

# 3 Watts

## IZ Series



- Regulated Single & Dual Output
- Wide 2:1 Input Range
- SIP Package
- 1600 VDC Isolation
- Optional Metal Case
- Continuous Short Circuit Protection
- MTBF >2.4 MHrs

### Specification

#### Input

Input Voltage Range	<ul style="list-style-type: none"> <li>• 5 V models: 4.5 - 9.0 V</li> <li>• 12 V models: 9.0 - 18.0 V</li> <li>• 24 V models: 18.0 - 36.0 V</li> <li>• 48 V models: 36.0 - 72.0 V</li> </ul>
Input Reflected Ripple	<ul style="list-style-type: none"> <li>• 35 mA pk-pk through 12 <math>\mu</math>H inductor</li> <li>• 5 Hz to 20 MHz</li> </ul>
Input Current	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Input Filter	<ul style="list-style-type: none"> <li>• Capacitor</li> </ul>

#### Output

Output Voltage	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Line Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 0.5\%</math> max</li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 1.0\%</math> max from 25-100% load</li> </ul>
Setpoint Accuracy	<ul style="list-style-type: none"> <li>• <math>\pm 1\%</math> max</li> </ul>
Start Up Rise Time	<ul style="list-style-type: none"> <li>• 20 ms typical</li> </ul>
Ripple & Noise	<ul style="list-style-type: none"> <li>• 75 mV pk-pk max 20 MHz BW</li> </ul>
Temperature Coefficient	<ul style="list-style-type: none"> <li>• 0.02%/°C</li> </ul>
Short Circuit Protection	<ul style="list-style-type: none"> <li>• Continuous with auto recovery</li> </ul>
Cross Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 5\%</math> on dual output models</li> </ul>
Transient Response	<ul style="list-style-type: none"> <li>• <math>\pm 3\%</math> deviation recovering to &lt;1% within 300 <math>\mu</math>s for 25% load change</li> </ul>
Maximum Capacitive Load	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Remote On/Off	<ul style="list-style-type: none"> <li>• Applying 5 V via 1 k<math>\Omega</math> current limiting resistor (with respect to -V Input) turns output off</li> </ul>

#### General

Efficiency	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Isolation Voltage	<ul style="list-style-type: none"> <li>• 1600 VDC,</li> </ul>
Isolation Resistance	<ul style="list-style-type: none"> <li>• <math>10^9 \Omega</math></li> </ul>
Isolation Capacitance	<ul style="list-style-type: none"> <li>• 680 pF typical</li> </ul>
Switching Frequency	<ul style="list-style-type: none"> <li>• 100-650 kHz</li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• &gt;2.4 MHrs to MIL-STD-217F</li> </ul>

#### Physical

Case Material	<ul style="list-style-type: none"> <li>• Non-conductive black plastic (UL94V-0 rated), Optional metal: nickel coated copper (see note 2)</li> </ul>
Pin Material	<ul style="list-style-type: none"> <li>• C5191R-H solder coated</li> </ul>
Potting Material	<ul style="list-style-type: none"> <li>• Epoxy (UL94V-0 rated)</li> </ul>
Lead Soldering Temperature	<ul style="list-style-type: none"> <li>• 260 °C 1.5 mm from case for 10 s</li> </ul>

#### Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• -40 °C to +70 °C, derate from 100% load at 70 °C to 0% load at 100 °C</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -40 °C to +125 °C</li> </ul>
Case Temperature	<ul style="list-style-type: none"> <li>• 100 °C max</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Convection-cooled</li> </ul>
Humidity	<ul style="list-style-type: none"> <li>• 95% RH, non condensing</li> </ul>

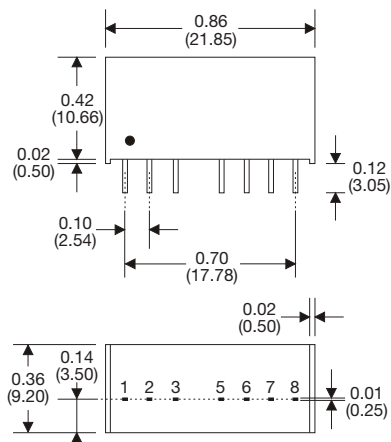
Input Voltage	No Load Input Current <sup>(1)</sup>	Full Load Input Current <sup>(1)</sup>	Output Voltage	Output Current	Efficiency	Max Capacitive Load	Model Number <sup>(2)</sup>
4.5-9.0 V	65 mA	640 mA	3.3 V	700 mA	74%	2000 µF	IZ0503SA
	70 mA	800 mA	5.0 V	600 mA	76%	1000 µF	IZ0505SA
	75 mA	750 mA	12.0 V	250 mA	82%	470 µF	IZ0512SA
	75 mA	750 mA	15.0 V	200 mA	82%	220 µF	IZ0515SA
	90 mA	800 mA	±5.0 V	±300 mA	77%	±470 µF	IZ0505S
	90 mA	760 mA	±12.0 V	±125 mA	81%	±220 µF	IZ0512S
	90 mA	750 mA	±15.0 V	±100 mA	82%	±100 µF	IZ0515S
9.0-18.0 V	25 mA	260 mA	3.3 V	700 mA	76%	2000 µF	IZ1203SA
	15 mA	320 mA	5.0 V	600 mA	81%	1000 µF	IZ1205SA
	35 mA	305 mA	12.0 V	250 mA	84%	470 µF	IZ1212SA
	35 mA	305 mA	15.0 V	200 mA	84%	220 µF	IZ1215SA
	45 mA	320 mA	±5.0 V	±300 mA	80%	±470 µF	IZ1205S
	45 mA	308 mA	±12.0 V	±125 mA	83%	±220 µF	IZ1212S
	45 mA	312 mA	±15.0 V	±100 mA	82%	±100 µF	IZ1215S
18.0-36.0 V	15 mA	133 mA	3.3 V	700 mA	74%	2000 µF	IZ2403SA
	15 mA	160 mA	5.0 V	600 mA	79%	1000 µF	IZ2405SA
	20 mA	156 mA	12.0 V	250 mA	82%	470 µF	IZ2412SA
	20 mA	152 mA	15.0 V	200 mA	84%	220 µF	IZ2415SA
	20 mA	160 mA	±5.0 V	±300 mA	80%	±470 µF	IZ2405S
	20 mA	154 mA	±12.0 V	±125 mA	83%	±220 µF	IZ2412S
	20 mA	154 mA	±15.0 V	±100 mA	83%	±100 µF	IZ2415S
36.0-72.0 V	10 mA	66 mA	3.3 V	700 mA	75%	2000 µF	IZ4803SA
	10 mA	82 mA	5.0 V	600 mA	78%	1000 µF	IZ4805SA
	15 mA	78 mA	12.0 V	250 mA	81%	470 µF	IZ4812SA
	15 mA	78 mA	15.0 V	200 mA	81%	220 µF	IZ4815SA
	15 mA	82 mA	±5.0 V	±300 mA	78%	±470 µF	IZ4805S
	20 mA	80 mA	±12.0 V	±125 mA	80%	±220 µF	IZ4812S
	15 mA	78 mA	±15.0 V	±100 mA	81%	±100 µF	IZ4815S

### Notes

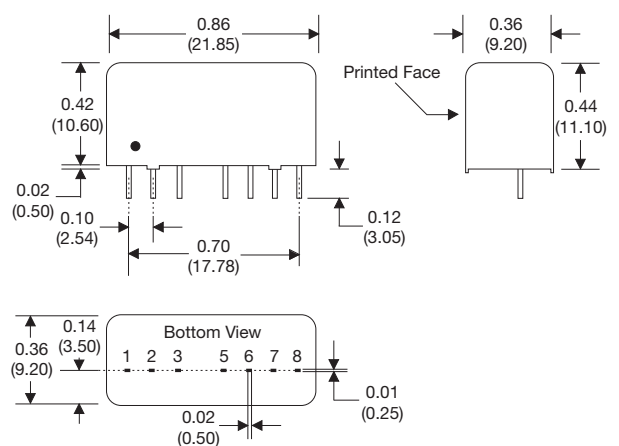
1. Measured at nominal input voltage.
2. For optional metal case, add suffix '-M' to model number.
3. Minimum load of 25% required to meet quoted specifications.

## Mechanical Details

SIP Package - Non-conductive Plastic Case



SIP Package - Nickel Coated Copper Case



Dimensions are in inches (mm)  
 Weight: Plastic case = 4.5 g  
 Metal case = 6.5 g

PIN CONNECTIONS		
Pin	Single	Dual
1	-V Input	-V Input
2	+V Input	+V Input
3	Remote On/Off	Remote On/Off
5	N.C.	N.C.
6	+V Output	+V Output
7	-V Output	Common
8	NC	-V Output