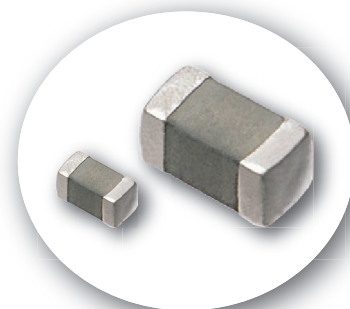


Automotive ESD · Surge components

Chip type multilayer varistor EZJP series

P/N : EZJP□□□□□□M



Features

- Excellent ESD suppression due to original advanced material technology
- Having no polarity (bipolar) facilitated replacing Zener Diodes.
- Lead-free plating terminal electrodes enabling great solderability
- High operation temperature up to 150 °C
- ISO / TS16949
- RoHS compliant

Zener diode alternatives and replacement advantages

- Small size / lightweight ⇒ Significantly reduces mounting area and weight, contributing to smaller and lighter ECUs
- High ESD / High Surge Immunity ⇒ Improves ESD/surge resistance and contributes to ECU durability and reliability
- Low cost ⇒ Maintaining cost competitiveness into the future and contributing to lower ECU costs
- High reliability ⇒ Durability that exceeds automotive requirements and contributes to long-term reliability of ECUs.
- Shortened delivery lead time ⇒ Short production lead time contributes to increased efficiency until delivery

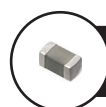
[ESD Countermeasures]

Zener diode
0.2 W

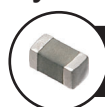
[ESD/surge countermeasures]

Zener diode
1 W

↓ [Chip type multilayer varistor] ↓



0402 inch



0603 inch

Mounting area 3.9 mm²

85 % reduction

Multilayer Varistor
0.6 mm²

Mounting area 6.4 mm²

74 % reduction

Multilayer Varistor
1.64 mm²

Parts weight 4.8 mg ⇒ 1.2 mg

75 % reduction

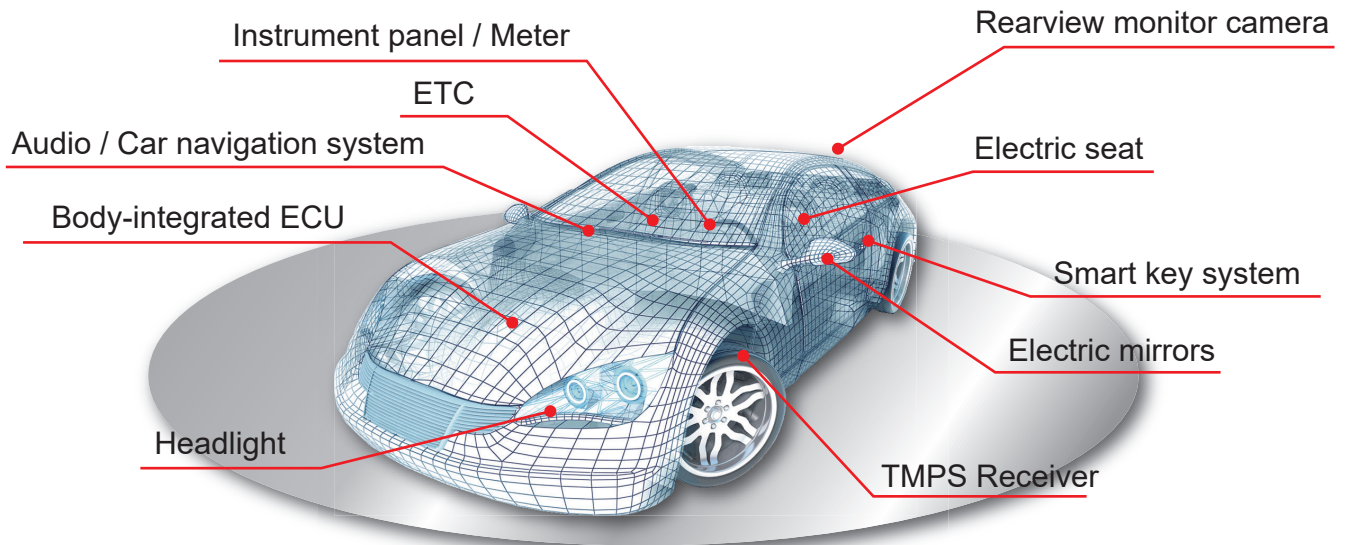


Parts weight 14.5 mg ⇒ 5.2 mg

64 % reduction



Examples of use of various ECUs



Example of substitution from Zener diode

<p>[Conventional configuration]</p> <p>ZD : 2.5x 1.25 mm MLCC : 1.6 x 0.8 mm</p> <p>Symbol: </p>	<p>[Replacement part No.]</p> <p>Multilayer varistor : 1.6 x 0.8 mm</p> <p>Symbol: </p> <p>P/N : EZJP1V270EM</p>
<p>[Conventional configuration]</p> <p>ZD : 2.0 x 2.1 mm</p> <p>Symbol: </p>	<p>[Replacement part No.]</p> <p>Multilayer varistor : 1.0 x 0.5 mm</p> <p>Symbol: 2 pcs.</p> <p>P/N : EZJP0V270EM</p>

Automotive lineup

Conventional countermeasure parts	Size / inch (mm)	Part number	Maximum allowable voltage(DC) (V)	Varistor voltage @1mA	Capacitance @1MHz (pF) max.
<p>Zener diode 0.2 W</p> <p>(2.5 x 1.25mm)</p> <p>Sensor</p> <ul style="list-style-type: none"> • I/O data line (ECU-ECU) • Communication line (CAN/LIN) 	EIA0402 / 1005	EZJP0V120JM	7.5	12	220
		EZJP0V180HM	11	18	150
		EZJP0V220HM	13	22	150
		EZJP0V270GM	18	27	100
		EZJP0V270EM	18	27	47
		EZJP0V270RM	18	27	20
		EZJP0V270BM	18	27	10
		EZJP0V330GM	25	33	100
		EZJP0V420WM	30	42	56
		EZJP0V650DM	40	65	27
<p>Zener diode 1W</p> <p>(3.5 x 1.6mm)</p>	EIA0603 / 1608	EZJP1V120KM	7.5	12	330
		EZJP1V180JM	11	18	220
		EZJP1V220JM	13	22	220
		EZJP1V270GM	18	27	100
		EZJP1V270EM	18	27	47
		EZJP1V270RM	18	27	20
		EZJP1V330GM	25	33	100
		EZJP1V420FM	30	42	68
EZJP1V650DM	40	65	27		

Operating temperature range: -55 to +150°C