

HQR1206 series

Precision resistance
 Rev Letter: A/0
 Rev Date: 2019-6-8



Features

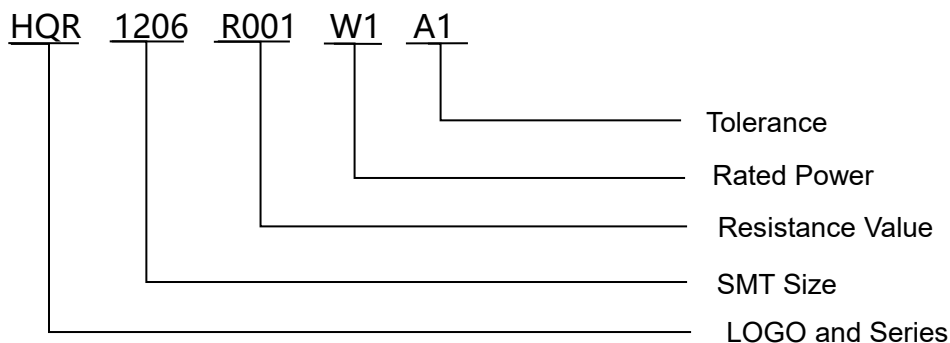
- Resistance value: 1mΩ~50mΩ
- Tolerance: ±1%、±2%、±5%
- Power: 1/4W~1W
- Temperature coefficient: ±50ppm/°C
- Operating Temperature: -55°C~170°C
- Surface mount: 1206



Applications

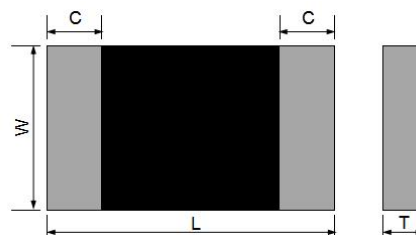
- Over current protection
- Current sense applications
- Servo motor control circuits
- Intelligent power modules
- Industrial PC modules and precision measurement system

Part Number



Series	Size	Resistance Value	Rated Power	Tolerance
HQR	1206	R001= 1mΩ R005=5mΩ R010=10mΩ R100=100mΩ R00025=0.25mΩ	W1=1W W2=2W W3=3W WA=1/8W WB=1/4W WC=1/2W	A01=± 0.1% A05=± 0.5% A1=± 1.0% A2=± 2.0% A5=± 5.0%

Dimensions (Unit:mm)

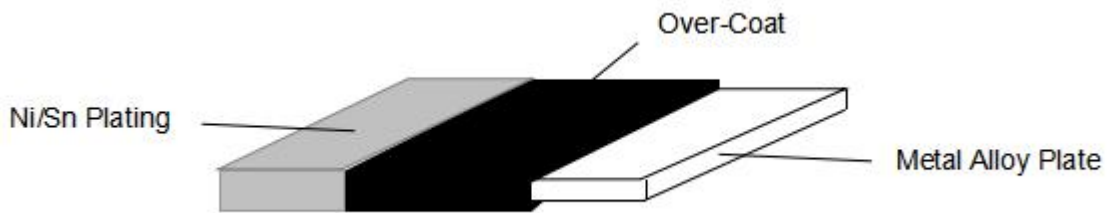


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Part Number	L	W	C	T
	(mm)	(mm)	(mm)	(mm)
1206 (R > 10mΩ)	3.20±0.20	1.60±0.20	0.50±0.20	0.50±0.20
1206 (1≤R≤10mΩ)	3.20±0.20	1.60±0.20	0.50±0.20	0.60±0.20



Typical Characteristics

Part Number	Resistance	Voltage	R-Tolerance	Temp. Range	Power rating @70°C	Temp-R coefficient	Insulation resistance
	mΩ	V	-	°C	W	/°C	-
HQR1206	1.0~50.0	(P*R) ^{1/2}	±0.1%~±5%	-55~170	1/2~1	±50ppm	≥100MΩ

Reliability Characteristics

Note: Experimental standard for parameters, IEC60115 & JIS C 5201

Items	Test conditions	Accept/Reject Criteria
Thermal shock	1000 cycles (-55~125°C each 0.5hr) , test after 24hr at 25°C	< ±0.5%
Short time overload	5X rated power for 5sec	< ±0.5%
Low temperature	-55°C for 45min	< ±0.5%
High temperature	170°C/1000hr, test after 24hr at 25°C	< ±1%
Mechanical shock	100gs, normal duration is 6ms, half sin shock pulse	< ±0.5%

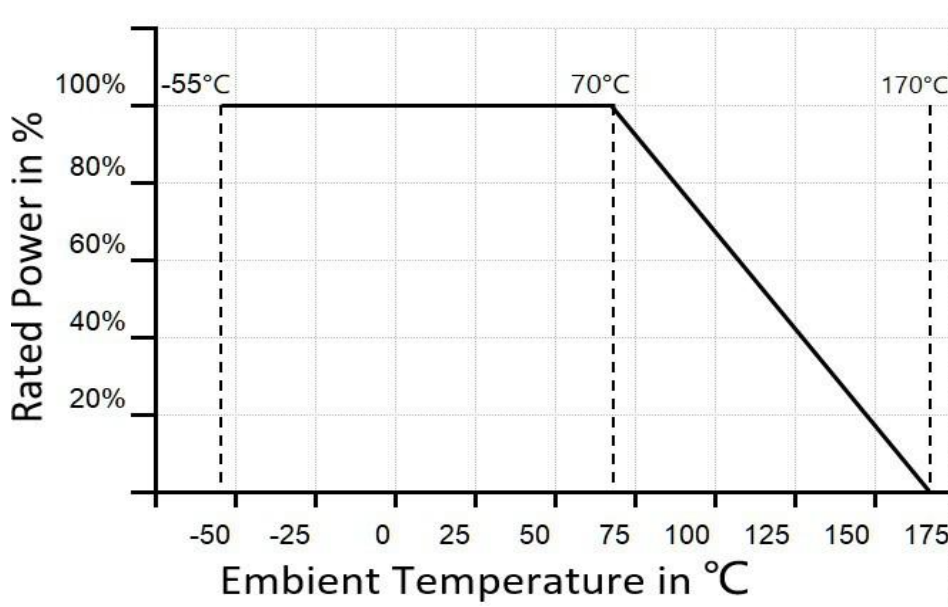
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85/85 under voltage	85°C/85%RH@10% rated voltage 1000hr, test after 24hr at 25°C	< ±0.5%
Load life	1.5hr ON/0.5hr OFF for 1000hr@70°C	< ±1.0%
Board flex	Min 2mm deflection, 60sec	< ±0.5%
Soldering endurance	T=260±5°C reflow, 10±1sec	< ±0.5%
Solderability	245±5°C, 2.0±0.5sec	95% covering of pad
Insulation resistance	DC 100V for 1min	> 100MΩ

Derating Curve



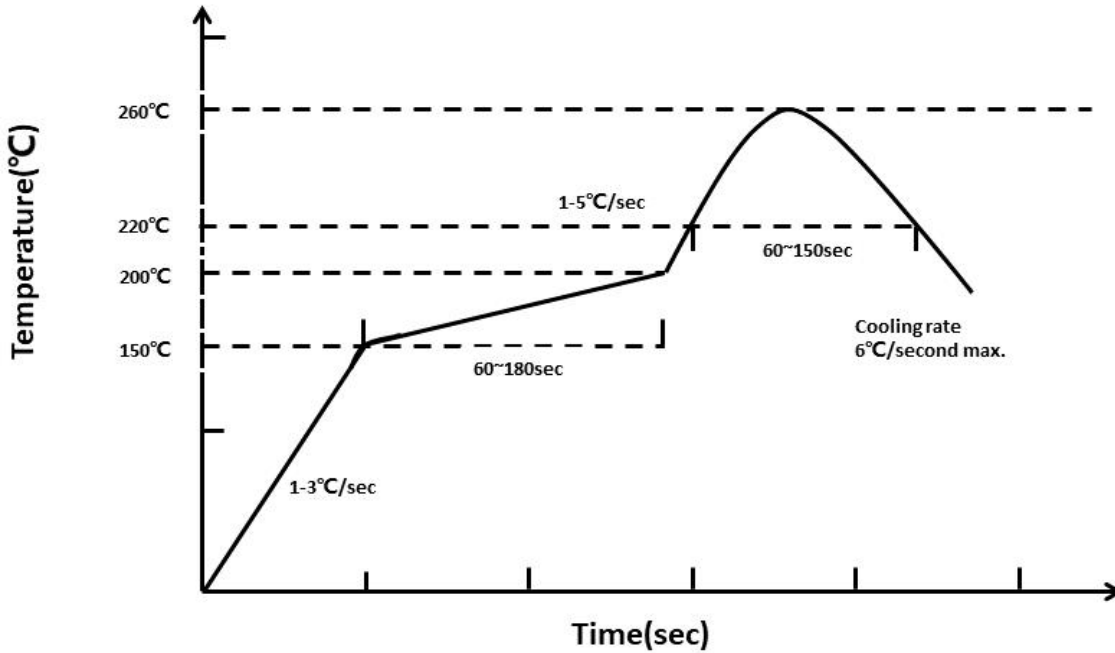
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Solder Reflow Recommendation

Reflow- Curve

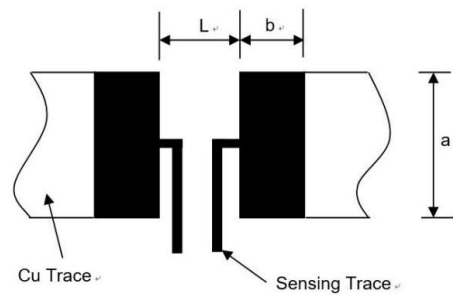


- *Recommended reflow methods: IR, hot air oven, nitrogen oven
- * Recommended maximum paste thickness: 0.25mm (0.010 inch)
- * Devices can be cleaned using standard industry methods and solvents.
- * Solder temperature and time should be controlled strictly in recommended conditions.

Note:

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Solder Pad Layouts



Part Number	Recommended pad layout figures(mm)		
	Dimension a	Dimension b	Dimension L
1206 (R > 1mΩ)	1.80±0.10	1.70±0.10	1.60±0.10
1206 (R ≤ 1mΩ)	1.80±0.10	2.30±0.10	1.00±0.10

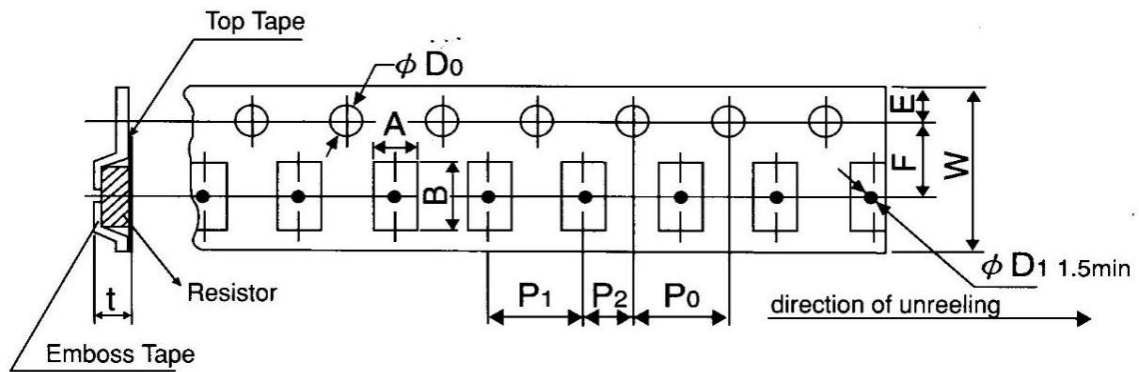
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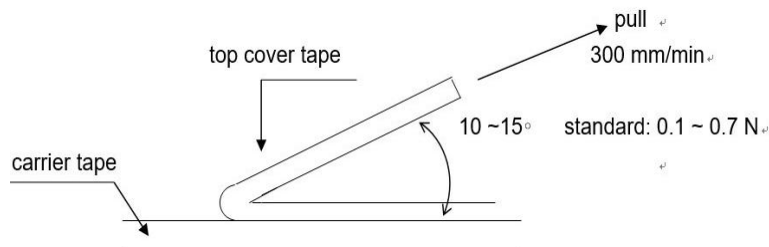
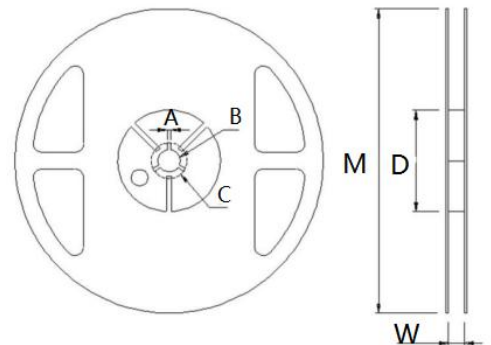


Packaging information (Unit: pcs&mm)

Tape SPC code	Tape&Reel Quantity	A	B	D0	E	F	P0	P1	P2	W	D1	T
		±0.2	±0.2	0~+0.5	±0.1	±0.05	±0.1	±0.1	±0.1	±0.1	±0.2	±0.05
1206	5000	2.00	3.60	1.50	1.75	3.50	4.00	4.00	2.00	8.00	NA	0.81



Tape SPC code	A	B	C	D	M	W
	±0.5	±0.5	±0.5	±0.1	±2.0	±0.5
1206	2.00	13.5	21.0	60.0	178.0	9.0



Peeling strength of top cover tape: 0.1 to 0.7 N at a peel-off speed of 300 mm/min

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Storage Conditions & Shelf Life

- Temperature: 5°C~35°C; Humidity: 40%~75%
- Two years from manufacturing date



WARNING:

- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- The devices are intended for protection against occasional overcurrent fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal and mechanical procedures for electronic components.

Prepare	Approval	Accept