

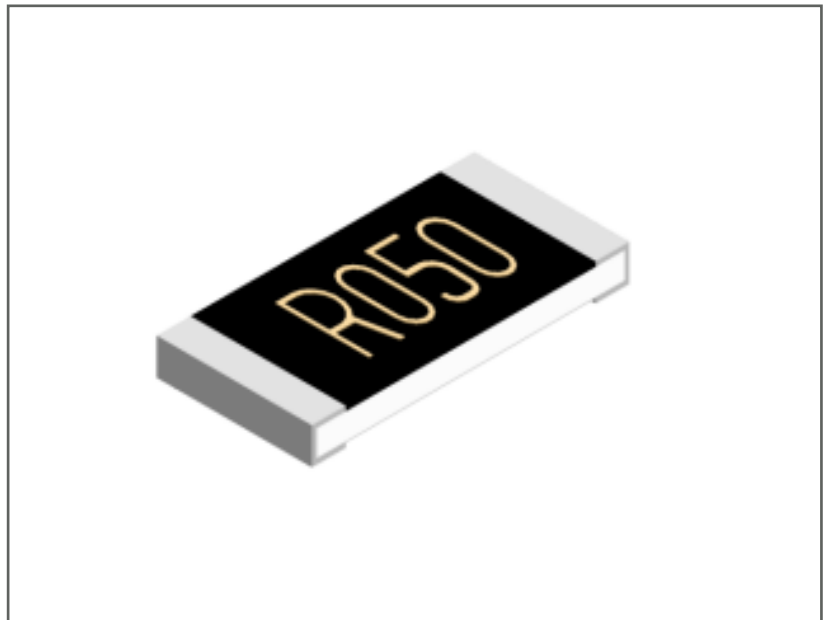
Features

- RSPCS – Thin Film Current Sensing Chip Resistors
- RSPCS – 0603, 0805, 1206, 2010, 2512 packages
- Tight tolerance down to $\pm 0.5\%$
- Extremely low TCR down to ± 50 PPM/ $^{\circ}\text{C}$
- Resistance values from 50m to 1ohm
- High purity alumina substrate for high power dissipation

RS PRO Thin Film Current Sensing Resistors RSPCS Series

RS Stock No.:

241-4900, 241-4901, 241-4901P, 241-4902, 241-4903, 241-4903P, 241-4904, 241-4905, 241-4905P, 241-4907, 241-4908, 241-4908P, 241-4909, 241-4910, 241-4910P, 241-4911, 241-4913, 241-4913P, 241-4914, 241-4915, 241-4915P, 241-4916, 241-4917, 241-4917P, 241-4918, 241-4919, 241-4919P, 241-4920, 241-4921, 241-4921P, 241-4922, 241-4923, 241-4923P, 241-4924, 241-4925, 241-4925P, 241-4926, 241-4927, 241-4927P, 241-4929, 241-4930, 241-4930P, 241-4931, 241-4932, 241-4932P, 241-4933, 241-4935, 241-4935P, 241-4936, 241-4937, 241-4937P, 241-4938, 241-4939, 241-4939P, 241-4941, 241-4942, 241-4942P, 241-4943, 241-4944, 241-4944P, 241-4945, 241-4946, 241-4946P, 241-4947, 241-4948, 241-4948P, 241-4949, 241-4950, 241-4950P, 241-4951, 241-4952, 241-4952P, 241-4953, 241-4954, 241-4954P, 241-4955, 241-4957, 241-4957P, 241-4958, 241-4959, 241-4959P, 241-4960, 241-4961, 241-4961P, 241-4963, 241-4964, 241-4964P, 241-4965, 241-4966, 241-4966P, 241-4967, 241-4968, 241-4968P, 241-4969, 241-4970, 241-4970P



RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

Product Description

Applications Include:

- Power Management Applications
- Switching Power Supply
- Over Current Protection in Audio Applications
- Voltage Regulator Module (VRM)
- DC-DC Converter, Battery Pack, Charger, Adapter
- Automotive Engine Control
- Disk Driver
- Portable Devices

Dimensions

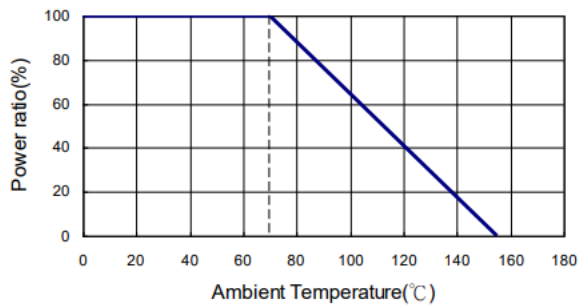
Type	RS Article	Size (Inch)	L	W	T	D1	D2	Weight (g) (1000pcs)
RSPCS03	2414900	0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.20	3.1
	2414902							
	2414901							
	2414903							
	2414901P							
	2414903P							
RSPCS05	2414904	0805	2.00±0.15	1.25±0.15	0.55±0.10	0.30±0.20	0.40±0.25	5.6
	2414905							
	2414905P							
	2414907							
	2414908							
	2414908P							
	2414909							
	2414910							
	2414910P							
	2414911							
2414913								
2414913P								
RSPCS06	2414914	1206	3.05±0.15	1.55±0.15	0.55±0.10	0.50±0.10	0.40±0.25	12.3
	2414915							
	2414915P							
	2414916							
	2414917							
	2414917P							
	2414918							
	2414919							
	2414919P							
	2414920							
	2414921							
	2414921P							
	2414922							
	2414923							
2414923P								
2414924								

	2414925 2414925P 2414926 2414927 2414927P 2414929 2414930 2414930P 2414931 2414932 2414932P							
RSPCS10	2414933 2414935 2414935P 2414936 2414937 2414937P 2414938 2414939 2414939P 2414941 2414942 2414942P 2414943 2414944 2414944P 2414945 2414946 2414946P 2414947 2414948 2414948P 2414949 2414950 2414950P 2414951 2414952 2414952P	2010	5.00±0.20	2.45±0.15	0.60±0.15	0.60±0.30	0.50±0.25	26.7
RSPCS12	2414953 2414954 2414954P 2414955 2414957 2414957P 2414958 2414959 2414959P 2414960 2414961 2414961P 2414963 2414964 2414964P 2414965 2414966 2414966P 2414967 2414968 2414968P 2414969 2414970 2414970P	2512	6.35±0.20	3.15±0.15	0.60±0.10	0.60±0.30	0.55±0.25	49.6

Part Number Make Up

Part Number	Package Dimensions	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance Ohmic value	Marking
RSPCS	03: 0603 05: 0805 06: 1206 10: 2010 12: 2512	D: ±0.5%	T: Taping Reel	D: ±50 E: ±100 F: ±200	: Standard R: 3W	R050: 0.05Ω R100: 0.1Ω 1R00: 1Ω	: Standard N: No Marking

Derating Curve



Electrical Specifications

Type	RS Article	Power Rating at 70°C	Operating Temp. Range	Resistance Range		TCR (PPM/°c)
				±0.5%	±0.1%	
RSPCS03 (0603)	2414900	1/32W	-55~ +155°C	200 - 300	301 - 1000	±100 ±50
	2414902					
	2414901					
	2414903					
	2414901P					
	2414903P					
RSPCS05 (0805)	2414904	1/8W	-55~ +155°C	200 - 300	301 - 1000	±100 ±50
	2414905					
	2414905P					
	2414907					
	2414908					
	2414908P					
	2414909					
	2414910					
	2414910P					
	2414911					
	2414913					
	2414913P					

RSPCS06 (1206)	2414914	1/4W	-55~ +155°C	50-100	±200 ±100 ±50
	2414915				
	2414915P				
	2414916				
	2414917				
	2414917P				
	2414918				
	2414919				
	2414919P				
	2414920				
	2414921				
	2414921P				
	2414922			101 - 300 301-1000	
	2414923				
	2414923P				
	2414924				
	2414925				
	2414925P				
	2414926				
	2414927				
	2414927P				
	2414929				
	2414930				
2414930P					
2414931					
2414932					
2414932P					
RSPCS10 (2010)	2414933	3/4W	-55~ +155°C	50-100 101-300 301-1000	±200 ±100 ±50
	2414935				
	2414935P				
	2414936				
	2414937				
	2414937P				
	2414938				
	2414939				
	2414939P				
	2414941				
	2414942				
	2414942P				
	2414943				
	2414944				
	2414944P				
	2414945				
	2414946				
	2414946P				
	2414947				
	2414948				
	2414948P				
	2414949				
	2414950				
2414950P					
2414951					
2414952					
2414952P					
RSPCS12 (2512)	2414953	1W	-55~ +155°C	50-100 101-300 301-1000	±200 ±100 ±50
	2414954				
	2414954P				
	2414955				
	2414957				
	2414957P				
	2414958				
2414959					
2414959P					

2414960				
2414961				
2414961P				
2414963				
2414964				
2414964P				
2414965				
2414966				
2414966P				
2414967				
2414968				
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2414969				
2414970				
2414970P				

Environmental Characteristics

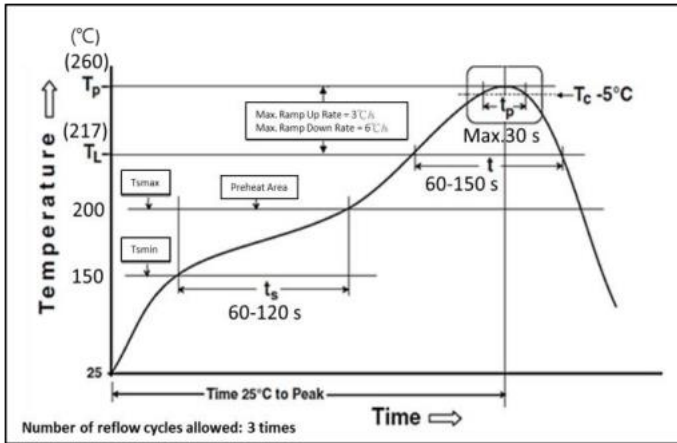
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	MIL-STD-202 Method 304 +25/-55/+25/+125/+25°C
Short Time Overload	±1%	JIS-C-5201-1 4.13 RCWV*2.5 or Max. overload voltage whichever is lower for 5 seconds
Insulation Resistance	>1000MΩ	MIL-STD-202 Method 302 Apply 100VDC for 1 minute
Endurance	±1%	MIL-STD-202 Method 108A 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±0.5%	MIL-STD-202 Method 103B 40±2°C, 90~95% R.H. RCWV for 1000 hrs with 1.5h hrs "ON" and 0.5 hrs "OFF"
Bending Strength	As Spec.	JIS-C-5201-1 4.33 Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage	MIL-STD-202 Method 208H 245±5°C for 3 seconds
Resistance to Soldering Heat	±0.5%	MIL-STD-202 Method 210E 260±5°C for 10 seconds
Dielectric Withstand Voltage	By Type	MIL-STD-202 Method 301 Apply max. overload voltage for 1 minute
Thermal Shock	±0.5%	MIL-STD-202 Method 107G -55°C ~ 150°C, 100 cycles
Low Temperature Operation	±0.5%	JIS-C-5201-1 4.36 1 hour, -65°C, followed by 45 minutes of RCWV

RCWV(Rated continuous working voltage)= $\sqrt{(P \cdot R)}$ or Max. Operating voltage whichever is lower

- Storage Temperature: 15~28°C; Humidity < 80%RH
- Shelf Life: 2 years from production date.

Soldering Condition

(IPC/JEDEC J-STD-020)

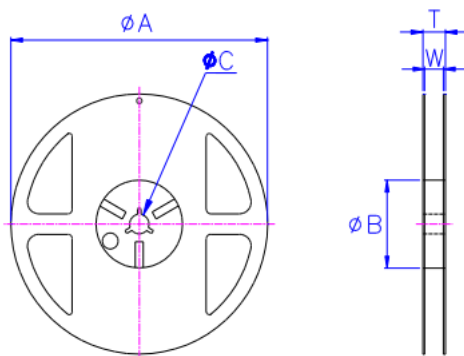


Packaging

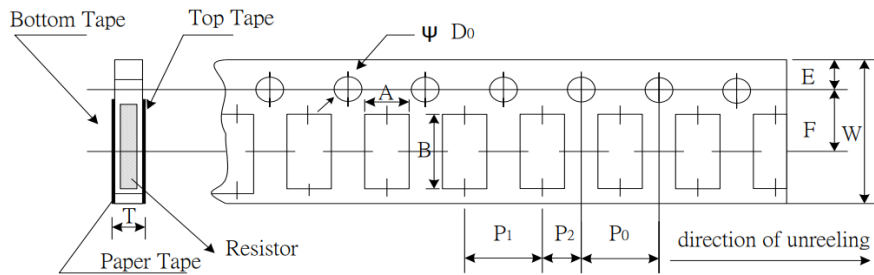
Packaging Quantity & Reel Specification

Unit:mm

Type	ØA	ØB	ØC	W	T	Paper Tape (EA)	Emboss Plastic Tape (EA)
RSPCS03	178.0±1.0	60.0±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
RSPCS05	178.0±1.0	60.0±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
RSPCS06	178.0±1.0	60.0±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
RSPCS10	178.0±1.0	60.0±1.0	13.5±0.7	13.5±1.0	15.5±1.0	-	4,000
RSPCS12	178.0±1.0	60.0±1.0	13.5±0.7	13.5±1.0	15.5±1.0	-	4,000

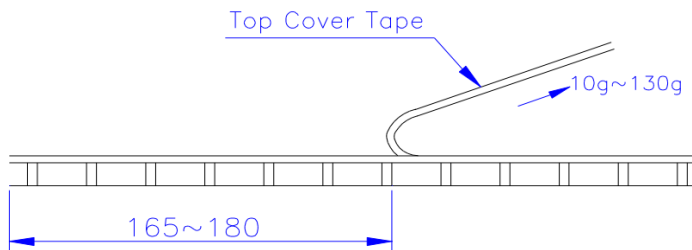


Paper Tape Specifications



Type	A	B	W	E	F	P0	P1	P2	ΦD0	T
RSPCS03	1.10±0.05	1.90±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.55±0.03	0.60±0.03
RSPCS05	1.60±0.05	2.37±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.55±0.05	0.75±0.05
RSPCS06	2.0±0.05	3.55±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.75±0.05

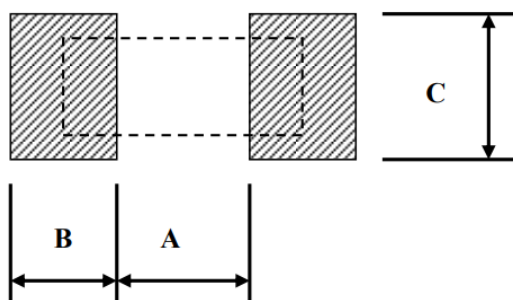
- Peel force top cover tape
- The peel speed shall be about 300mm/min±5%
- The peel force of top cover tape shall be between 10 to 100g



Recommended Land Pattern

Type	A	B	C
RSPCS03	0.80	1.00	0.90±0.2
RSPCS05	1.00	1.00	1.35±0.2
RSPCS06	2.00	1.15	1.70±0.2
RSPCS10	3.60	1.40	2.50±0.2
RSPCS12	4.90	1.60	3.10±0.2

Unit:mm



Similar Products

MPN	RS Article Number		
	SSM	MPQ	P Part
RSPCS03DTD1R00	2414901	2414900	2414901P
RSPCS03DTER200	2414903	2414902	2414903P
RSPCS05DTD1R00	2414905	2414904	2414905P
RSPCS05DTDR500	2414908	2414907	2414908P
RSPCS05DTER220	2414910	2414909	2414910P
RSPCS05DTER300	2414913	2414911	2414913P
RSPCS06DTD1R00	2414915	2414914	2414915P
RSPCS06DTDR330	2414917	2414916	2414917P
RSPCS06DTDR500	2414919	2414918	2414919P
RSPCS06DTER120	2414921	2414920	2414921P
RSPCS06DTER150	2414923	2414922	2414923P
RSPCS06DTER200	2414925	2414924	2414925P
RSPCS06DTER220	2414927	2414926	2414927P
RSPCS06FTFR050N	2414930	2414929	2414930P
RSPCS06FTFR100	2414932	2414931	2414932P
RSPCS10DTD1R00	2414935	2414933	2414935P
RSPCS10DTDR330	2414937	2414936	2414937P
RSPCS10DTDR500	2414939	2414938	2414939P
RSPCS10DTER120	2414942	2414941	2414942P
RSPCS10DTER150	2414944	2414943	2414944P
RSPCS10DTER200	2414946	2414945	2414946P
RSPCS10DTER220	2414948	2414947	2414948P
RSPCS10DTFR050N	2414950	2414949	2414950P
RSPCS10DTFR100	2414952	2414951	2414952P
RSPCS12DTER1R00	2414954	2414953	2414954P
RSPCS12DTERR100	2414957	2414955	2414957P
RSPCS12DTERR120	2414959	2414958	2414959P
RSPCS12DTERR150	2414961	2414960	2414961P
RSPCS12DTERR200	2414964	2414963	2414964P
RSPCS12DTERR220	2414966	2414965	2414966P
RSPCS12DTERR330	2414968	2414967	2414968P
RSPCS12DTERR500	2414970	2414969	2414970P