

DATA SHEET

CEMENT RESISTORS

High Power, Radial Terminal

SQZ Series

NSZ Series

$\pm 1\%$, $\pm 5\%$

5W to 20W

RoHS compliant & Halogen Free





APPLICATIONS

- Power applications
- Home appliance
- Industry

FEATURES

- High power rating
- Excellent pulse load capability
- Radial terminal
- Flameproof ceramic case
- RoHS compliant and halogen free

ORDERING INFORMATION

Part number of the cement resistor is identified by the series, power rating, tolerance, packing, temperature coefficient and resistance value.

PART NUMBER

SQZ **500** **J** **B** **-** **100R**
 (1) (2) (3) (4) (5) (6)

(1) SERIES NAME

SQZ Series = General purpose

NSZ Series = Non inductive

(2) POWER RATING

500 = 5W

15A = 15W

700 = 7W

20A = 20W

10A = 10W

(3) TOLERANCE

F = $\pm 1\%$ (Wirewound),

J = $\pm 5\%$

(4) PACKAGING

B = Bulk for wirewound or metal oxide or fiberglass element

W = Bulk for wirewound element

M = Bulk for metal oxide element

F = Bulk for fiberglass element

(5) TEMPERATURE COEFFICIENT OF RESISTANCE

F = ± 100 ppm/ $^{\circ}$ C (Wirewound)

- = Based on spec.

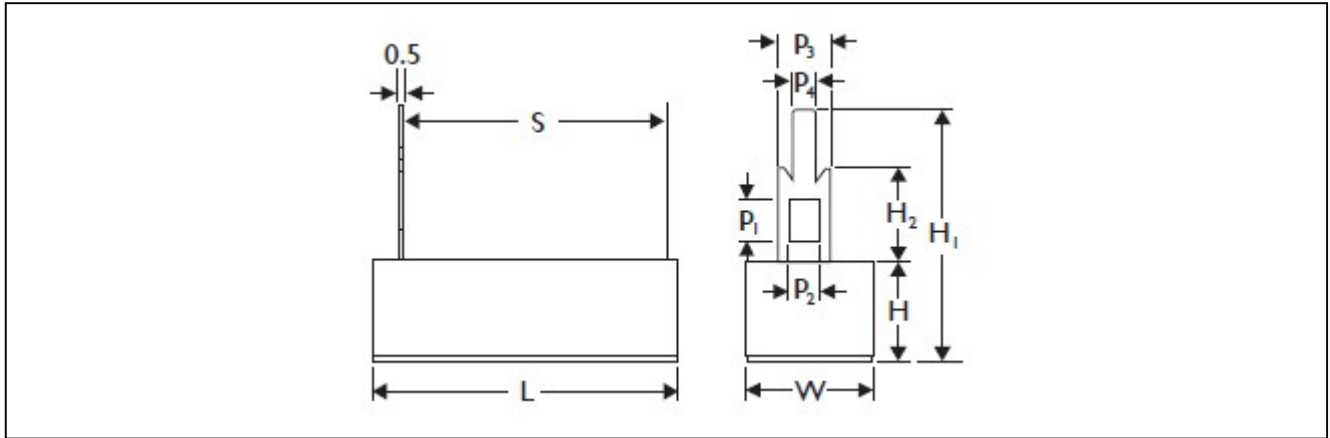
(6) RESISTANCE VALUE

E24 & E96 Series

Example:

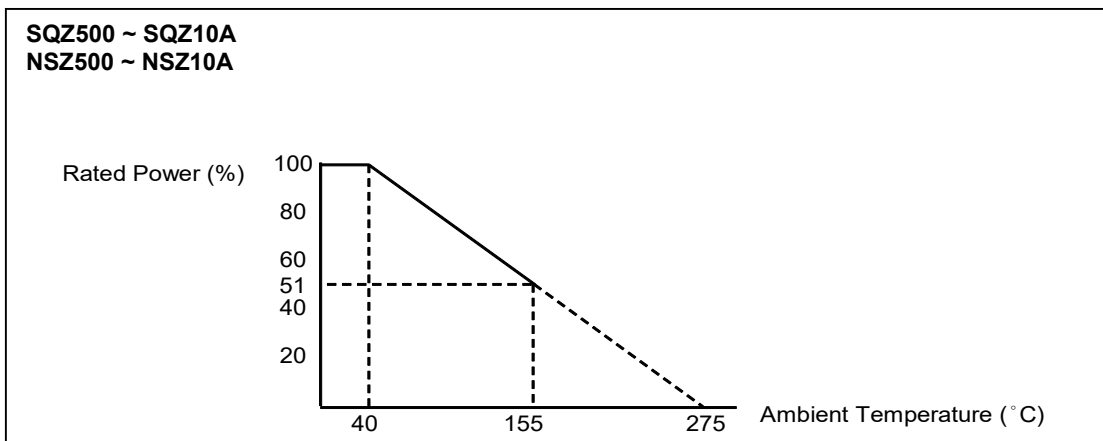
100R = 100 Ω , 10K = 10,000 Ω , 1M = 1,000,000 Ω

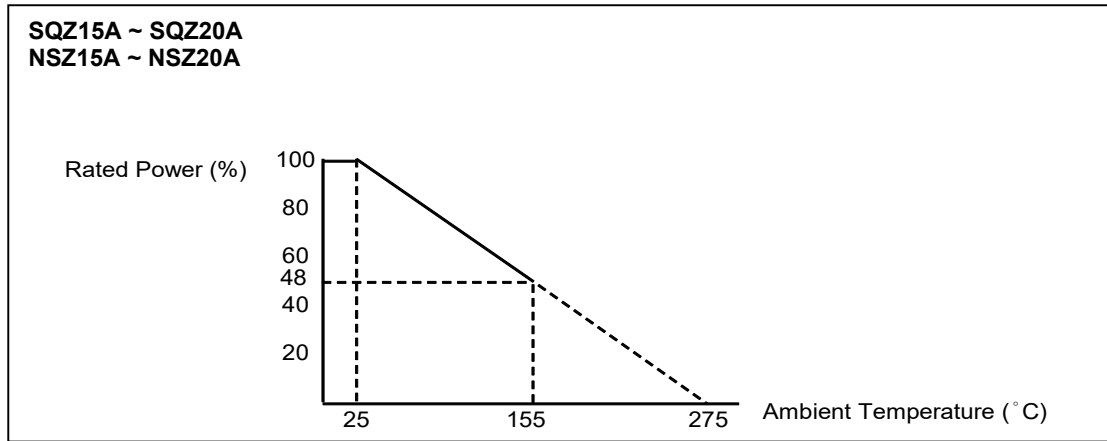
DIMENSIONS



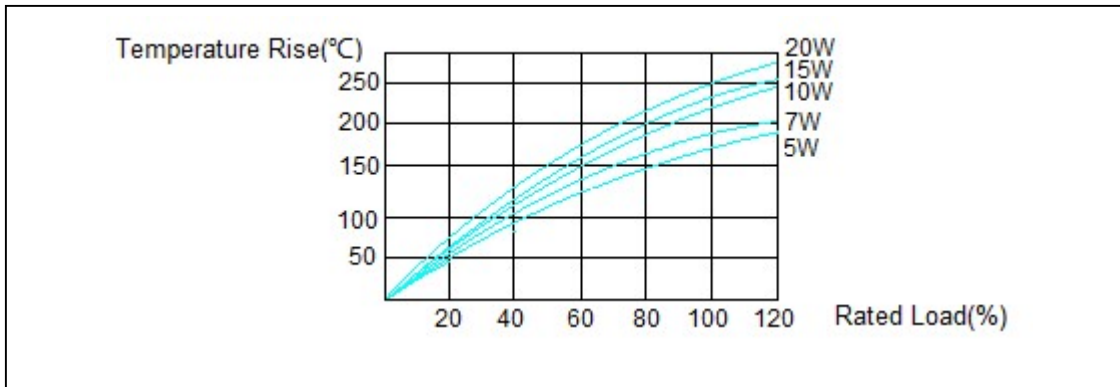
TYPE		DIMENSIONS										Unit: mm
Normal	Non-Inductive	L	H	W	S	H1	H2	P1	P2	P3	P4	
SQZ500	NSZ500	28.0±1.5	10.0±1.0	10.0±1.0	15.0±1.5	25.0±1.5	10.0±1.0	4.0±0.2	2.0±0.2	5.0±0.2	1.5±0.2	
SQZ700	NSZ700	35.0±1.5	10.0±1.0	10.0±1.0	22.5±1.5	25.0±1.5	10.0±1.0	4.0±0.2	2.0±0.2	5.0±0.2	1.5±0.2	
SQZ10A	NSZ10A	48.0±1.5	9.5±1.0	10.0±1.0	32.0±1.5	25.0±1.5	10.5±1.0	4.0±0.2	2.0±0.2	5.0±0.2	1.5±0.2	
SQZ15A	NSZ15A	48.0±1.5	12.5±1.0	13.0±1.0	32.0±1.5	35.0±1.5	15.0±1.5	7.0±0.2	4.0±0.2	10.0±0.5	3.0±0.2	
SQZ20A	NSZ20A	63.0±1.5	12.5±1.0	12.5±1.0	42.5±1.5	35.0±1.5	15.0±1.5	7.0±0.2	4.0±0.2	10.0±0.5	3.0±0.2	

DERATING CURVE





TEMPERATURE CURVE



ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	SQZ500	SQZ700	SQZ10A	SQZ15A	SQZ20A
Power Rating at 25 °C				15W	20W
Power Rating at 40 °C	5W	7W	10W		
Maximum Working Voltage	350V	500V	500V	500V	500V
Maximum Overload Voltage	700V	1000V	1000V	1000V	1000V
Voltage Proof on Insulation	700V	1000V	1000V	1000V	1000V
Resistance Range(Wirewound)	0.36Ω ~ 200Ω	0.36Ω ~ 200Ω	0.56Ω ~ 430Ω	1Ω ~ 560Ω	1.5Ω ~ 750Ω
Resistance Range(Film)	220Ω ~ 1MΩ	300Ω ~ 1MΩ	470Ω ~ 1MΩ	750Ω ~ 1MΩ	820Ω ~ 1MΩ
Operating Temp. Range	- 55°C to +155°C				
Temperature Coefficient	Wirewound :±100ppm/°C , ±300ppm/°C, Film: ±300ppm/°C				

Note: For resistance value out of above range is by request.

Cement Resistors

SQZ / NSZ

CHARACTERISTICS	NSZ500	NSZ700	NSZ10A	NSZ15A	NSZ20A
Power Rating at 25 °C				15W	20W
Power Rating at 40 °C	5W	7W	10W		
Voltage Proof on Insulation	700V	1000V	1000V	1000V	1000V
Resistance Range(Wirewound)	0.1Ω ~ 10Ω	0.1Ω ~ 10Ω	0.1Ω ~ 20Ω	0.1Ω ~ 20Ω	0.1Ω ~ 30Ω
Maximum Working Voltage	$\sqrt{(P \times R)}$				
Operating Temp. Range	- 55°C to +155°C				
Temperature Coefficient	±300ppm/°C				

Note: For resistance value out of above range is by request.

TEST AND REQUIREMENTS

TEST	TEST METHOD	PROCEDURE	APPRAISE
Short Time Overload	IEC 60115-1 4.13	2.5 times RCWV for 5 sec.(Not more than maximum overload voltage)	±2.0%+0.05Ω
Voltage Proof on Insulation	IEC 60115-1 4.7	In V-Block for 60 sec. test voltage as above table	No Breakdown
Temperature Coefficient	IEC 60115-1 4.8	Between -55°C to +155°C	By Type
Insulation Resistance	IEC 60115-1 4.6	In V-Block for 60 sec.	>1,000MΩ
Solderability	IEC 60115-1 4.17	245±5°C for 3±0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5±0.5 Min. with ultrasonic	No deterioration of coatings and markings
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec.off)	±2.0%+0.05Ω
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C,90-95% RH for 56 days, loaded with 0.1 times RCWV	±5.0%+0.05Ω
Endurance at 70°C	IEC 60115-1 4.25	70±2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on,0.5 Hr. off)	±5.0%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	➔ -55°C ➔ Room Temp. ➔ +155°C Room Temp.(5 cycles)	±2.0%+0.05Ω
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±1.0%+0.05Ω

Note:

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

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

or max. working voltage whichever is less

Where

V=Continuous rated DC or
AC (rms) working voltage (V)

P=Rated power (W)

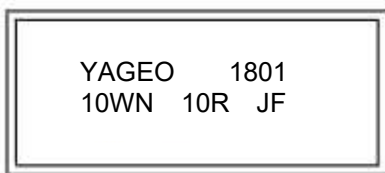
R=Resistance value (Ω)

BULK PACKING

Unit: Piece

Normal	Non-Inductive	PACKAGE	Quantity
SQZ500	NSZ500	Bulk	150
SQZ700	NSZ700	Bulk	150
SQZ10A	NSZ10A	Bulk	150
SQZ15A	NSZ15A	Bulk	50
SQZ20A	NSZ20A	Bulk	50

MARKING



Example:

- YAGEO = Brand
- 1801 = Date code
- 10W = Power rating
- N = Non-inductive
- 10R = Resistance
- J = Tolerance
- F = Fiberglass

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 2	Mar.06, 2024	-	- Add marking for NSZ series.
Version 1	Aug.31, 2023	-	- Revised LEGAL DISCLAIMER
Version 0	Aug.2, 2021	-	- First issue of this specification

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