

**3W**

Convection cooled

DC-DC converters

The IZ series is housed in a SIP8 PCB mount plastic case. Featuring a 2:1 input voltage range of 4.5 to 9VDC, 9 to 18VDC, 18 to 36VDC or 36 to 72VDC with regulated single outputs of 3.3, 5, 12 & 15VDC and dual outputs  $\pm 5$ ,  $\pm 12$  or  $\pm 15$ VDC.

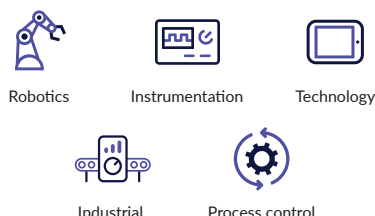
The 3W IZ series has 1.6kVDC isolation between input and output. Remote On/Off and short circuit protection are standard. The operating temperature range is from -40°C to +100°C, with derating above +70°C.



## Features

- ▶ Regulated single & dual outputs
- ▶ 2:1 input range
- ▶ Single outputs 3.3 to 15VDC
- ▶ Dual outputs  $\pm 5.0$  to  $\pm 15$ VDC
- ▶ SIP8 package
- ▶ 1.6kVDC isolation
- ▶ Remote On/Off
- ▶ -40°C to +100°C operating temperature
- ▶ Full power to +70°C
- ▶ 3 year warranty

## Applications



## Dimensions

21.85 x 11.10 x 9.20mm (0.86" x 0.36" x 0.44")

## More resources

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## Models & ratings

| Model number <sup>(1)</sup> | Input voltage | No load input current <sup>(2)</sup> | Output voltage | Output current | Efficiency | Maximum capacitive load |
|-----------------------------|---------------|--------------------------------------|----------------|----------------|------------|-------------------------|
| IZ0503SA                    | 4.5-9.0VDC    | 65 mA                                | 3.3VDC         | 700mA          | 74%        | 2200 $\mu$ F            |
| IZ0505SA                    |               | 70 mA                                | 5.0VDC         | 600mA          | 76%        | 1000 $\mu$ F            |
| IZ0512SA                    |               | 75 mA                                | 12.0VDC        | 250mA          | 82%        | 470 $\mu$ F             |
| IZ0515SA                    |               | 75 mA                                | 15.0VDC        | 200mA          | 82%        | 220 $\mu$ F             |
| IZ0505S                     |               | 90 mA                                | $\pm 5.0$ VDC  | $\pm 300$ mA   | 77%        | $\pm 470$ $\mu$ F       |
| IZ0512S                     |               | 90 mA                                | $\pm 12.0$ VDC | $\pm 125$ mA   | 81%        | $\pm 220$ $\mu$ F       |
| IZ0515S                     |               | 90 mA                                | $\pm 15.0$ VDC | $\pm 100$ mA   | 82%        | $\pm 100$ $\mu$ F       |

Continued on page 2

### Notes:

1. Minimum load of 25% required to meet load regulation & ripple & noise specifications.
2. Measured at nominal input voltage.
3. Operation at no load will not damage the part but it may not meet all specifications.
4. When one output is set to 100% load and the other varies between 25-100% load.
5. Pin pitch tolerance:  $\pm 0.35$  ( $\pm 0.014$ )
6. Case tolerance:  $\pm 0.5$  ( $\pm 0.02$ )
7. Weight: SIP 3.9g (0.009lbs)
8. All dimensions in mm (inches)



## Models & ratings

| Model number <sup>(1)</sup> | Input voltage | No load input current <sup>(2)</sup> | Output voltage | Output current | Efficiency | Maximum capacitive load |
|-----------------------------|---------------|--------------------------------------|----------------|----------------|------------|-------------------------|
| IZ1205SA                    | 9.0-18.0VDC   | 35mA                                 | 5.0VDC         | 600mA          | 81%        | 1000μF                  |
| IZ1212SA                    |               | 35mA                                 | 12.0VDC        | 250mA          | 84%        | 470μF                   |
| IZ1215SA                    |               | 35mA                                 | 15.0VDC        | 200mA          | 84%        | 220μF                   |
| IZ1205S                     |               | 45mA                                 | ±5.0VDC        | ±300mA         | 80%        | ±470μF                  |
| IZ1212S                     |               | 45mA                                 | ±12.0VDC       | ±125mA         | 83%        | ±220μF                  |
| IZ1215S                     |               | 45mA                                 | ±15.0VDC       | ±100mA         | 82%        | ±100μF                  |
| IZ2403SA                    | 18.0-36.0VDC  | 15mA                                 | 3.3VDC         | 700mA          | 74%        | 2200μF                  |
| IZ2405SA                    |               | 15mA                                 | 5.0VDC         | 600mA          | 79%        | 1000μF                  |
| IZ2412SA                    |               | 20mA                                 | 12.0VDC        | 250mA          | 82%        | 470μF                   |
| IZ2415SA                    |               | 20mA                                 | 15.0VDC        | 200mA          | 84%        | 220μF                   |
| IZ2405S                     |               | 20mA                                 | ±5.0VDC        | ±300mA         | 80%        | ±470μF                  |
| IZ2412S                     |               | 20mA                                 | ±12.0VDC       | ±125mA         | 83%        | ±220μF                  |
| IZ2415S                     |               | 20mA                                 | ±15.0VDC       | ±100mA         | 83%        | ±100μF                  |
| IZ4803SA                    | 36.0-72.0VDC  | 10mA                                 | 3.3VDC         | 700mA          | 75%        | 2200μF                  |
| IZ4805SA                    |               | 10mA                                 | 5.0VDC         | 600mA          | 78%        | 1000μF                  |
| IZ4812SA                    |               | 15mA                                 | 12.0VDC        | 250mA          | 81%        | 470μF                   |
| IZ4815SA                    |               | 15mA                                 | 15.0VDC        | 200mA          | 81%        | 220μF                   |
| IZ4805S                     |               | 35mA                                 | ±5.0VDC        | ±300mA         | 78%        | ±470μF                  |
| IZ4812S                     |               | 20mA                                 | ±12.0VDC       | ±125mA         | 80%        | ±220μF                  |
| IZ4815S                     |               | 20mA                                 | ±15.0VDC       | ±100mA         | 81%        | ±100μF                  |

### Notes:

- Minimum load of 25% required to meet load regulation & ripple & noise specifications.
- Measured at nominal input voltage.
- Operation at no load will not damage the part but it may not meet all specifications.
- When one output is set to 100% load and the other varies between 25-100% load.
- Pin pitch tolerance: ±0.35 (±0.014)
- Case tolerance: ±0.5 (±0.02)
- Weight: SIP 3.9g (0.009lbs)
- All dimensions in mm (inches)

## Input

| Characteristic                 | Minimum   | Typical | Maximum | Units    | Notes & conditions                             |
|--------------------------------|-----------|---------|---------|----------|------------------------------------------------|
| Input voltage range            |           | ±10     |         | %        |                                                |
| Input reflected ripple current |           | 35      |         | mA pk-pk | 12μH inductor and 47μF capacitor, 5Hz to 20MHz |
| Input filter                   | Capacitor |         |         |          |                                                |

## Output

| Characteristic           | Minimum                                                                                                                                                | Typical | Maximum | Units    | Notes & conditions       |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|----------|--------------------------|
| Output voltage           | See models & ratings table                                                                                                                             |         |         |          |                          |
| Minimum load             | 0                                                                                                                                                      |         |         | %        | No minimum load required |
| Line regulation          |                                                                                                                                                        |         | ±0.5    | %        |                          |
| Load regulation          |                                                                                                                                                        |         | ±1      |          | 25-100% load change      |
| Setpoint accuracy        |                                                                                                                                                        |         | ±1      | %        |                          |
| Ripple & noise           |                                                                                                                                                        | 75      |         | mV pk-pk | 20 MHz bandwidth         |
| Short circuit protection | Continuous with auto recover (foldback)                                                                                                                |         |         |          |                          |
| Cross regulation         |                                                                                                                                                        | ±5      |         | %        | Dual output models.      |
| Temperature coefficient  |                                                                                                                                                        | ±5      |         |          |                          |
| Remote on/off            | Module "on" if pin 3 is open circuit. Module "off" by driving 3-6mA into pin 3. Maximum applied voltage 9.7VDC relative to -Vin. See application note. |         |         |          |                          |

## General

| Characteristic            | Minimum                    | Typical         | Maximum | Units | Notes & conditions      |
|---------------------------|----------------------------|-----------------|---------|-------|-------------------------|
| Efficiency                | See models & ratings table |                 |         |       |                         |
| Isolation voltage         |                            | 1600            |         | VDC   |                         |
| Isolation resistance      |                            | 10 <sup>9</sup> |         | Ω     |                         |
| Isolation capacitance     |                            | 680             |         | pF    |                         |
| Isolation resistance      |                            | 10 <sup>9</sup> |         | Ω     |                         |
| Switching frequency       |                            | 100-650         |         | kHz   |                         |
| Mean time between failure |                            | >1.34           |         | Mhrs  | MIL-HDBK-217F, +25°C GB |

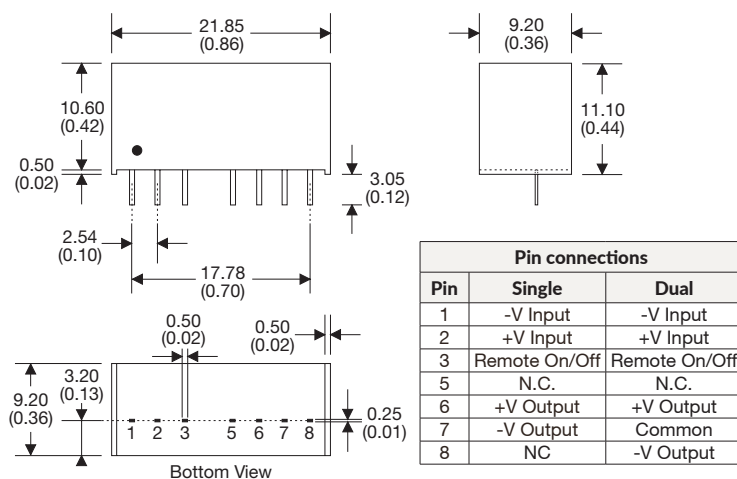
## Environmental

| Characteristic        | Minimum           | Typical | Maximum | Units | Notes & conditions                                  |
|-----------------------|-------------------|---------|---------|-------|-----------------------------------------------------|
| Operating temperature | -40               |         | +100    | °C    | Derate from 100% load at +70°C to 0% load at +100°C |
| Storage temperature   | -40               |         | +125    | °C    |                                                     |
| Case temperature      |                   |         | +100    | °C    |                                                     |
| Cooling               | Convection cooled |         |         |       |                                                     |

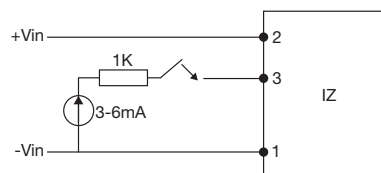
## Safety approvals

| Certification | Standard                                       | Notes & conditions |
|---------------|------------------------------------------------|--------------------|
| UL            | UL60950-1, CAN/CSA C22.2 No.60950-1, UL62368-1 |                    |
| CE            | Meets all applicable directives                |                    |
| UKCA          | Meets all applicable legislation               |                    |

## Mechanical details



## Application notes



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