

# 3 Watt

# 8 Pin SIL Package Z8



- o Wide 2:1 Input Range
- o Regulated Output
- o 1600 VDC Isolation
- o Single & Dual Outputs
- o Continuous Short Circuit Protection
- o Plastic Case Standard
- Option Suffix „M“ for Metal Case
- o For Remote ON/OFF Control add Suffix „C“
- o High I/O-Isolation on request

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		%EFF	CAPACITIVE LOAD
			MIN. LOAD	FULL LOAD	NO LOAD	FULL LOAD		
3Z8RS5W3.3M	4.5-9 VDC	3.3 VDC	175 mA	700 mA	65 mA	640 mA	74	2200 µF
3Z8RS5W5M		5 VDC	150 mA	600 mA	70 mA	800 mA	76	1000 µF
3Z8RS5W12M		12 VDC	62.5 mA	250 mA	75 mA	750 mA	82	470 µF
3Z8RS5W15M		15 VDC	50 mA	200 mA				220 µF
3Z8RD5W5M		±5 VDC	±75 mA	±300 mA	90 mA	800 mA	77	±470 µF
3Z8RD5W12M		±12 VDC	±31.25 mA	±125 mA		760 mA	81	±220 µF
3Z8RD5W15M		±15 VDC	±25 mA	±100 mA		750 mA	82	±100 µF
3Z8RS12W3.3M	9-18 VDC	3.3 VDC	175 mA	700 mA	25 mA	260 mA	76	2200 µF
3Z8RS12W5M		5 VDC	150 mA	600 mA	15 mA	320 mA	81	1000 µF
3Z8RS12W12M		12 VDC	62.5 mA	250 mA	35 mA	305 mA	84	470 µF
3Z8RS12W15M		15 VDC	50 mA	200 mA				220 µF
3Z8RD12W5M		±5 VDC	±75 mA	±300 mA	45 mA	320 mA	80	±470 µF
3Z8RD12W12M		±12 VDC	±31.25 mA	±125 mA		308 mA	83	±220 µF
3Z8RD12W15M		±15 VDC	±25 mA	±100 mA		312 mA	82	±100 µF
3Z8RS24W3.3M	18-36 VDC	3.3 VDC	175 mA	700 mA	15 mA	133 mA	74	2200 µF
3Z8RS24W5M		5 VDC	150 mA	600 mA		160 mA	79	1000 µF
3Z8RS24W12M		12 VDC	62.5 mA	250 mA	20 mA	156 mA	82	470 µF
3Z8RS24W15M		15 VDC	50 mA	200 mA		152 mA	84	220 µF
3Z8RD24W5M		±5 VDC	±75 mA	±300 mA		160 mA	80	±470 µF
3Z8RD24W12M		±12 VDC	±31.25 mA	±125 mA	154 mA	83	±220 µF	
3Z8RD24W15M		±15 VDC	±25 mA	±100 mA			±100 µF	
3Z8RS48W3.3M	36-72 VDC	3.3 VDC	175 mA	700 mA	10 mA	66 mA	75	2200 µF
3Z8RS48W5M		5 VDC	150 mA	600 mA		82 mA	78	1000 µF
3Z8RS48W12M		12 VDC	62.5 mA	250 mA	15 mA	78 mA	81	470 µF
3Z8RS48W15M		15 VDC	50 mA	200 mA				220 µF
3Z8RD48W5M		±5 VDC	±75 mA	±300 mA		82 mA	78	±470 µF
3Z8RD48W12M		±12 VDC	±31.25 mA	±125 mA	20 mA	80 mA	80	±220 µF
3Z8RD48W15M		±15 VDC	±25 mA	±100 mA	15 mA	78 mA	81	±100 µF

**SPECIFICATIONS**

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

**INPUT SPECIFICATIONS**

Input Voltage Range	2:1	
Input Filter	Capacitor Type	
Start up Time (Nominal Vin and constant resistive Load)	20 mS	
Input Reflected Ripple Current <sup>1)</sup>	35 mA p-p	
Remote ON/OFF Control	ON OFF	open or high impedance 3.0 to 6.0 mA input current (via 1K)

**OUTPUT SPECIFICATIONS**

Voltage Accuracy	±1%
Temperature Coefficient	±0.02%/°C
Capacitive Load <sup>2)</sup>	see table
Ripple & Noise 20MHz BW <sup>3)</sup>	75 mV p-p max.
Short Circuit Protection	Indefinite (Automatic Recovery)
Line Regulation	±0.5% max.
Load Regulation (25% to 100% Load) <sup>4)</sup>	±1.0% max.
Cross Regulation (Dual Output) <sup>5)</sup>	±5%
Transient Recovery Time <sup>6)</sup>	300 µs
Transient Response Deviation <sup>6)</sup>	±3% max.

**NOTE:**

1. Measured input reflected ripple current with a simulated source inductance of 12 µH and a source capacitor Cin (47 µF, ESR<1.0 Ohms at 100 kHz).
2. Test by minimal input voltage and constant resistive load.
3. Ripple & Noise is measured with 20 MHz bandwidth.
4. Operation at no load condition will not damage the produce; however, it will not meet all specifications.
5. One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
6. Test by normal Vin and 100%-25% load, 25% step load change.

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<b>GENERAL SPECIFICATION</b>	
Efficiency	see table
I/O Isolation Voltage (tested for 3 sec.)	1600 VDC
I/O Isolation Resistance	1000 Mohms min.
I/O Isolation Capacitance	680 pF max.
Switching Frequency	100 kHz min.
Off stand by input current (nominal Vin)	3 mA max.
Operating Temperature Range	-40°C to +71°C
Storage Temperature Range	-40°C to +125°C
Case Temperature	+100°C max.
Cooling	Natural Convection
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	>2.465 Mhrs @ 25°C
Safety Standard (designed to meet)	IEC 60950
Dimensions	21.85 x 9.2 x 11.1 mm (0.86 x 0.36 x 0.44 Inches)
Case Material	Non-conductive black plastic
Pin Material	C5191R-H Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	4.8 g

<b>ABSOLUTE SPECIFICATIONS</b>		
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.		
Input Surge Voltage (100 mS) max.	5 V	-0.7 VDC to 15 VDC
	12 V	-0.7 VDC to 36 VDC
	24 V	-0.7 VDC to 50 VDC
	48 V	-0.7 VDC to 100 VDC
Models Lead Soldering Temperature (1.5 mm from case 10 sec.)		+260°C

**NOTE:**

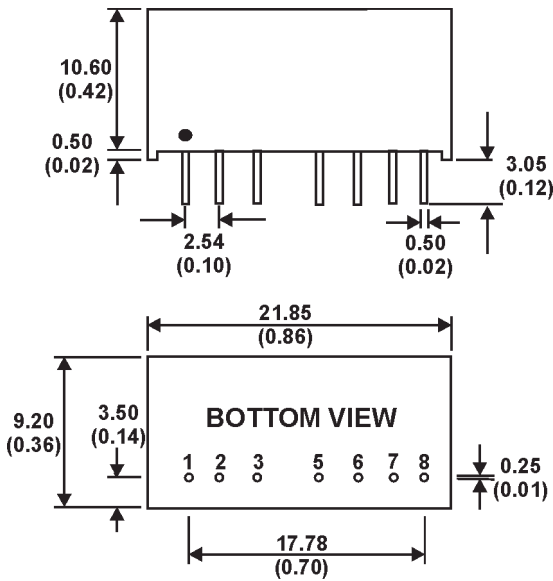
Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.  
 Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.

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**MECHANICAL SPECIFICATIONS**

CASE "Z8" (Plastic)

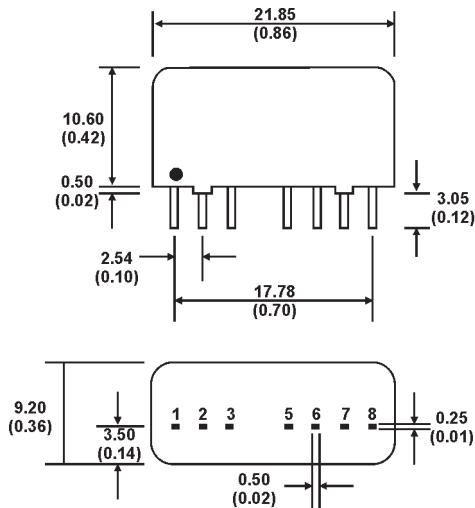


All Dimensions in mm (Inches)  
 Tolerances: Pin Diameter:  $0.5 \pm 0.05$  ( $0.02 \pm 0.002$ )  
 Pin Pitch:  $\pm 0.35$  ( $\pm 0.014$ )  
 Case:  $\pm 0.5$  ( $\pm 0.02$ )

PIN CONNECTIONS		
	Single	Dual
1	-INPUT	-INPUT
2	+INPUT	+INPUT
3	NO PIN	NOT CONNECTED
5	NO PIN	NOT CONNECTED
6	+OUTPUT	+OUTPUT
7	-OUTPUT	COMMON
8	NOT CONNECTED	-OUTPUT

PIN CONNECTIONS FOR REMOTE CONTROL		
	Single	Dual
1	-INPUT	-INPUT
2	+INPUT	+INPUT
3	REMOTE CONTROL	REMOTE CONTROL
5	NOT CONNECTED	NOT CONNECTED
6	+OUTPUT	+OUTPUT
7	-OUTPUT	COMMON
8	NOT CONNECTED	-OUTPUT

CASE "Z8" (Metal)



All Dimensions are typical in mm (inches)  
 Tolerances: Pin Diameter:  $1.0 \pm 0.05$  ( $0.04 \pm 0.002$ )  
 Pin Pitch:  $\pm 0.35$  ( $\pm 0.014$ )  
 Case:  $\pm 0.5$  ( $\pm 0.02$ )

**SPECIFICATIONS**

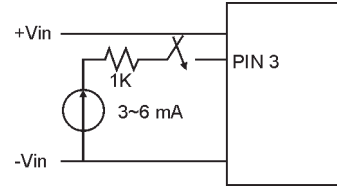
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**DIAGRAMS & APPLICATION NOTES**

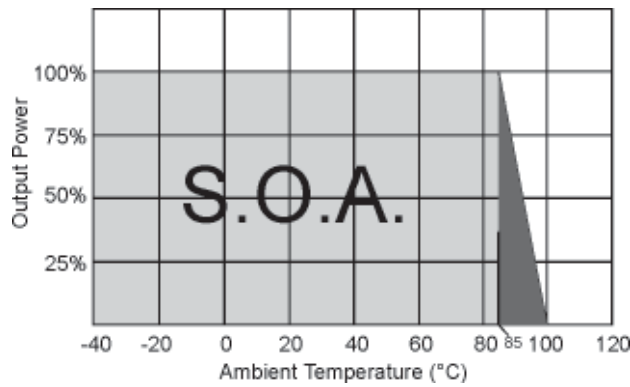
**Remote ON/OFF Control:**

ON: open or high impedance

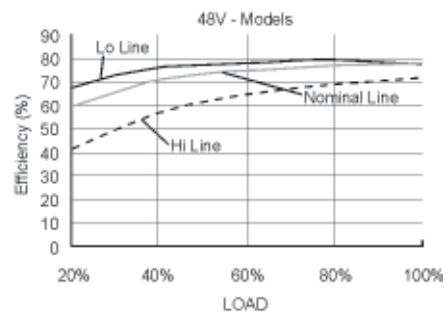
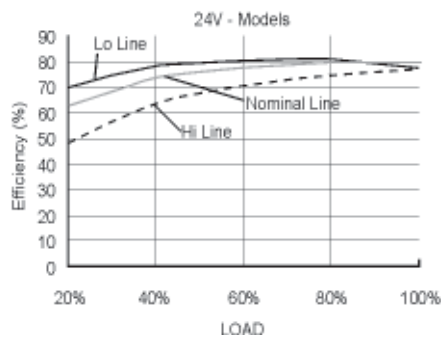
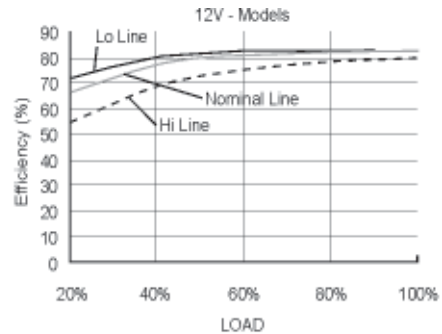
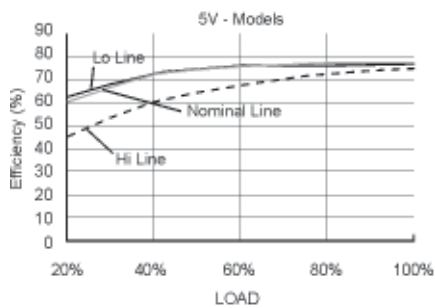
OFF: 3.0 ~ 6.0 mA input current (via 1K)



**Derating Curve**



**Efficiency vs Output Current**

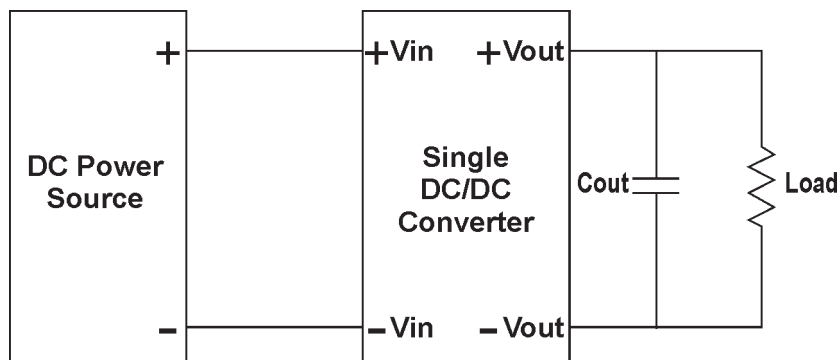


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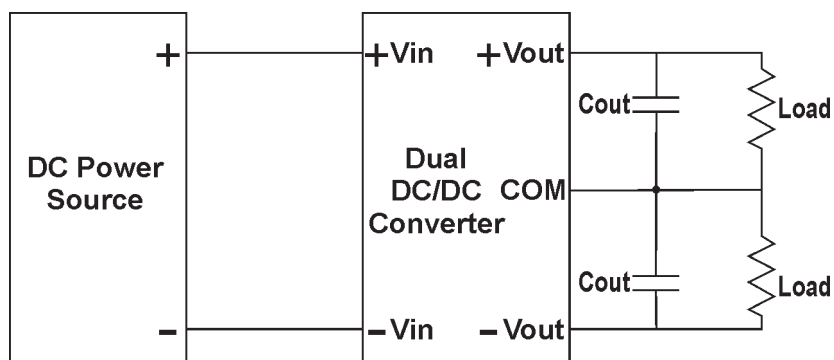
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### Recommendation for Filtering Ripple & Noise

#### Single



#### Dual



**NOTICE:**

The information in this document has been carefully checked. However, no responsibility is assumed for inaccuracies! Specifications can be changed without notice. The latest and most complete information can be found on our website.