



## Schedule of Scope to Certificate of Conformity Approved Component

IECQ Certificate No.: IECQ-C ULTW 20.0001

CB Certificate No.: 50600349 AQP

Schedule Number: IECQ-C ULTW 20.0001-S      Rev No.: 1      Revision Date: 2020/01/02      Page 1 of 5

### Approval Scope

**Table 1 Resistance Range & Electrical Characteristics**

Type	T.C.R (PPM/°C)	Max. Working Voltage	Max. Over- load Voltage	Operating Temperature (Temp. Range)(°C)		Insulation Resistance	Power Rating at 70°C	Resistance Range(Ω)		
				Min.	Max.			F(±1%)	G(±2%)	J(±5%)
RLM12	±50	(P*R) <sup>1/2</sup>	5 X rated power for 5 sec	-55	170	over 100MΩ	1/4W	10mΩ-50mΩ	10mΩ-50mΩ	10mΩ-50mΩ
						over 100MΩ	1/2W	10mΩ-50mΩ	10mΩ-50mΩ	10mΩ-50mΩ
						over 100MΩ	1W	10mΩ-50mΩ	10mΩ-50mΩ	10mΩ-50mΩ
RLM20	±50	(P*R) <sup>1/2</sup>	5 X rated power for 5 sec	-55	170	over 100MΩ	1/2W	2mΩ~50mΩ	2mΩ~50mΩ	2mΩ~50mΩ
						over 100MΩ	3/4W	2mΩ~50mΩ	2mΩ~50mΩ	2mΩ~50mΩ
						over 100MΩ	1W	2mΩ~50mΩ	2mΩ~50mΩ	2mΩ~50mΩ
						over 100MΩ	3/2W	2mΩ~50mΩ	2mΩ~50mΩ	2mΩ~50mΩ
RLM25	±50	(P*R) <sup>1/2</sup>	5 X rated power for 5 sec	-55	170	over 100MΩ	1W	2mΩ~50mΩ	2mΩ~50mΩ	2mΩ~50mΩ
						over 100MΩ	3/2W	2mΩ~15mΩ	2mΩ~15mΩ	2mΩ~15mΩ
						over 100MΩ	2W	2mΩ~10mΩ	2mΩ~10mΩ	2mΩ~10mΩ
	±275	(P*R) <sup>1/2</sup>	5 X rated power for 5 sec	-55	170	over 100MΩ	1W	1mΩ	1mΩ	1mΩ
						over 100MΩ	3/2W	1mΩ	1mΩ	1mΩ
						over 100MΩ	2W	1mΩ	1mΩ	1mΩ

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**Table 2      Part Number**

<u>RLM</u> Item No.	<u>12</u> Series	<u>F</u> Resistance tolerance	<u>I</u> Packaging	<u>S</u> Power Rating	<u>M</u> Metal	<u>R010</u> Resistance
12:1206 (3216)		F:±1% G:±2% J:±5%	T: Paper	A=1/4W S=1/2W C=1W	M=Metal	e.g : R010=10mΩ R050=50mΩ

<u>RLM</u> Item No.	<u>20</u> Series	<u>F</u> Resistance tolerance	<u>E</u> Packaging	<u>C</u> Power Rating	<u>R020</u> Resistance
20:2010 (5025)		F:±1% G:±2% J: ±5%	E:Embossed tape	S=1/2W I=3/4W C=1W D=3/2W	e.g : R003=3mΩ R050=50mΩ

<u>RLM</u> Item No.	<u>25</u> Series	<u>F</u> Resistance tolerance	<u>E</u> Packaging	<u>C</u> Power Rating	<u>R020</u> Resistance
25:2512 (6432)		F:±1% G:±2% J: ±5%	E:Embossed tape	C=1W D=3/2W E=2W	e.g : R001=1mΩ R050=50mΩ

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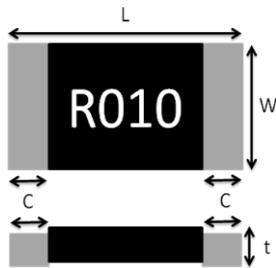
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### 1.1 Outline Drawing and Dimension

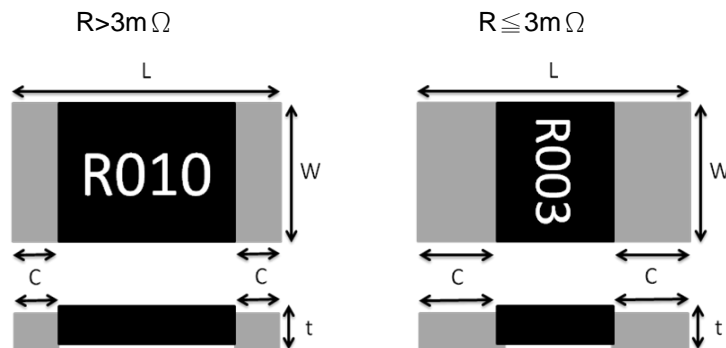
The outline drawing and dimension is listed as Table 3.

**Table 3 Outline Drawing and Dimension**

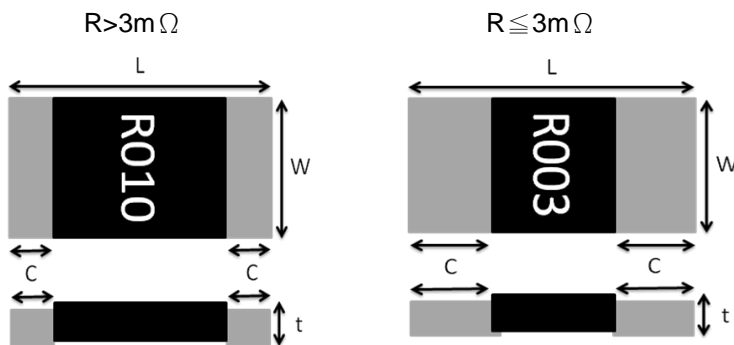
RLM12



RLM20



RLM25



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unit:mm					
Style	L	W	c	t	Material
RLM12	3.2±0.2	1.6±0.2	0.5 ± 0.3	0.6 ± 0.2	Metal : Alloy Over Coating : molding Compound UL-94V grade
RLM20	5.0±0.2	2.5±0.2	1.5±0.3(R≤3mΩ)	0.6 ± 0.2	
			0.6±0.3(R>3mΩ)		
RLM25	6.4±0.2	3.2±0.2	2.0±0.2(R≤3mΩ)	0.6 ± 0.2	
			0.9±0.2(R>3mΩ)		

### 1.2 Related Documents

IECQ 03-1, Rule of Procedure – Part 1: General Requirements for all IECQ Schemes

IECQ 03-3, Rule of Procedure – Part 3: IECQ Approved Component Products, Related Materials & Assemblies Scheme

IECQ 03-3-2: Rule of Procedure – Part 3-2: IECQ Approved Component Products, Related Materials & Assemblies Scheme, IECQ Approved Component – Automotive Qualification Program (IECQ AC-AQP)

AEC-Q200 REV D, Stress Test Qualification for Passive Components

AEC-Q200-004A Resistance Measurement Method

AEC-Q200-002B Human Body Model Electrostatic Discharge Test

AEC-Q200-005A Board Flex Test

AEC-Q200-006A Terminal Strength (SMD)/Shear Stress Test

JEDEC JESD22-A104D Temperature Cycling

JEDEC JEP 140 Beaded Thermocouple Temperature Measurement of Semiconductor Package

JEDEC JEP 153A Characterization and Monitoring Thermal Stress Test Oven Temperatures

MIL-STD-883K Method 2009 Test methods standard microcircuits

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JEDEC JESD22-B100B Physical Dimensions

MIL-STD-202H, Test Method Standard, Electronic and Electrical Component Part

EIA/IPC/JEDEC J-STD-002D, Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires

ASTM-B-809-95(2013): Standard Test Method for Porosity in Metallic Coatings by Humid Sulfur Vapor ("Flowers-of-Sulfur")

IEC 60115-1 Edition 4.0: Fixed Resistors for Use in Electronic Equipment - Part 1: Generic Specification

UL-94: Flammability

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