SPECIFICATION SHEET

DIP TYPE CEMENT RESISTORS GENERAL PURPOSE SQP SERIES

SPECIFICATION SHEET NO.	S0402 - SQP20W15RJL001	
ORIGINAL MFG/PART NO.	Aillen Capacitors/SQP20W15RJ	
NEXTGEN PART CODE	SQP20W15RJL001	Indicate This Code For RFQ /Order
DATE	Apr. 2, 2025	
REVISION	A1	Updated With Most Recent Data
DESCRIPTION AND MAIN PARBMETRICS	Dip Type Cement Resistors General Purpose SQP Series, Axial Terminal Dimension W14.0*H13.5*L60.0mm Power Rated Wattage 20W Resistance Value 15Ω Tolerance±5% Operating Temp. Range -55℃ ~ +155℃ Package in Bulk, 100pcs/Inner Box REACH/RoHS/RoHS III Compliant and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE
Issued/Checked/Approved Mandy Xu · Ruby Zhang · Jack Zhang
Effective Date: Apr. 2, 2025

CUSTOMER APPROVE
Date:

DESCRIPTION

A Cement Resistor Is A Heat- And Flame-Resistant Power Resistor. A Cement Resistor Can Handle The Large Amounts Of Power Flowing Through It And Is Not Damaged By Heat Or Flame. If You Are Designing A Circuit With A Large Amount Of Current Flowing Through The Resistor And It Needs To Be Resistant To Heat And Flame, Then A Cement Resistor Is A Good Design Choice. Cement Resistors Are Made Of Resistance Wire Wound On An Alkali-free Ceramic Core, Plus A Layer Of Heat-resistant, Moisture-resistant And Non-corrosive Protective Materials. The Wire Wound Resistors Are Then Placed In Square Ceramic Packages Sealed With Special Non-flammable And Heat-resistant Cement.

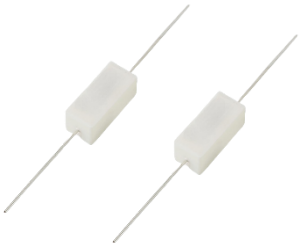


Image shown is a representation only. Exact specifications should be obtained from the product dimension.

MAIN FEATURE

- Dip Type Cement Resistors General Purpose SQP Series, Axial Terminal
- Wide Resistance Value Range and Tolerance: ±1% or ±5%
- Power Rated Wattage Range 2W~25W
- Very Small, Robust And Reliable
- High Temperature Stability
- Ceramic Flame Retardant Package, Sealed With Special Cement
- The Recommended Washing Method Is Alcohol
- Excellent Pulse Load Capability
- Moisture Sensitivity Level (MSL) 1
- Short Lead Time
- Cross Competitors Parts and More
- REACH/RoHS/RoHS III Compliant and Halogen Free (HF)

APPLICATION

- Home Application, Consumer Electronics and Computer
- Power Application
- Telecommunications Equipment

ELECTRICAL CHARBCTERISTICS

- See Page 4~ Page 5
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

HOW TO ORDER

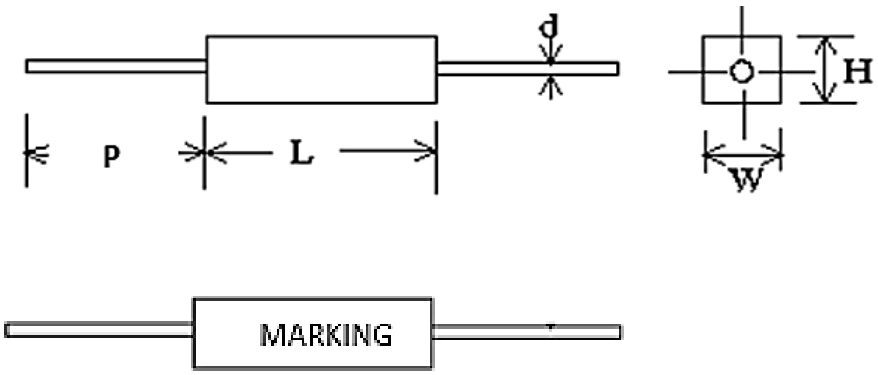
- Please Follow Up Part Code Guide And Indicate NextGen Part Code SQP20W15RJL001 For RFQ and Order.

PART CODE GUIDE

RFQ
Request For Quotation

CODE	NAME	KEY SPECIFICATION OPTION
SQP	Product Series	Dip Type Cement Resistors General Purpose Axial Terminal, Shape of Type Form P
20W	Power Rated Wattage	2W: Power Rated Wattage 2W; 3W: Power Rated Wattage 3W; 5W: Power Rated Wattage 5W; 7W: Power Rated Wattage 7W; 10W: Power Rated Wattage 10W; 15W: Power Rated Wattage 15W; 20W: Power Rated Wattage 20W; 25W: Power Rated Wattage 25W
15R	Nominal Resistance Value	Ω, KΩ Are Its Unit Which Be In Accordance With JIS-C6409 Article 6 (EIA RS-196A) Series. Letter "10R" indicates resistance value 10Ω. Letter "10K" indicates resistance value 10KΩ 0R1: 0.1Ω; 0R27: 0.27Ω; 0R56: 0.56Ω; 0R68: 0.68Ω; 0R82: 0.82Ω; 1R: 1Ω; 1R5:1.5Ω; 1R8:1.8Ω; 2R2:2.2Ω; 2R7:2.7Ω; 3R:3Ω; 3R3:3.3Ω; 4R7: 4.7Ω; 5R: 5Ω; 9R7: 9.7Ω; 10R: 10Ω; 15R: 15Ω; 22R: 22Ω; 27R: 27Ω; 33R: 33Ω; 47R: 47Ω; 51R: 51Ω; 56R: 56Ω; 75R: 75Ω; 100R: 100Ω; 150R: 150Ω; 200R: 200Ω; 220R: 220Ω; 240R: 240Ω; 270R: 270Ω; 330R: 330Ω; 510R: 510Ω; 1K: 1KΩ; 2K: 2KΩ; 2K4: 2.4KΩ; 6K: 6KΩ; 10K: 10KΩ; 11K: 11KΩ; 27K: 27KΩ; 47K: 47KΩ; 54K: 54KΩ; 68K: 68KΩ; 100K: 100KΩ; 120K: 120KΩ
J	Tolerance	It Is Measured By Bridge-method At Room Temperature And Expressed By A Capital Letter. Wire Wound: F: ±1%; G: ±2%; J: ±5% (standard) Power Film: G: ±2%; J: ±5% (standard)
L001	Internal Control	Letter A~Z, a~z or Digits (0~9)
XX	Special/Custom Parameters	Blank: N/A; XX: Letter A~Z, a~z or Digits (0~9) for Special/Custom Parameters

DIMENSION - Unit: mm



PRODUCT SERIES	POWER RATED WATTAGE	DIMENSION (MM)					RESISTANCE RANGE (Ω)		MAX WORKING VOLTAGE (V)
		W ±1	H ±1	L ±1.5	d ±0.1	P ±3	WIRE WOUND	POWER FILM	
SQP	2W	7	7	18	0.65	23	0.1~100	101~10K	150
SQP	3W	8	8	22	0.8	35	0.1~150	151~33K	350
SQP	5W	10	9	22	0.8	35	0.1~150	151~50K	350
SQP	7W	10	9	35	0.8	35	0.1~430	431~50K	500
SQP	10W	10	9	48	0.8	35	0.1~470	471~50K	750
SQP	15W	12.5	11.5	48	0.8	35	0.5~600	601~150K	1000
SQP	20W	14	13.5	60	0.8	35	0.1~1K	1.1K~150K	1000
SQP	25W	14	13.5	60	0.8	35	0.1~1K	1.1K~150K	1000

Note

- Max Overload Voltage is 2 times of Max Working Voltage.
- Too low or too high ohmic value can be supplied only case by case.
- Max Working Voltage is applying for all SQ types.
- Power Film means cutting resistance values instead of wound by resistance wires.
- Non-Inductive types are also supplied.

ELECTRICAL CHARACTERISTICS - Ta = 25℃

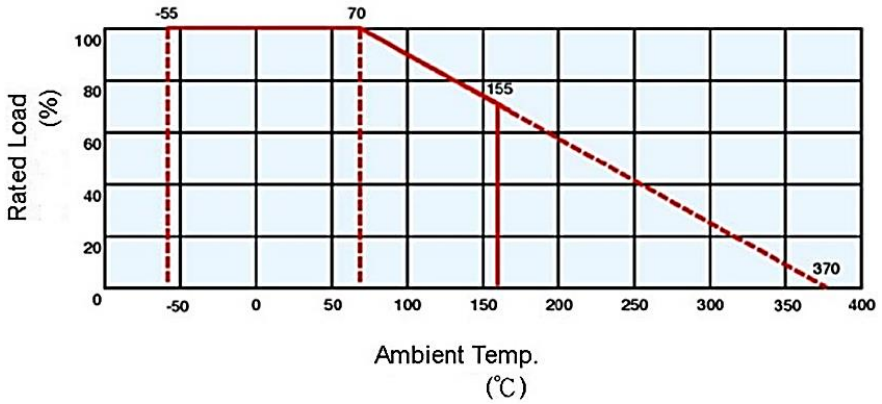
PART CODE	POWER RATED WATTAGE	NOMINAL RES. VALUE	TOL.	OPERATING TEMP. RANGE	DIMENSION				
					W ±1	H ±1	L ±1.5	d ±0.1	P ±3
	W	Ω	%	℃	mm				
SQP2W10RJL0001	2	10	±5	-55 ~ +155	7	7	18	0.65	23
SQP5W0R1JL0001	5	0.1	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W0R56JL001	5	0.56	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W15RJL0001	5	15	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W200RJL001	5	200	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W22RJL0001	5	22	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W2R2JL0001	5	2.2	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W3K3JL0001	5	3.3K	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W47RJL0001	5	47	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W510RJL001	5	510	±5	-55 ~ +155	10	9	22	0.8	35
SQP5W51RJL0001	5	51	±5	-55 ~ +155	10	9	22	0.8	35
SQP10W100RJL01	10	100	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W10RJL001	10	10	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W15RJL001	10	15	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W1KJL0001	10	1K	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W1RJL0001	10	1	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W2R2JL001	10	2.2	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W33RJL001	10	33	±5	-55 ~ +155	10	9	48	0.8	35
SQP10W47RJL001	10	47	±5	-55 ~ +155	10	9	48	0.8	35
SQP15W6KJL0001	15	6K	±5	-55 ~ +155	12.5	11.5	48	0.8	35

ELECTRICAL CHARACTERISTICS - Ta = 25℃

PART CODE	POWER RATED WATTAGE	NOMINAL RES. VALUE	TOL.	OPERATING TEMP. RANGE	DIMENSION				
					W ±1	H ±1	L ±1.5	d ±0.1	P ±3
	W	Ω	%	℃	mm				
SQP20W10RJL001	20	10	±5%	-55 ~ +155	14	13.5	60	0.8	35
SQP20W15RJL001	20	15	±5%	-55 ~ +155	14	13.5	60	0.8	35
SQP20W24RJL001	20	24	±5%	-55 ~ +155	14	13.5	60	0.8	35
SQP20W33RJL001	20	33	±5%	-55 ~ +155	14	13.5	60	0.8	35

RATED POWER

Rated power is the value of Max load wattage specified at the ambient temperature of 70℃, and shall meet the functions of electrical and mechanical performance. When the ambient temperature surpasses above mentioned temperature, the value declines as per following DERATING CURVE.



RATED VOLTAGE

It is calculated through the following formula:

where V: rated voltage (V)

P: rated power (W)

$$V = \sqrt{P \times R}$$

R: total nominal resistance (Ω)

However, in case the voltage calculated exceeds the maximum load voltage, such the maximum load voltage shall be regarded as its rated voltage, means whichever less.

STRUCTURE

Terminal: It is made of hot–dipped tin coated copper wire

Stuffing: Stuffing is made by flameproof cement (resistant to 800℃) which is solid enough to be free from looseness, crack and easy breakage.

Marking: Marking is made on the surface, including Power Rating Code, Resistance Value Code, Tolerance Code and Internal Control code

MECHANICAL PERFORMANCE

Terminal tensile: To fix the resistor body, a static load of 4.5kg. is to be gradually applied into the terminal for 10 seconds without causing any looseness and fall.

Twist withstand: To bend the lead wire at the point of about of 6mm from resistor body to 90°, then catch the wire at 1.2±0.4mm apart from the bent point end and turn it (clockwise) by 360 degrees perpendicular to the resistor axis at speed of 5 seconds per turn, and do the same counterclockwise again which constitute a whole turn. Repeat the turn for 2 times without causing any break and looseness.

ELECTRICAL PERFORMANCE

Resistance Temperature Coefficient:

It shall be within ±300ppm/℃ and if the ohmic value is under 1Ω the T.C. shall be within ±600ppm/℃. T.C. (ppm/℃) =[(R2 - R1)÷R1]×[1÷(T2 - T1)]×106

where R1: resistance value at reference temperature; R2: resistance value at test temp. ;

T1: reference temp. ; T2: test temp.

Temperature Cycle:

Following temp. cycles are to be made 5 times and then put at room temp. for one hour, the resistance value change rate between pre-and-post test shall be within ±1%.

STEPS	TEMPERATURE (℃)	TIMES (MINUTES)
1	-55 ±3	30
2	Room Temperature	3
3	155 ±3	30
4	Room Temperature	3

Short Time Over Load:

When the resistors are applied 10 times (Power Film: 5 times) as much as rated wattage for 5 seconds continuously, it shows no evidence of arc, flame...etc. Removing the voltage and place the resistors to the normal condition for 30 minutes, the resistance value change rate between pre-and-post test shall be within ±2%.

Insulation Character:

Resistors are located in a V-shaped metal trough. Using the DC 500V megger instrument 2 poles to clutch either side of lead wires and metal trough, measuring the Insulation Resistance which shall be over 1000MΩ.

Voltage Withstanding:

Resistors are located in a V-shaped metal trough. Applying AC 1000V for one minute and should find no physical damage to the resistors, such as arc, char ...etc.

Load Life:

The resistors arrayed are sent into the 70℃ oven, applying rated voltage at the cycle of 1.5 hours ON, 0.5 hour OFF for 1000+48 -0 hours in total. Then, after removing the voltage, take the resistors out of the oven and left under normal temp. for one hour cooling. The resistance value change rate between pre-and-post test shall be within ±5%.

Moisture-proof Load Life:

The resistors arrayed are placed into a constant temp./humidity oven at the temp. of 40±2℃ and the humidity of 90～95%, rated power is applied for 1.5 hours and cut off for 0.5 hour. The similar cycle will be repeated for 1000+48 -0 hours in total (including cut-off time). Then remove the voltage, taking the resistors out of the oven and leaving them at room temp. for one hour. The resistance value change rate between pre-and-post test shall be within ±5%. There also shall be no evidence of remarkable change on appearance, and the marking shall not be illegible.

Solder-ability:

The leads with flux are dipped in a melted solder of 235±5℃ for 2 seconds, more than 95% of the circumference of the lead wires shall be covered with solder.

Resistance to Soldering Heat:

Two leads are together dipped in a melted solder of 270 ±5℃ for 10 ±1 seconds, or 350 ±10℃ for 3.5 ±0.5 seconds, Then remove the resistors and leaving them at room temp. for one hour. The resistance value change rate between pre-and-post test shall be within ±1%.

Nonflammability:

The resistors are applied the power of 16 times the rated wattage for 5 min. and shall not get flame.

Storage Conditions:

The resistors with appropriate package would have a preservative duration of 1 year, under the following conditions. T=5℃ ~ 35℃ and H=40% ~ 75%

PACKAGE INFORMATION – Packed In Bulk

PRODUCT SERIES	POWER RATED WATTAGE	QUANTITY PER INNER BOX (PCS)
SQP	2W	500
SQP	3W	-
SQP	5W	350
SQP	7W	500
SQP	10W	100
SQP	15W	100
SQP	20W	100
SQP	25W	100

IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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