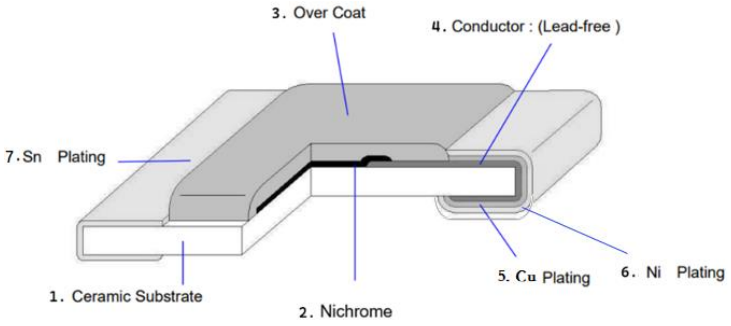
LRLH 陶瓷薄膜高功率电阻

编号	NQ-APS-175	修订日期	2025-07-31	版次	A4

陶瓷薄膜高功率电阻, SMD 贴片安装

■ 产品图示

■ 产品结构图



Item No.	Part name
1	Ceramic Substrate
2	Nichrome
3	Over coat
4	Conductor: (Lead-free)
5	Cu Plating
6	Ni Plating
7	Sn Plating

■ 产品特点

- ■Low Resistance and High Accuracy Resistor for Current Detection
- ■Good Performance for Heat Dissipation
- ■High Purity Alumina Substrate for High Power Dissipation
- ■Pb-free to Meet RoHS Requirements
- ■Large Electrode (All series)

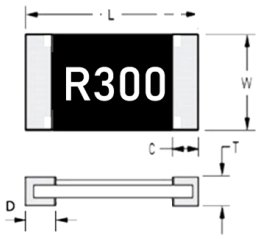
■ 应用领域

- ■Power Management Applications
- ■DC-DC Converter, Battery Pack, Charger, Adaptor
- ■Voltage Regulation Module (VRM)
- ■Switching Power Supply
- ■Portable Instruments (PDA and Cell Phone)/ Computer

料号标识: 示例 LRLH12CFTR300 = LRLH 系列 1206 尺寸 1W 1% 纸带 300mΩ

LRLH	12	C	F	T	R300
产品系列	尺寸	功率	精度	包装	阻值
陶瓷薄膜高功率贴片电阻	12-1206(3216)	A=0.75W B=0.25W C=1W S=0.5W	F:1% G:2% J:5%	E:Plastic T:Paper	R300=300mΩ

产品尺寸图



产品尺寸 (mm)

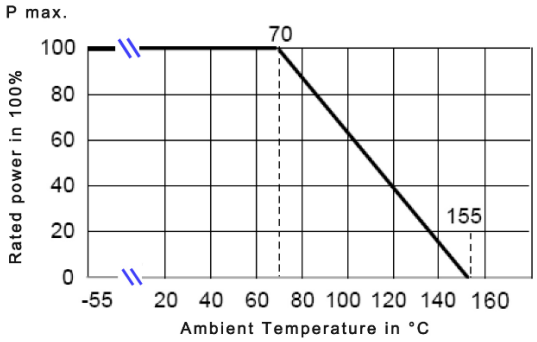
产品系列	L	W	C	D	T
LRLH12	3.10 ±0.10	1.55 ±0.20	0.50 ±0.30	0.40 ±0.20	0.55 ±0.10

电性规格标准

Type	LRLH 12
Power Rating (W)	1
Resistance Value	100mΩ~910mΩ
Operation Temperature Range	-55℃~ +155℃
Temperature Coefficient of Resistance	±100ppm/℃
Tolerance	±1% , ±2% , ±5%
Insulation Resistance	Over 100MΩ
Maximum Working Voltage(V)	$(P*R)^{1/2}$

**Operating Temp(℃): -55℃ ~ +155℃

功率衰减曲线



当电阻工作在温度超过 70°C 时，额定功率必须减额，减额曲线依据上图

字码表示

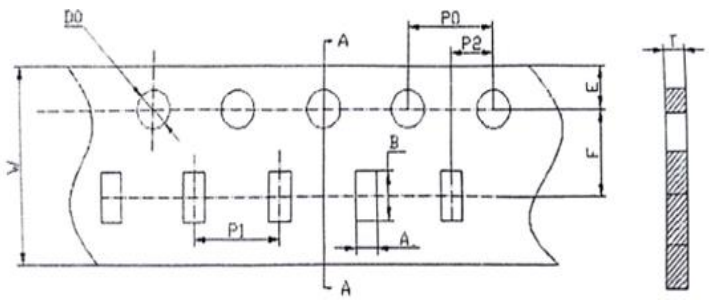
▲**LRLH** 12

电阻值用四位数字表示， 第一个"R"表示小数点, 其他数字表示标称阻值。

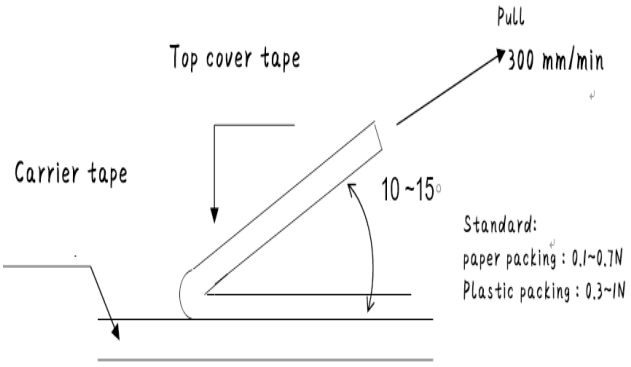
EX.: R300 = 300mΩ

包装规范

承载带



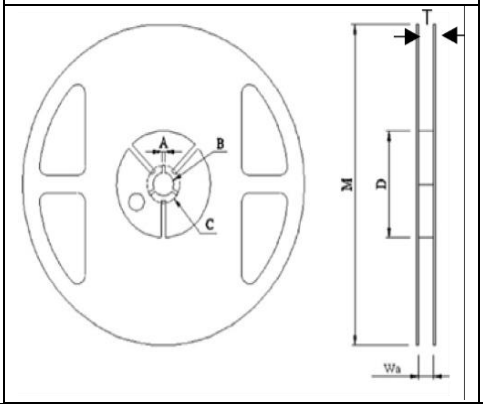
上带的剥离强度



▲**承载带： 4mm pitch 纸带材质**

Type	Pack	Q'ty/R	A ±0.2	B ±0.2	D0 +0.05/-0	E ±0.1	F ±0.05	P0 ±0.1	P1 ±0.1	P2 ±0.1	W ±0.2	T ±0.15
LRLH12	Paper	5k	2.00	3.60	1.50	1.75	3.50	4.00	4.00	2.00	8.00	0.84

▲**塑料圆盘图示**



Unit: mm

Unit: mm

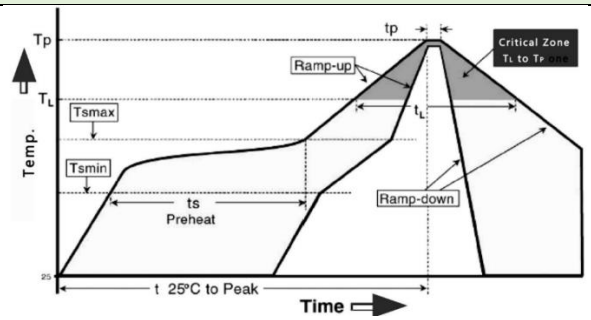
Body Size	A	B	C	D	M	Wa	T
LRLH12	2.0±0.5	13±1	21±0.5	60±1	178±2	9.00±1.0	11.5 ± 1.5

信赖性试验项目

项目	参考标准	试验条件	规格
Short Time Overload	IEC60115-1-4.13 JIS-C5201-1-4.13	5 X rated power for 5 sec	±(1% + 0.5mΩ)
Temperature Coefficient of Resistance	Refer to JIS C 5201-1 4.8	TCR (ppm/°C) = (R2-R1/R1*(T2-T1))X 106 R1:Room Temp. R value (Ω) R2: 125 °C Temp. R value (Ω) T1:Room Temp.(°C) T2: 125 °C	Refer to 2
Biased Humidity	Refer to MIL-STD-202 Method 103"	10% Rated power at 85℃,RH:85% ,1000Hrs, Measurement at 24hrs after test conclusion	± (5.0% + 0.5mΩ)
Endurance (Load Life)	IEC60115-1-4.25.1 JIS-C5201-1-4.25.1	1000 hours at rated power, 70℃ , 1.5hours "ON ", 0.5hour "OFF"	± (5.0% + 0.5mΩ)
Rapid Change of Temperature	IEC60115-1-4.19 JIS-C5201-1-4.19	-55℃ (15 min.) / +150 ℃(15 min.) 1000 cycles	± (1.0% + 0.5mΩ)
Solderability	IEC60115-1-4.17 JIS-C5201-1-4.17	245±5℃ solder, 2±0.5 sec dwell. Solder : Sn96.5 / Ag3.0 / Cu0.5	At least 95% of surface area of electrode shall be covered with new solder.
Resistance to Solder Heat	IEC60115-1-4.18 JIS-C5201-1-4.18	270 ±5℃ solder , 10 ±1 sec dwell .	± (1.0% + 0.5mΩ)
Robustness of Termination (Bending)	IEC60115-1-4.33 JIS-C5201-1-4.33	2mm deflection	± (1.0% + 0.5mΩ)
High Temperature Exposure (Storage)	Refer to MIL-STD-202 Method 108	T=155℃,1000hrs,Measurement at 24hrs after test conclusion。	± (1.0% + 0.5mΩ)

焊接建议 (以下为建议值,请客户使用时依实际应用作调整;建议的焊膏: 96.5Sn/3.0Ag/0.5Cu)

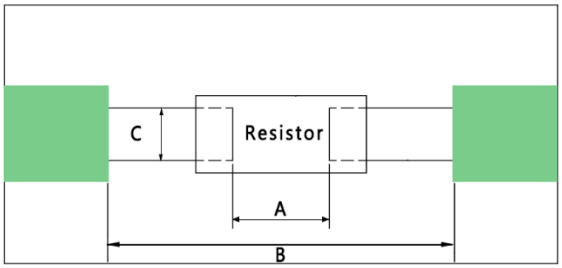
回流焊 IR Reflow-Soldering Profile



Profile Feature	Lead (Pb)-Free Assembly
Average ramp-up rate (Ts max to Tp)	3℃ / second max.
Preheat - Temperature Min (Ts min) - Temperature Max (Ts max) - Time (Ts min to Ts max) (ts)	 150℃ 200℃ 60 -120 seconds
Time maintained above : - Temperature (TL) - Time (TL)	 217℃ 60-150 seconds
Peak Temperature (Tp)	260℃
Time within +0/-5 ℃ of actual Peak Temperature (tp)[2]	 10 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8mimutes max.

建议的焊板尺寸

Unit: mm



型别	A	B	C
LRLH12(1206)	1.6~2.0	4.4~5.0	1.2~1.8

标签表示 (示例如下)

存储条件&保质期限

①在温度5°C ~ 35°C、相对湿度40 ~ 75的密闭条件可存放2年。
②存储时请避开如下恶劣环境，以免影响产品性能及焊锡连接性：海风、Cl2、H2S、NH3、SO2及NO2等腐蚀性气体的场所,储存在没有直接阳光照射的情况下。

产品使用注意事项

①未焊接前量测阻值,应使用精密度高的专用电阻量表,量测零件时,测针必须确实接触零件。
②手工焊接作业时或使用镊子夹取时,应避免损伤到保护层。
③PCB分板或者固定在支撑体上时需小心操作,须避免过度弯曲对电阻器造成机械应力。
④需于规格内的额定功率范围内使用，尤其当功率超出额定值时，将有可能会对产品之可靠度产生影响。

声明

销售业务联系窗口

文件修订履历表

文件名称	LRLH12系列 陶瓷薄膜高功率SMD电阻	编号	NQ-APS-175

版本日期	版次	修订页次	修订内容		修定者	备注
			修订前	修订后		
2023/10/14	A0	/	/	新制发行	张树峰	
2024/11/05	A1	1	无产品结构图	增加产品结构图	管静	
2024/11/11	A2	1	产品结构图无CU	增加产品结构图 CU	管静	
2024/12/11	A3	2	更改电性规格 阻值范围201-910mΩ	阻值范围 100-910 mΩ	管静	
2025/07/31	A4	2	料号标识栏无0.5W	增加0.5W	管静	