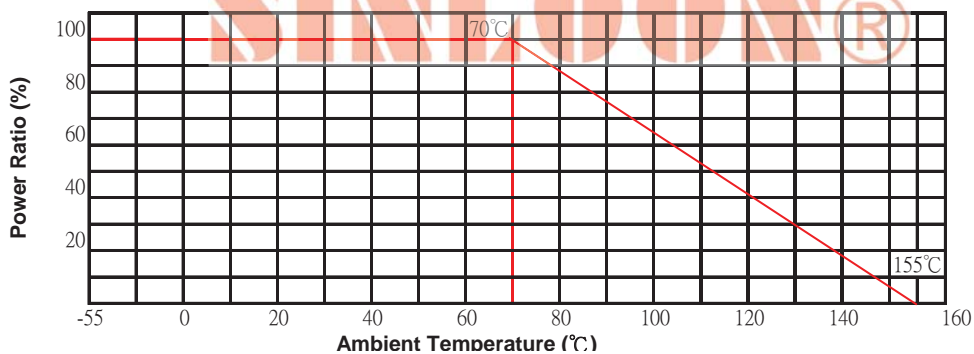
□ GENERAL ELECTRICAL SPECIFICATION

Type	Size	Rated Power at 70°C	Maximum Voltage		Resistance (Ω)	Tolerance Range	Publication IEC	T.C.R. (ppm/°C)	Operating Temp. Range
			Working	Overload					
0.063W	0402	HCR02	50V	100V	10.1M~54M	±1%	E96	±200	-55°C ~ +155°C
					10.1M~100M	±5%	E24	±200	
0.1W	0603	HCR03	50V	100V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.125W	0805	HCR05	150V	300V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.25W	1206	HCR06	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.33W	1210	HCR10	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.5W	1812	HCR18	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.5W	2010	HCR20	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
1W	2512	HCR25	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
1W	1218	HCR28	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
2W	2030	HCR30	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	

□ HIGH POWER ELECTRICAL SPECIFICATION

Type	Size	Rated Power at 70°C	Maximum Voltage		Resistance (Ω)	Tolerance Range	Publication IEC	T.C.R. (ppm/°C)	Operating Temp. Range
			Working	Overload					
0.125W	0603	HCR03	50V	100V	10.1M~54M	±1%	E96	±200	-55°C ~ +155°C
					10.1M~100M	±5%	E24	±200	
0.25W	0805	HCR05	150V	300V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.33W	1206	HCR06	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.5W	1210	HCR10	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
0.5W	1812	HCR18	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
1W	2010	HCR20	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
2W	2512	HCR25	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
2W	1218	HCR28	200V	400V	10.1M~54M	±1%	E96	±200	
					10.1M~100M	±5%	E24	±200	
3W	2030	HCR30	200V	400V	10.1M~100M	±5%	E24	±200	

◆ POWER DERATING CURVE



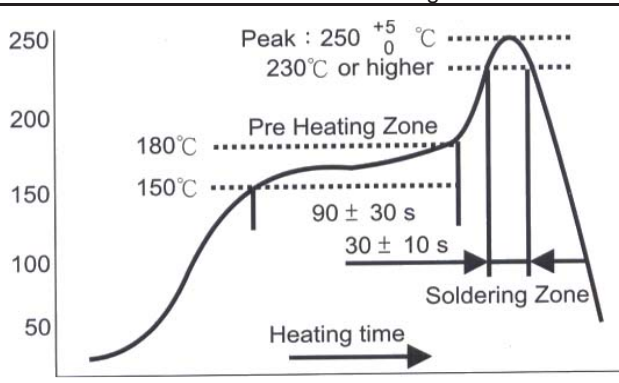
高阻值厚膜貼片電阻

HCR Series

Resistance Range: 10.1M ~ 100M ohm

Hihg Ohm Thick Film Chip Resistor

Test Procedures and Requirements

Test Item	Procedue	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R)	-55°C ~ +155°C, 20°C is the reference temperature	Refer to Rating	JIS C 5201-1 clause 4.8
Short Time Overload	General: 2.5 time RCWV or Max. Overload voltage for 5 seconds. Hifh Power: 2.5 times RCWV of Mac. Overload voltage for 2 seconds.	±1=±(1.0% +0.05Ω) ±5=±(2.0% +0.1Ω)	JIS C 5201-1 clause 4.13
IR Reflow	 <p>The graph shows a temperature profile for IR reflow. The y-axis is temperature in °C (50 to 250) and the x-axis is heating time. Key points include: Pre Heating Zone (150°C to 180°C), a peak of 250 ± 5 °C (230°C or higher), and a Soldering Zone (30 ± 10 s) at the peak. Heating time is indicated by an arrow.</p>	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	SONY SS-00254
Leaching	260±5°C for 30 seconds	>95% Coverge	SONY SS-00254-9
Soldering Heat	260±5°C for 10 seconds	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	JIS C 5201-2 clause 4.18
Temperature Cycling	-55°C to +155°C 5 cycles	0.10%,0.50%,1% : ±(0.1%+0.05Ω) 2%,5%: ±(0.1%+0.01Ω)	JIS C 5201-2 clause 4.19
Electric Iron	Preheating temperature : 350±5°C Electric iron preheating time: 3+1/-0 second	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	SONY SS-00254-5
Resistance Solcent	The tested resistor be immersed into isproply alcohol of 20 ~ 25°C for 60 secs. Then the resistor is left in the room for 48 hours.	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	JIS C 5201-1 clause 4.29
Load life in Humidity	40±2°C, 90-95% R.H. or Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"	0.10%,0.50%,1% : ±(0.1%+0.05Ω) 2%,5%: ±(2%+0.05Ω)	JIS C 5201-1 clause 4.24
Load life (Endurance)	70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"	0.10%,0.50%,1% : ±(0.1%+0.05Ω) 2%,5%: ±(2%+0.05Ω)	JIS C 5201-1 clause 4.24
Insulation Resistance	Max. Overload voltage for 1 mimute	≥ 10G Ω	JIS C 5201-1 clause 4.6

* In case resistors operating ambient temperature in excess of the temperature range -55°C ~+155°C power ratio will be derated in accordance with the figure as shown on the right.

VOLTAGE RATING OR CURRENT RATING

Resistance Range: ≥ 1Ω

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as following:

$E = \sqrt{R \times P}$ $E = \text{Rated voltage}(V)$ $E = \sqrt{R \times P}$ $P = \text{Power rating}(W)$ $R = \text{Nominal resistance}(\Omega)$



高阻值厚膜貼片電阻

HCR Series

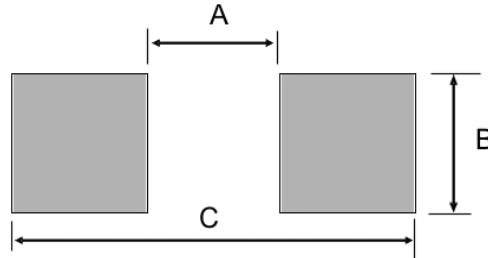
Resistance Range: 10.1M ~ 100M ohm

High Ohm Thick Film Chip Resistor

RECOMMEND LAND PATTERN DESIGN (For Reflow Soldering)

Unit: mm

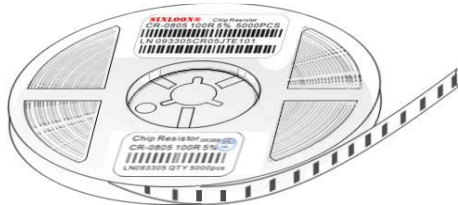
Type	HCR01	HCR02	HCR03	HCR05	HCR06	HCR10	HCR12	HCR20	HCR28	HCR25	HCR30
Dim.	0201	0402	0603	0805	1206	1210	1812	2010	1218	2512	2030
A	0.25	0.60	0.80	1.30	2.20	2.00	3.11	3.80	2.04	4.90	3.50
B	0.32	0.70	1.00	1.40	1.70	2.70	3.00	2.70	4.50	3.40	7.80
C	1.10	1.60	2.40	2.90	4.20	4.40	5.91	6.60	4.24	8.10	7.50



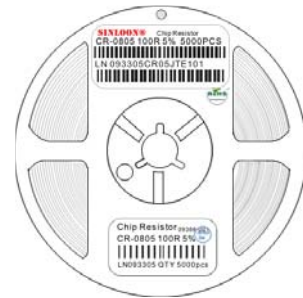
PACKAGE SPECIFICATION

Power	Size	Type	Quantity(ea)			SINLOON® RoHS Compliant 品質承諾標誌 QUALITY COMMITMENT
			Paper Reel Tape	In Box	Carton	
1/20W	0201	HCR01	10,000 Pcs 7" Reel	100K pcs	600K pcs	
1/16W	0402	HCR02	10,000 Pcs 7" Reel	100K pcs	600K pcs	
1/10W	0603	HCR03	5,000 Pcs 7" Reel	50K pcs	300K pcs	
1/8W	0805	HCR05	5,000 Pcs 7" Reel	50K pcs	300K pcs	
1/4W	1206	HCR06	5,000 Pcs 7" Reel	50K pcs	300K pcs	
1/3W	1210	HCR10	5,000 Pcs 7" Reel	40K pcs	300K pcs	
	1812	HCR18	5,000 Pcs 7" Reel	40K pcs	300K pcs	
1/2W	2010	HCR20	5,000 Pcs 7" Reel	40K pcs	300K pcs	
	2512	HCR25	4,000 Pcs 7" Reel	40K pcs	240K pcs	
1W	1218	HCR28	4,000 Pcs 7" Reel	40K pcs	240K pcs	
	2030	HCR30	2,000 Pcs 7" Reel	20K pcs	120K pcs	

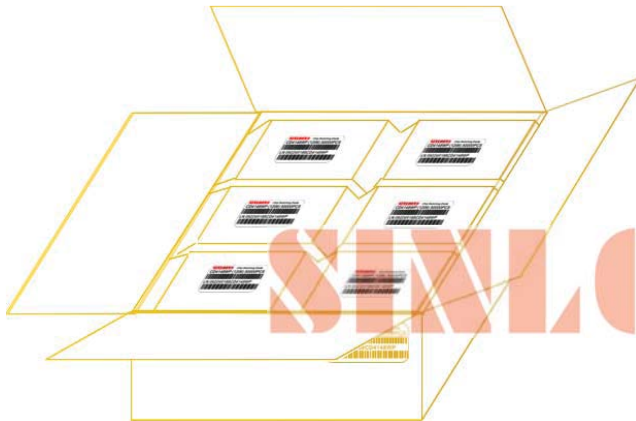
Paper Reel Tape



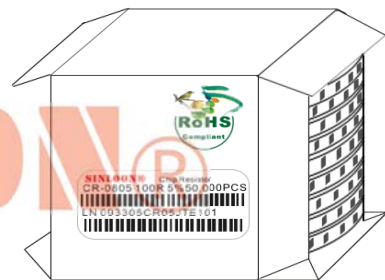
Reel Tape Label



Carton Pack



In Box



※ 美隆電子產品規格特性參數的改變或更新,將不會另行通知。
 ※ Mayloon characteristic parameters of electronic product specification changes or updates without prior notice

