chanhvinh.com

RS PRO Thin Film Current Sensing Chip Resistors



FEATURES

- Thin film process
- High power rating up to 6 Watts in 2512 size
- Tight tolerance down to ±0.1%
- Extremely low TCR down to ±50 PPM/°C -

Resistance values from 50ohm to 1000ohm

- High purity alumina substrate for high power dissipation

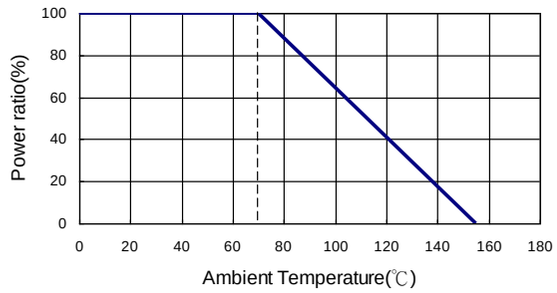
RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

chanhvinh.com

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 Driver
—Portable Devices (PDA, Cell Phone)

Derating Curve



Standard Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Resistance Range (Ω)		TCR (PPM/°C)
			±0.5%	±1%	
2430448, 2430449, 2430463, 2430464, 2430467, 2430468, 2430443, 2430444, 2430445, 2430446, 2430455, 2430456, 2430423, 2430424, 2430430, 2430432, 2430435, 2430436, 2430452, 2430454, 2430459, 2430460, 2430470, 2430471, 2430700, 2430701, 2430707, 2430708, 2430704, 2430705, 2430421, 2430422, 2430433, 2430434, 2430441, 2430442, 2430709, 2430710, 2430693, 2430694, 2430697, 2430698, 2430416, 2430417, 2430426, 2430427, 2430428, 2430429, 2430439, 2430440, 2430414, 2430415, 2430437, 2430438, 2430450, 2430451, 2430461, 2430462, 2430418, 2430420, 2430457, 2430458, 2430465, 2430466, 2430711, 2430713, 2430714, 2430715, 2430691, 2430692, 2430702, 2430703, 2430695, 2430696, 2430716, 2430717 (0402)	1/16W	-55~+155°C	500 - 1000		±100 ±50

2430477, 2430478, 2430482, 2430483, 2430474, 2430476,2430472, 2430473, 2430472, 2430473, 2430479, 2430480, 2430484, 2430485, 2430486, 2430487, 2430620, 2430621, 2430626, 2430628, 2430586, 2430587, 2430596, 2430597, 2430622, 2430623, 2430614, 2430615, 2430631, 2430632, 2430638, 2430639, 2430636, 2430637, 2430592, 2430593, 2430608, 2430609, 2430574, 2430575, 2430577, 2430578, 2430584, 2430585, 2430594, 2430595, 2430616, 2430617, 2430634, 2430635, 2430579, 2430580, 2430581, 2430583, 2430590, 2430591, 2430603, 2430604, 2430618, 2430619, 2430572, 2430573, 2430588, 2430589, 2430599, 2430600, 2430610, 2430611, 2430624, 2430625, 2430601, 2430602, 2430606, 2430607, 2430612, 2430613, 2430629, 2430630, 2430640, 2430641 (0603)	1/10W	-55~+155°C	200 - 300 301 - 1000	±100 ±50
2430488, 2430489, 2430496, 2430497, 2430508, 2430509, 2430492, 2430493, 2430500, 2430501, 2430498, 2430499, 2430504, 2430505, 2430506, 2430507, 2430490, 2430491, 2430494, 2430495, 2430502, 2430503, 2430667, 2430668, 2430678, 2430679, 2430682, 2430684, 2430665, 2430666, 2430644, 2430645, 2430653, 2430654, 2430656, 2430657, 2430675, 2430676, 2430687, 2430688, 2430689, 2430690, 2430646, 2430647, 2430651, 2430652, 2430658, 2430659, 2430663, 2430664, 2430671, 2430672, 2430642, 2430643, 2430660, 2430662, 2430669, 2430670, 2430673, 2430674, 2430680, 2430681, 2430685, 2430686, 2430648, 2430650 (0805)	1/8W		200 - 300 301 - 1000	±100 ±50
2430514, 2430515, 2430534, 2430535, 2430518, 2430519, 2430524, 2430525, 2430530, 2430531, 2430538, 2430539, 2430510, 2430511, 2430520, 2430521, 2430522, 2430523, 2430516, 2430517, 2430528, 2430529, 2430532, 2430533, 2430540, 2430541, 2430512, 2430513, 2430526, 2430527, 2430536, 2430537 (1206)	1/4W	-55~+155°C	- 50 - 100 101 - 300 301 – 1000	±200 ±100 ±50
2430404, 2430405, 2430408, 2430409, 2430394, 2430395, 2430412, 2430413, 2430397, 2430398, 2430410, 2430411, 2430392, 2430393, 2430399, 2430400, 2430406, 2430407, 2430401, 2430402 (2010)	3/4W	-55~+155°C	50 - 100 101 - 300 301 - 1000	±200 ±100 ±50
2430544, 2430545, 2430546, 2430547, 2430554, 2430555, 2430554, 2430555, 2430560, 2430561, 2430566, 2430567, 2430542, 2430543, 2430548, 2430549, 2430552, 2430553, 2430568, 2430569, 2430564, 2430565, 2430570, 2430571, 2430550, 2430551, 2430556, 2430557, 2430562, 2430563 (2512)	1W	-55~+155°C	50 - 100 101 - 300 301 - 1000	±200 ±100 ±50

Environmental Characteristics

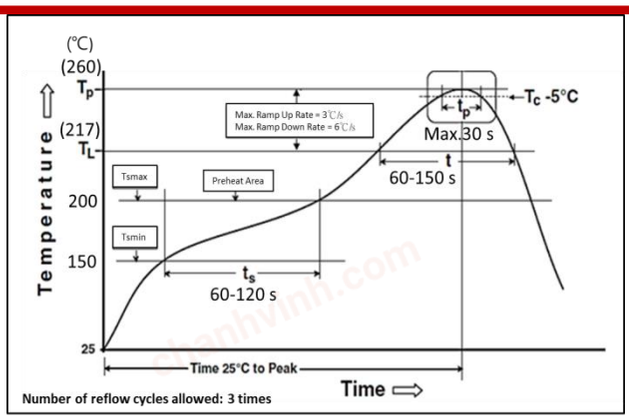
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	**MIL-STD-202 Method 304** +25/-55/+25/+125/+25°C
Short Time Overload	±1%	**JIS-C-5201-1 4.13** RCWV*2.5 or Max. overload voltage whichever is lower for 5seconds
Insulation Resistance	>1000MΩ	**MIL-STD-202 Method 302** Apply 100V_{DC} 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 1.5 hrs “ON” and 0.5 hrs “OFF”
Bending Strength	As Spec.	**JIS-C-5201-1 4.33** Bending amplitude 3mm 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 I 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*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

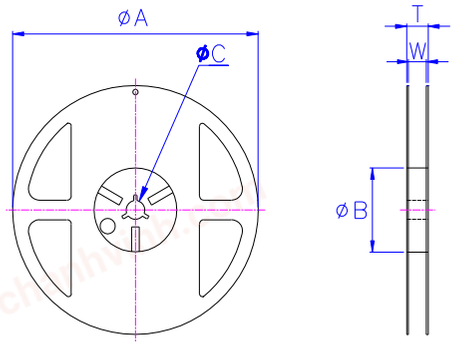
Type	nA	nB	nC	W	T	Paper Tape (EA)	Emboss Plastic Tape (EA)
2430448, 2430449, 2430463, 2430464, 2430467, 2430468, 2430443, 2430444, 2430445, 2430446, 2430455, 2430456, 2430423, 2430424, 2430430, 2430432, 2430435, 2430436, 2430452, 2430454, 2430459, 2430460, 2430470, 2430471, 2430700, 2430701, 2430707, 2430708, 2430704, 2430705, 2430421, 2430422, 2430433, 2430434, 2430441, 2430442, 2430709, 2430710, 2430693, 2430694, 2430697, 2430698, 2430416, 2430417, 2430426, 2430427, 2430428, 2430429, 2430439, 2430440, 2430414, 2430415, 2430437, 2430438, 2430450, 2430451, 2430461, 2430462, 2430418, 2430420, 2430457, 2430458, 2430465, 2430466, 2430711, 2430713, 2430714, 2430715, 2430691, 2430692, 2430702, 2430703, 2430695, 2430696, 2430716, 2430717	178.0±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5±1.0	10,000	
2430477, 2430478, 2430482, 2430483, 2430474, 2430476,2430472, 2430473, 2430472, 2430473, 2430479, 2430480, 2430484, 2430485, 2430486, 2430487, 2430620, 2430621, 2430626, 2430628,	178.0±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-

2430586, 2430587, 2430596, 2430597, 2430622, 2430623, 2430614, 2430615, 2430631, 2430632, 2430638, 2430639, 2430636, 2430637, 2430592, 2430593, 2430608, 2430609, 2430574, 2430575, 2430577, 2430578, 2430584, 2430585, 2430594, 2430595, 2430616, 2430617, 2430634, 2430635, 2430579, 2430580, 2430581, 2430583, 2430590, 2430591, 2430603, 2430604, 2430618, 2430619, 2430572, 2430573, 2430588, 2430589, 2430599, 2430600, 2430610, 2430611, 2430624, 2430625, 2430601, 2430602, 2430606, 2430607, 2430612, 2430613, 2430629, 2430630, 2430640, 2430641							
2430488, 2430489, 2430496, 2430497, 2430508, 2430509, 2430492, 2430493, 2430500, 2430501, 2430498, 2430499, 2430504, 2430505, 2430506, 2430507, 2430490, 2430491, 2430494, 2430495, 2430502, 2430503, 2430667, 2430668, 2430678, 2430679, 2430682, 2430684, 2430665, 2430666, 2430644, 2430645, 2430653, 2430654, 2430656, 2430657, 2430675, 2430676, 2430687, 2430688, 2430689, 2430690, 2430646, 2430647, 2430651, 2430652, 2430658, 2430659, 2430663, 2430664, 2430671, 2430672, 2430642, 2430643, 2430660, 2430662, 2430669, 2430670, 2430673, 2430674, 2430680, 2430681, 2430685, 2430686, 2430648, 2430650	178.0±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
2430514, 2430515, 2430534, 2430535, 2430518, 2430519, 2430524, 2430525, 2430530, 2430531, 2430538, 2430539, 2430510, 2430511, 2430520, 2430521, 2430522, 2430523, 2430516, 2430517, 2430528, 2430529, 2430532, 2430533, 2430540, 2430541, 2430512, 2430513, 2430526, 2430527, 2430536, 2430537	178.0±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-
2430404, 2430405, 2430408, 2430409, 2430394, 2430395,	178.0±1.0	60.0+1.0	13.5±0.7	13.5±1.00	15.5±1.0	-	4,000

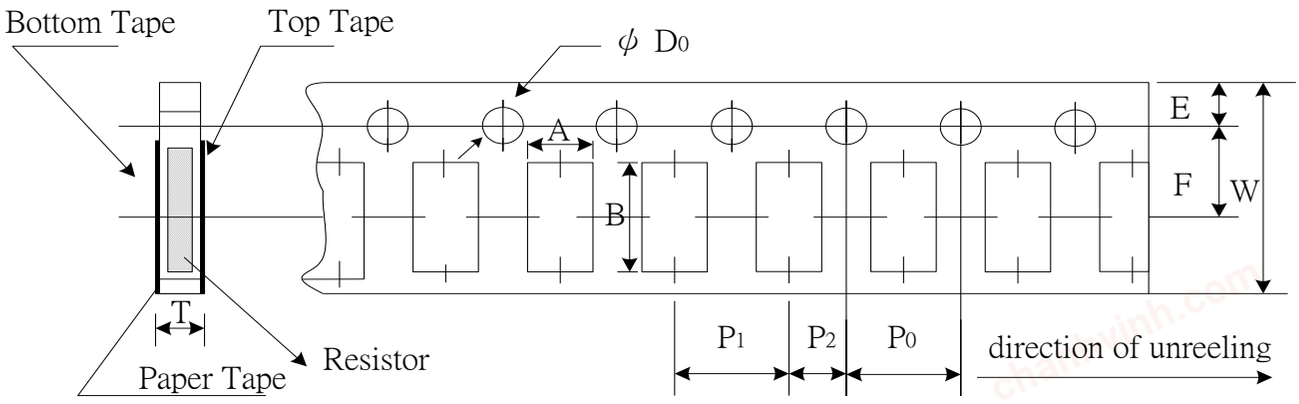
2430412, 2430413, 2430397, 2430398, 2430410, 2430411, 2430392, 2430393, 2430399, 2430400, 2430406, 2430407, 2430401, 2430402							
2430544, 2430545, 2430546, 2430547, 2430554, 2430555, 2430554, 2430555, 2430560, 2430561, 2430566, 2430567, 2430542, 2430543, 2430548, 2430549, 2430552, 2430553, 2430568, 2430569, 2430564, 2430565, 2430570, 2430571, 2430550, 2430551, 2430556, 2430557, 2430562, 2430563	178.0±1.0	60.0+1.0	13.5±0.7	13.5±1.00	15.5±1.0	-	4,000

Packaging Quantity & Reel Specifications

Unit :mm



Paper Tape Specifications

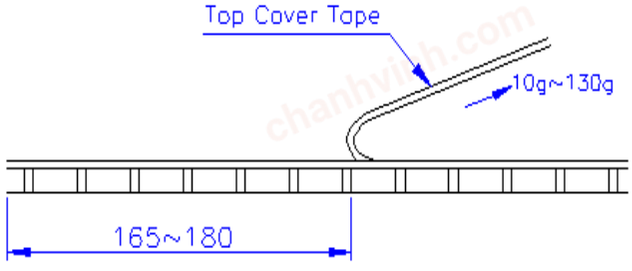


Type	A	B	W	E	F	P0	P1	P2	ψD0	T
2430448, 2430449, 2430463, 2430464, 2430467, 2430468,	0.70±0.05	1.16±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.55±0.05	0.40±0.03

2430443, 2430444, 2430445, 2430446, 2430455, 2430456, 2430423, 2430424, 2430430, 2430432, 2430435, 2430436, 2430452, 2430454, 2430459, 2430460, 2430470, 2430471, 2430700, 2430701, 2430707, 2430708, 2430704, 2430705, 2430421, 2430422, 2430433, 2430434, 2430441, 2430442, 2430709, 2430710, 2430693, 2430694, 2430697, 2430698, 2430416, 2430417, 2430426, 2430427, 2430428, 2430429, 2430439, 2430440, 2430414, 2430415, 2430437, 2430438, 2430450, 2430451, 2430461, 2430462, 2430418, 2430420, 2430457, 2430458, 2430465, 2430466, 2430711, 2430713, 2430714, 2430715, 2430691, 2430692, 2430702, 2430703, 2430695, 2430696, 2430716, 2430717										
2430477, 2430478, 2430482, 2430483, 2430474, 2430476,2430472, 2430473, 2430472, 2430473, 2430479, 2430480, 2430484, 2430485, 2430486, 2430487, 2430620, 2430621, 2430626, 2430628, 2430586, 2430587, 2430596, 2430597, 2430622, 2430623, 2430614, 2430615, 2430631, 2430632, 2430638, 2430639, 2430636, 2430637, 2430592, 2430593, 2430608, 2430609, 2430574, 2430575, 2430577, 2430578, 2430584, 2430585, 2430594, 2430595, 2430616, 2430617, 2430634, 2430635, 2430579, 2430580, 2430581, 2430583, 2430590, 2430591, 2430603, 2430604, 2430618, 2430619, 2430572, 2430573, 2430588, 2430589, 2430599, 2430600, 2430610, 2430611, 2430624, 2430625, 2430601, 2430602, 2430606, 2430607, 2430612, 2430613, 2430629, 2430630, 2430640, 2430641	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±0.10	2.00±0.05	1.55±0.05	0.60±0.03
2430488, 2430489, 2430496, 2430497, 2430508, 2430509, 2430492, 2430493, 2430500, 2430501, 2430498, 2430499, 2430504, 2430505, 2430506,	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±0.10	2.00±0.05	1.55±0.05	0.75±0.05

2430507, 2430490, 2430491, 2430494, 2430495, 2430502, 2430503, 2430667, 2430668, 2430678, 2430679, 2430682, 2430684, 2430665, 2430666, 2430644, 2430645, 2430653, 2430654, 2430656, 2430657, 2430675, 2430676, 2430687, 2430688, 2430689, 2430690, 2430646, 2430647, 2430651, 2430652, 2430658, 2430659, 2430663, 2430664, 2430671, 2430672, 2430642, 2430643, 2430660, 2430662, 2430669, 2430670, 2430673, 2430674, 2430680, 2430681, 2430685, 2430686, 2430648, 2430650										
2430514, 2430515, 2430534, 2430535, 2430518, 2430519, 2430524, 2430525, 2430530, 2430531, 2430538, 2430539, 2430510, 2430511, 2430520, 2430521, 2430522, 2430523, 2430516, 2430517, 2430528, 2430529, 2430532, 2430533, 2430540, 2430541, 2430512, 2430513, 2430526, 2430527, 2430536, 2430537	2.00±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

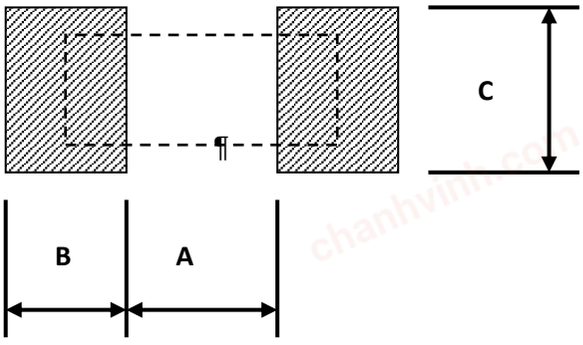
- Peel force of top cover tape
- The peel speed shall be about 300mm/min±5%
- The peel force of top cover tape shall be between 10 to 100g



Recommend Land Pattern

Thin Film Chip Resistors

Type	A	B	C
2430448, 2430449, 2430463, 2430464, 2430467, 2430468, 2430443, 2430444, 2430445, 2430446, 2430455, 2430456, 2430423, 2430424, 2430430, 2430432, 2430435, 2430436, 2430452, 2430454, 2430459, 2430460, 2430470, 2430471, 2430700, 2430701, 2430707, 2430708, 2430704, 2430705, 2430421, 2430422, 2430433, 2430434, 2430441, 2430442, 2430709, 2430710, 2430693, 2430694, 2430697, 2430698, 2430416, 2430417, 2430426, 2430427, 2430428, 2430429, 2430439, 2430440, 2430414, 2430415, 2430437, 2430438, 2430450, 2430451, 2430461, 2430462, 2430418, 2430420, 2430457, 2430458, 2430465, 2430466, 2430711, 2430713, 2430714, 2430715, 2430691, 2430692, 2430702, 2430703, 2430695, 2430696, 2430716, 2430717	0.50	0.50	0.60±0.2
2430477, 2430478, 2430482, 2430483, 2430474, 2430476,2430472, 2430473, 2430472, 2430473, 2430479, 2430480, 2430484, 2430485, 2430486, 2430487, 2430620, 2430621, 2430626, 2430628, 2430586, 2430587, 2430596, 2430597, 2430622, 2430623, 2430614, 2430615, 2430631, 2430632, 2430638, 2430639, 2430636, 2430637, 2430592, 2430593, 2430608, 2430609, 2430574, 2430575, 2430577, 2430578, 2430584, 2430585, 2430594, 2430595, 2430616, 2430617, 2430634, 2430635, 2430579, 2430580, 2430581, 2430583, 2430590, 2430591, 2430603, 2430604, 2430618, 2430619, 2430572, 2430573, 2430588, 2430589, 2430599, 2430600, 2430610, 2430611, 2430624, 2430625, 2430601, 2430602, 2430606, 2430607, 2430612, 2430613, 2430629, 2430630, 2430640, 2430641	0.80	1.00	0.90±0.2
2430488, 2430489, 2430496, 2430497, 2430508, 2430509, 2430492, 2430493, 2430500, 2430501, 2430498, 2430499, 2430504, 2430505, 2430506, 2430507, 2430490, 2430491, 2430494, 2430495, 2430502, 2430503, 2430667, 2430668, 2430678, 2430679, 2430682, 2430684, 2430665, 2430666, 2430644, 2430645, 2430653, 2430654, 2430656, 2430657, 2430675, 2430676, 2430687, 2430688, 2430689, 2430690, 2430646, 2430647, 2430651, 2430652, 2430658, 2430659, 2430663, 2430664, 2430671, 2430672, 2430642, 2430643, 2430660, 2430662, 2430669, 2430670, 2430673, 2430674, 2430680, 2430681, 2430685, 2430686, 2430648, 2430650	1.00	1.00	1.35±0.2
2430514, 2430515, 2430534, 2430535, 2430518, 2430519, 2430524, 2430525, 2430530, 2430531, 2430538, 2430539, 2430510, 2430511, 2430520, 2430521, 2430522, 2430523, 2430516, 2430517, 2430528, 2430529, 2430532, 2430533, 2430540, 2430541, 2430512, 2430513, 2430526, 2430527, 2430536, 2430537	2.00	1.15	1.70±0.2



2430404, 2430405, 2430408, 2430409, 2430394, 2430395, 2430412, 2430413, 2430397, 2430398, 2430410, 2430411, 2430392, 2430393, 2430399, 2430400, 2430406, 2430407, 2430401, 2430402	3.60	1.40	2.50±0.2
2430544, 2430545, 2430546, 2430547, 2430554, 2430555, 2430554, 2430555, 2430560, 2430561, 2430566, 2430567, 2430542, 2430543, 2430548, 2430549, 2430552, 2430553, 2430568, 2430569, 2430564, 2430565, 2430570, 2430571, 2430550, 2430551, 2430556, 2430557, 2430562, 2430563	4.90	1.60	3.10±0.2