

To: TTI Inc.

Date: 29.04.2026

Dear [Name, Title, Organization]

**Product Discontinuation Notice for NTC Thermistor (Chip type) products and certain ZNR (Metal Oxide Varistor) products**

We sincerely appreciate your continued patronage and interest in our products.

This letter serves as formal notice that it has been decided to discontinue the manufacture and sale of NTC Thermistor (Chip type) products and certain ZNR (Metal Oxide Varistor) products (as defined in “Discontinued Products” below), (collectively, the “Products”).

A management decision has been made to withdraw from the business of the Products and we hereby notify you of the product discontinuation.

We would like to inform you that our final order acceptance date and final shipment date for the Products are as follows. We kindly request that you notify Panasonic Industry Europe GmbH, by the deadline specified below, on a non-binding basis, of the total quantities of the Products (including service parts) that you request to supply from October 1st, 2026 until the Final shipment date (defined below).

Please note that, if your requested total quantities exceed our supply capacity of the Products, we would like to discuss quantity adjustments separately.

We sincerely appreciate your long-term support of our Products and ask for your understanding of this decision.

**【Detail】**

**1. Discontinued Products**

- Certain ZNR (Metal Oxide Varistor) products
- NTC Thermistor (Chip type) products

\*All Panasonic Parts Numbers of the above Discontinued Products are described in the attached Discontinued Products’ Parts Numbers List.

**2. Schedule**

- Deadline for providing written notification specifying total quantities of the Products you request Panasonic Industry Europe GmbH to supply from October 1st, 2026 to March 30, 2029 (the Final shipment date as defined below): **September 30, 2026.**

You are encouraged to promptly assess your anticipated requirements to ensure adequate supply prior to discontinuation.

- Supply quantities up to September 30th, 2026, will be provided subject to existing agreements, availability, and order acceptance by Panasonic Industry Europe GmbH.

-Final order acceptance date: **March 31st, 2028**

-Final shipment date: **March 30th, 2029**

**3. Request for Submission of Confirmation Form**

We kindly request that you submit the following confirmation form to Panasonic Industry Europe GmbH within two months from the issuance date of this notice.

Note, failing to return the below form does not change the Order Schedule, outlined in Paragraph 2, nor will the Final order acceptance date be changed absent any further written communication from Panasonic Industry Europe GmbH.

**4. Additional**

All last-time-buy orders are subject to acceptance by Panasonic Industry Europe GmbH, availability of materials, supply capacity, and compliance with applicable ordering requirements under existing agreements. Orders submitted after the above Final order acceptance date will not be accepted.

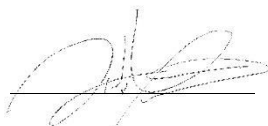
This notice expresses our intention to discontinue the Products and does not create additional contractual obligations for Panasonic Industry Europe GmbH or Panasonic Industry Co., Ltd..

Confirmation: Your reply	
Your production status : <input type="checkbox"/> in production <input type="checkbox"/> EOL (repair only)	
Signature _____	Date:
Department :	
Title :	
Name :	

Sincerely,

*Hiroki HIRAYAMA*

Hiroki Hirayama  
Business Unit Director  
Resistor & Ceramic Business Unit  
Device Solutions Business Division  
Panasonic Industry Co., Ltd.



Atsushi Yamamoto  
General Manager  
Device Solutions Business Division  
Overseas Sales Management  
Division  
Panasonic Industry Co., Ltd.



Satoshi Ogano  
Division Director  
Device Solution  
Business Management  
Panasonic Industry Europe GmbH

[Need to attach "Subject Parts Numbers List" in this letter]

Customer's name

※Please convert this PPT to PDF when submitting it to customers.

# EOL Notice for Varistor (ZNR Surge Absorbers) Applied Products

**March 2026**

**Panasonic Industry Co., Ltd.  
Device Solutions Business Division  
Ceramic BU / Sales Department**

# Overview and Sales Status of ZNR Surge Absorber, Applied Products

We have long dedicated ourselves to the development, production, and sales of zinc-oxide varistors (ZNR surge absorbers, Derivative products), striving to create value for our customers. However, due to significant changes in market conditions, it has become difficult to continue the business. Therefore, we would like to inform you of our plan to discontinue production and sales.

1971 Development and mass production of Zinc-oxide varistors.  
1976 → 1992 → 2013  
Development of varistor ceramic materials  
↳ Achieved higher surge capability and miniaturization

Developing applied products by leveraging fundamental technologies

Expecting to expand the business by offering customizable products

**The market is not expanding**

Producing a wide variety of products in small quantities, with many custom variants  
Increasing number of irregular orders

Requires significant development and support resources  
Difficult to standardize specifications and manufacturing

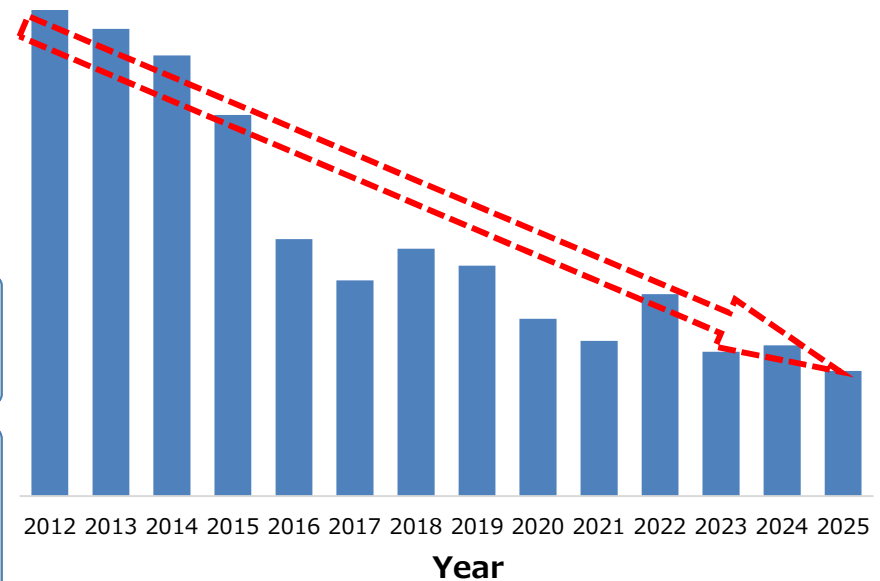
Growing risks related to long-term component availability (e.g., EOL of low-volume parts, material supplier bankruptcy)

High customizability makes it difficult to secure design resources and ensure long-term component supply.

**Reduction in sales volume  
Declining profitability and difficulty in sustaining the business**

Resources, aging equipment, and supply chain maintenance

## Sales History



**Production and sales will be in EOL phase in March 2026 onward**

# EOL Notice for ZNR Surge Absorbers / Applied Products

Part numbers beginning with “ERZ” will be EOL  
(with some exceptions)









Product	ZNR Surge Absorbers , Derivative Products
Part Number	1 : SC Type 2 : E Type 3 : CK Type 4 : P Type 5 : J Type 6 : G Type 7 : Surge Absorber Units 8 : For thyristor protection : E Type/J Type
Schedule	①Deadline for notifying the total requested supply quantity (Total supply quantity from Oct.1, 2026, until the final shipment date): September 30, 2026 ②Final Order Acceptance Date : March 31, 2028 ③Final Shipment Date : March 30, 2029
Remarks	All such custom version part numbers will follow the same EOL schedule

\*D-type: C series, M series, and SMD-type: SF series and CF series are already informed as EOL products.  
If you are still using any of these products, they will be discontinued according to the above schedule.

We sincerely appreciate your understanding and cooperation.

# EOL Notice for ZNR Surge Absorbers / Applied Products

【Product】 Varistor (ZNR Surge Absorbers) Derivative products

		Type / Series		Part Numbers
1	SC Type			ERZVS□□□□□□
2	E Type			ERZC□□EK□□□(Y)
3	CK Type			ERZC□□CK□□□
4	P Type			ERZA□□PK□□□
5	J Type			ERZA□□JK□□□
6	G Type			ERZA□□GS□□□ ERZA□□GK□□□
7	Surge absorber units			ERZA□□□□□□
8	For thyristor protection	E Type		ERZC□□EK□□□P
		J Type		ERZU□□JP□□□

# **Panasonic**

INDUSTRY

Customer's name

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# EOL Notice for Varistor (ZNR Surge Absorbers) D Type, SMD/VF Type

**March 2026**

**Panasonic Industry Co., Ltd.  
Device Solutions Business Division  
Ceramic BU / Sales Department**

# Overview and Sales Status of ZNR Surge Absorber

We have long dedicated ourselves to the development, production, and sales of zinc-oxide varistors (ZNR surge absorbers), striving to create value for our customers. However, due to significant changes in market conditions, it has become difficult to continue the business. Therefore, we would like to inform you of our plan to discontinue production and sales.

1971 Developed and production of zinc-oxide varistors

1976 → 1992 → 2013  
C,M series V series E series

Developed ceramic material for varistor  
↳ Improvement high performance and small size

Launched product first in the market

- The market focus shifted from performance to cost
- New overseas manufacturers came up

Declining market share due to severe competition.  
Product improvement including materials has stagnated.

Increasing commoditization of products.  
Difficulty maintaining development resources, leading to reduced creating value

Reduction in sales volume  
Declining profitability and difficulty in sustaining the business

Production and sales will be in EOL phase in March 2026 onward

## Progress of Interchangeability from V Series to E Series

Voltage	V series	E series
200~1100V	φ20 →	φ14
18~150V	φ20 →	N/A
18~150V	φ 5,7 →	N/A

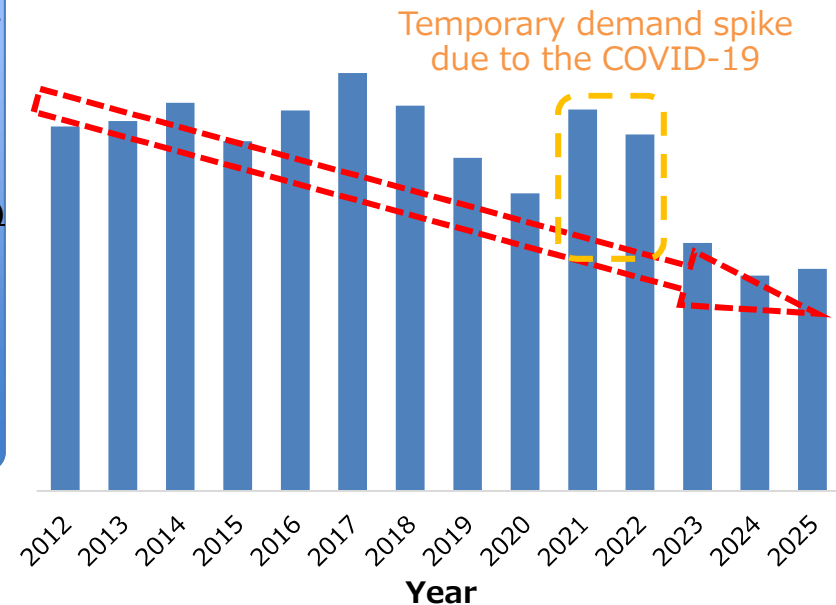
E Series enables complete interchangeability for low-voltage / small-size products.

### Performance Capability (Surge 510V)

	10kA (spec)	11kA	12kA
Panasonic	Pass	Pass	Pass
Competitors	Pass	Pass	NG

Customers need cost more than performance  
→ No strong market requirement

## Sales History



# EOL Notice for ZNR Surge Absorbers / D Type and SMD Type

Part numbers beginning with “ERZ” will be EOL  
(with some exceptions)

Product	ZNR Surge Absorbers ※ SMD-type HF series is excluded
Part Number	1 : D type (E series, E-S1 series, V series, C series*, M series*) 2 : SMD type (VF series, SF series*, CF series*)
Schedule	①Deadline for notifying the total requested supply quantity (Total supply quantity from Oct.1, 2026, until the final shipment date): September 30, 2026 ②Final Order Acceptance Date : March 31, 2028 ③Final Shipment Date : March 30, 2029
Remarks	All such custom version part numbers will follow the same EOL schedule

\*D-type: C series, M series, and SMD-type: SF series and CF series are already informed as EOL products.  
If you are still using any of these products, they will be discontinued according to the above schedule.

We sincerely appreciate your understanding and cooperation.

# EOL Notice for ZNR Surge Absorbers / D Type and SMD Type

【Product】 Varistor (ZNR Surge Absorbers) D type

Type / Series		Part Number
D type	E series	 ERZE□□□□□□□□
	E-S1 series	
	V series	
SMD type	VF series	ERZVF□□□□□

# **Panasonic**

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Parts
ERZE11A331
ERZE11A391
ERZE14A102
ERZE14A271
ERZV05D470
ERZV07D391
ERZV07D820
ERZV10D471CS
ERZV10D621
ERZV10D821
ERZV14D182CS
ERZV14D221
ERZV14D241
ERZV14D330
ERZV14D331
ERZV14D390
ERZV14D431
ERZV14D511
ERZV20D751
ERZV20D820
ERZVGED471
ERZVF2M121
ERZVF2M820
ERZA20PS371
ERZV05D470
ERZV10D470
ERZV14D271
ERZV14D471
ERZVA5D220
ERZVF2M820