Features

- Resistance value : 1.0mΩ~1.0Ω
- Tolerance : ±1%、±2%、±5%
- Power : 1W~3W
- Temperature coefficient : ±50ppm/℃
- Operating Temperature : -55℃~170℃
- Surface mount : 2512

Applications

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

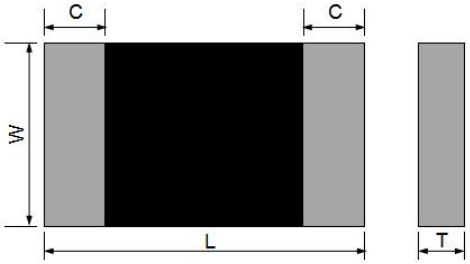
Part Number

HQR 2512 R001 W1 A1

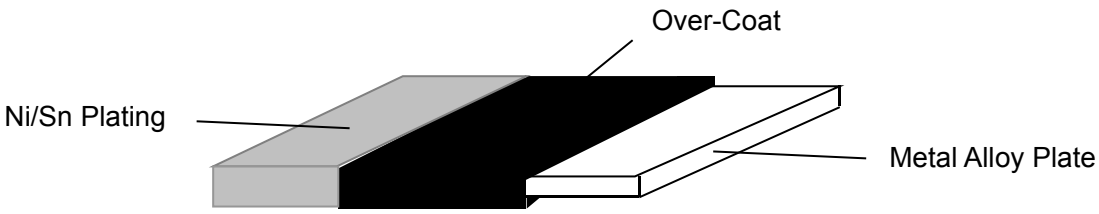
- A1 — Tolerance
- W1 — Rated Power
- R001 — Resistance Value
- 2512 — SMT Size
- HQR — LOGO and Series

Series	Size	Resistance Value	Rated Power	Tolerance
HQR	2512	R001= 1mΩ R005=5mΩ R010=10mΩ R100=100mΩ R00025=0.25mΩ	W1=1W W2=2W W3=3W	A01=± 0.1% A05=± 0.5% A1=± 1.0% A2=± 2.0% A5=± 5.0%

Dimensions (Unit:mm)



Part Number	L	W	C	T
	(mm)	(mm)	(mm)	(mm)
2512 (R > 1mΩ)	6.40±0.20	3.20±0.20	0.90±0.20	0.70±0.20
2512 (R≤1mΩ)	6.40±0.20	3.20±0.20	2.00±0.20	0.70±0.20



Typical Characteristics

Part Number	Resistance	Voltage	R-Tolerance	Temp. Range	Power rating @70℃	Temp-R coefficient	Insulation resistance
	mΩ	V	-	℃	W	/℃	-
HQR2512	1.0~500	$(P*R)^{1/2}$	±0.1%~±5%	-55~170	2~3	±50ppm	≧100MΩ

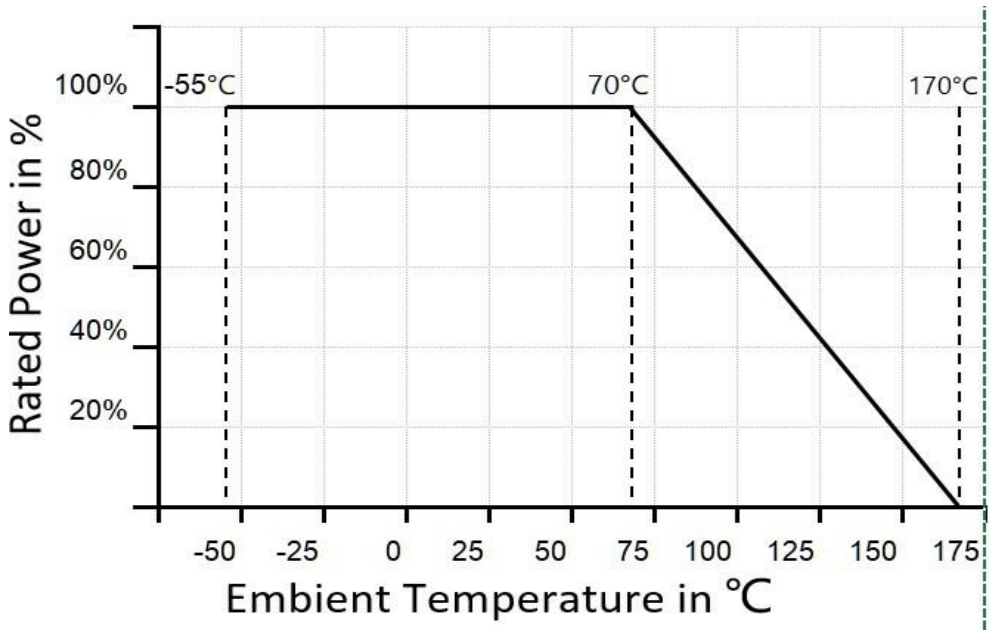
Reliability Characteristics

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

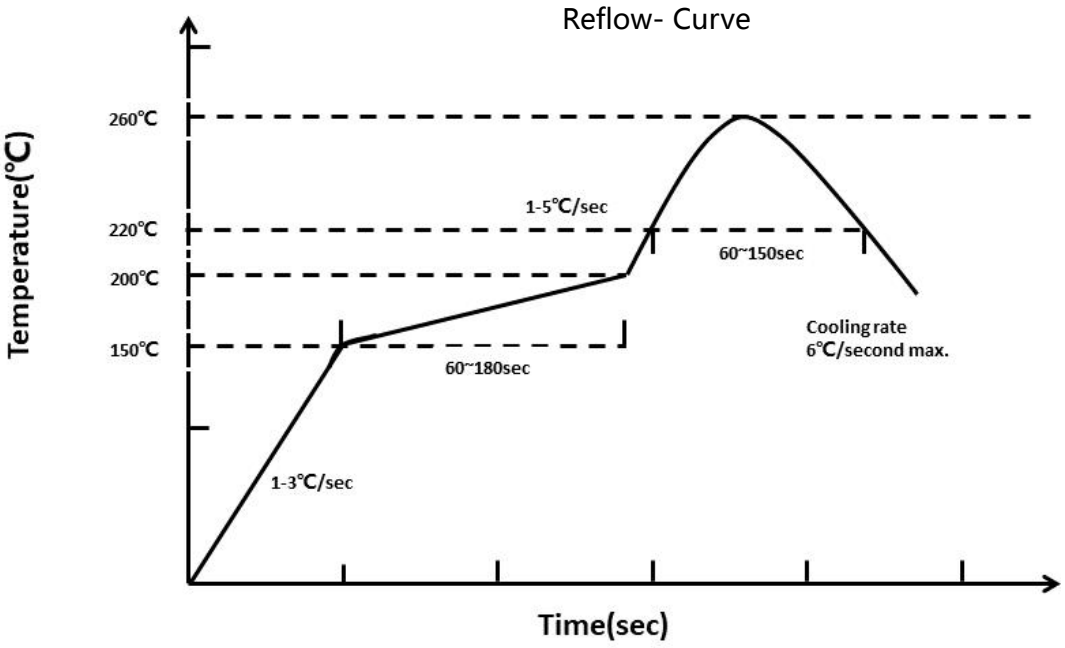
Items	Test conditions	Accept/Reject Criteria
Thermal shock	1000 cycles(-55~125℃ each 0.5hr) ,test after 24hr at 25℃	< ±0.5%
Short time overload	5X rated power for 5sec	< ±0.5%
Low temperature	-55℃ for 45min	< ±0.5%
High temperature	170℃/1000hr , test after 24hr at 25℃	< ±1%

Mechanical shock	100gs，normal duration is 6ms，half sin shock pulse	< ±0.5%
85/85 under voltage	85℃/85%RH@10% rated voltage 1000hr，test after 24hr at 25℃	< ±0.5%
Load life	1.5hr ON/0.5hr OFF for 1000hr@70℃	< ±1.0%
Board flex	Min 2mm deflection，60sec	< ±0.5%
Soldering endurance	T=260±5℃ reflow，10±1sec	< ±0.5%
Solderability	245±5℃，2.0±0.5sec	95% covering of pad
Insulation resistance	DC 100V for 1min	> 100MΩ

Derating Curve



Solder Reflow Recommendation



*Recommended reflow methods: IR, hot air oven, nitrogen oven

* Recommended maximum paste thickness: 0.25mm (0.010 inch)

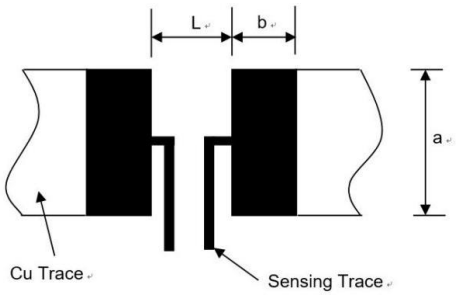
* Devices can be cleaned using standard industry methods and solvents.

* 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.

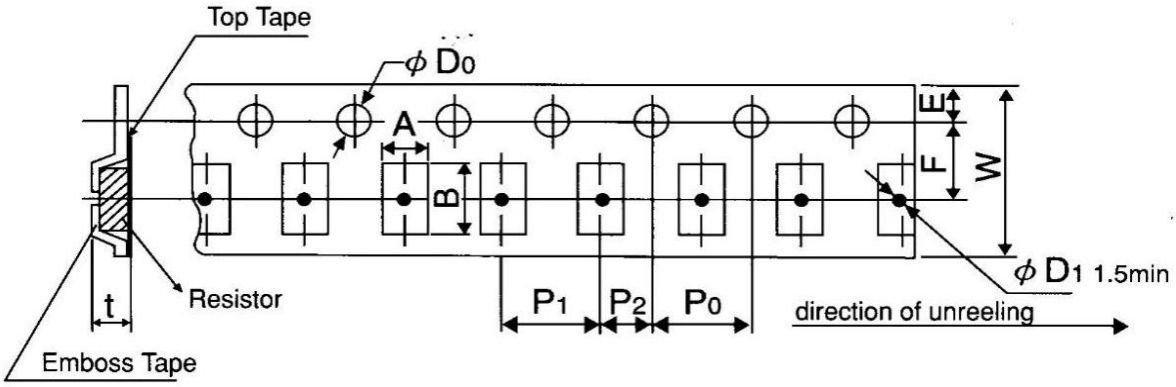
Solder Pad Layouts



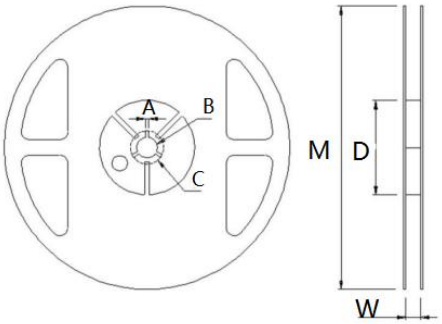
Part Number	Recommended pad layout figures(mm)		
	Dimension a	Dimension b	Dimension L
2512 (R > 1mΩ)	4.00±0.10	3.10±0.10	1.30±0.10
2512 (R≤1mΩ)	4.00±0.10	2.10±0.10	4.10±0.10

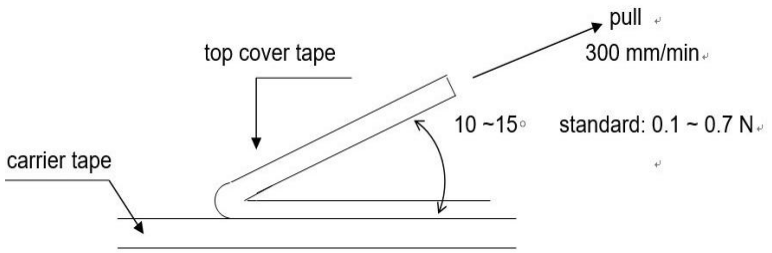
Packaging information (Unit : pcs&mm)

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	±0.2	±0.05	±0.15
2512	4000	3.60	6.90	1.50	1.75	5.50	4.0	4.0	2.0	12.0	1.50	1.20



Tape SPC code	A	B	C	D	M	W
	±0.5	±0.5	±0.5	±0.1	±2.0	±0.5
2512	2.00	13.5	21.0	80.0	178.0	13.8





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

Storage Conditions & Shelf Life

- Temperature: 5℃~35℃; 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