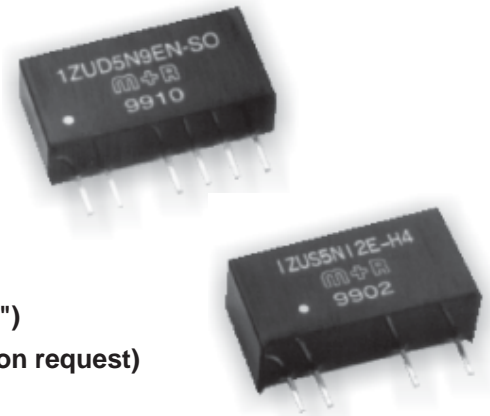


# 1 Watt

# 7 Pin SIL Package Z



- o Ultra-Miniature Size
- o Unregulated Output
- o 1000VDC Isolation
- o 3000VDC Isolation Option (add Suffix "H3") meets EN 60950
- o 4000VDC Isolation Option (add Suffix "H4") meets EN 60950
- o 5200VDC Isolation Option (add Suffix "H5.2") meets EN 60950,  
only available for some versions
- o Galvanic isolated separated dual Outputs Option (add Suffix "SO")  
only for 1000V-Standard version available (two different outputs on request)



## Single-Output

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	%EFF
1ZUS1.8N1.8E	1.8 VDC	1.8 VDC	555 mA	68
1ZUS1.8N3.3E		3.3 VDC	300 mA	68
1ZUS1.8N5E		5 VDC	200 mA	70
1ZUS1.8N9E		9 VDC	111 mA	75
1ZUS1.8N12E		12 VDC	84 mA	78
1ZUS1.8N15E		15 VDC	66 mA	80
1ZUS1.8N24E		24 VDC	42 mA	80
1ZUS3.3N1.8E		3.3 VDC	1.8 VDC	555 mA
1ZUS3.3N3.3E	3.3 VDC		300 mA	68
1ZUS3.3N5E	5 VDC		200 mA	70
1ZUS3.3N9E	9 VDC		111 mA	75
1ZUS3.3N12E	12 VDC		84 mA	78
1ZUS3.3N15E	15 VDC		66 mA	80
1ZUS3.3N24E	24 VDC		42 mA	80
1ZUS5N1.8E	5 VDC		1.8 VDC	555 mA
1ZUS5N3.3E		3.3 VDC	300 mA	68
1ZUS5N5E		5 VDC	200 mA	70
1ZUS5N9E		9 VDC	111 mA	75
1ZUS5N12E		12 VDC	84 mA	78
1ZUS5N15E		15 VDC	66 mA	80
1ZUS5N24E		24 VDC	42 mA	80
1ZUS9N1.8E		9 VDC	1.8 VDC	555 mA
1ZUS9N3.3E	3.3 VDC		300 mA	68
1ZUS9N5E	5 VDC		200 mA	70
1ZUS9N9E	9 VDC		111 mA	75
1ZUS9N12E	12 VDC		84 mA	78
1ZUS9N15E	15 VDC		66 mA	80
1ZUS9N24E	24 VDC		42 mA	80

**SPECIFICATIONS**

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

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	%EFF
1ZUS12N1.8E	12 VDC	1.8 VDC	555 mA	68
1ZUS12N3.3E		3.3 VDC	300 mA	68
1ZUS12N5E		5 VDC	200 mA	70
1ZUS12N9E		9 VDC	111 mA	75
1ZUS12N12E		12 VDC	84 mA	78
1ZUS12N15E		15 VDC	66 mA	80
1ZUS12N24E		24 VDC	42 mA	80
1ZUS15N1.8E		15 VDC	1.8 VDC	555 mA
1ZUS15N3.3E	3.3 VDC		300 mA	68
1ZUS15N5E	5 VDC		200 mA	70
1ZUS15N9E	9 VDC		111 mA	75
1ZUS15N12E	12 VDC		84 mA	78
1ZUS15N15E	15 VDC		66 mA	80
1ZUS15N24E	24 VDC		42 mA	80
1ZUS24N1.8E	24 VDC		1.8 VDC	555 mA
1ZUS24N3.3E		3.3 VDC	300 mA	68
1ZUS24N5E		5 VDC	200 mA	70
1ZUS24N9E		9 VDC	111 mA	75
1ZUS24N12E		12 VDC	84 mA	78
1ZUS24N15E		15 VDC	66 mA	80
1ZUS24N24E		24 VDC	42 mA	80

**Dual-Output**

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	%EFF
1ZUD1.8N1.8E	1.8 VDC	±1.8 VDC	±278 mA	68
1ZUD1.8N3.3E		±3.3 VDC	±152 mA	68
1ZUD1.8N5E		±5 VDC	±100 mA	70
1ZUD1.8N9E		±9 VDC	±55 mA	75
1ZUD1.8N12E		±12 VDC	±42 mA	78
1ZUD1.8N15E		±15 VDC	±33 mA	80
1ZUD1.8N24E		±24 VDC	±21 mA	80

**SPECIFICATIONS**

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

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	%EFF
1ZUD3.3N1.8E	3.3 VDC	±1.8 VDC	±278 mA	68
1ZUD3.3N3.3E		±3.3 VDC	±152 mA	68
1ZUD3.3N5E		±5 VDC	±100 mA	70
1ZUD3.3N9E		±9 VDC	±55 mA	75
1ZUD3.3N12E		±12 VDC	±42 mA	78
1ZUD3.3N15E		±15 VDC	±33 mA	80
1ZUD3.3N24E		±24 VDC	±21 mA	80
1ZUD5N1.8E		5 VDC	±1.8 VDC	±278 mA
1ZUD5N3.3E	±3.3 VDC		±152 mA	68
1ZUD5N5E	±5 VDC		±100 mA	70
1ZUD5N9E	±9 VDC		±55 mA	75
1ZUD5N12E	±12 VDC		±42 mA	78
1ZUD5N15E	±15 VDC		±33 mA	80
1ZUD5N24E	±24 VDC		±21 mA	80
1ZUD9N1.8E	9 VDC		±1.8 VDC	±278 mA
1ZUD9N3.3E		±3.3 VDC	±152 mA	68
1ZUD9N5E		±5 VDC	±100 mA	70
1ZUD9N9E		±9 VDC	±55 mA	75
1ZUD9N12E		±12 VDC	±42 mA	78
1ZUD9N15E		±15 VDC	±33 mA	80
1ZUD9N24E		±24 VDC	±21 mA	80
1ZUD12N1.8E		12 VDC	±1.8 VDC	±278 mA
1ZUD12N3.3E	±3.3 VDC		±152 mA	68
1ZUD12N5E	±5 VDC		±100 mA	70
1ZUD12N9E	±9 VDC		±55 mA	75
1ZUD12N12E	±12 VDC		±42 mA	78
1ZUD12N15E	±15 VDC		±33 mA	80
1ZUD12N24E	±24 VDC		±21 mA	80
1ZUD15N1.8E	15 VDC		±1.8 VDC	±278 mA
1ZUD15N3.3E		±3.3 VDC	±152 mA	68
1ZUD15N5E		±5 VDC	±100 mA	70
1ZUD15N9E		±9 VDC	±55 mA	75
1ZUD15N12E		±12 VDC	±42 mA	78
1ZUD15N15E		±15 VDC	±33 mA	80
1ZUD15N24E		±24 VDC	±21 mA	80

**SPECIFICATIONS**

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

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	%EFF
1ZUD24N1.8E	24 VDC	±1.8 VDC	±278 mA	68
1ZUD24N3.3E		±3.3 VDC	±152 mA	68
1ZUD24N5E		±5 VDC	±100 mA	70
1ZUD24N9E		±9 VDC	±55 mA	75
1ZUD24N12E		±12 VDC	±42 mA	78
1ZUD24N15E		±15 VDC	±33 mA	80
1ZUD24N24E		±24 VDC	±21 mA	80

**SPECIFICATIONS**

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

**INPUT SPECIFICATIONS**

Input Voltage Range	±10%
Input Filter	Capacitor Type

**OUTPUT SPECIFICATIONS**

Voltage Accuracy	±5%
Voltage Balance, Dual Output	±2%
Temperature Coefficient	0.03% per °C
Ripple and Noise, 20MHz BW	Single @ Standard, Suffix "H3", Option "T"      100 mV p-p max. Dual @ Standard, Suffix "H3", Option "SO"      75 mV p-p max. Single + Dual @ Suffix "H4", "H5.2"      100 mV p-p max.
Short Circuit Protection	1 sec.
Line Regulation	1.2%/1% of $V_{in}$
Load Regulation	1.8V <sup>2)</sup> ±20% max. 3.3V, 5V <sup>1)</sup> ±15% max. 9V, 12V, 15V, 24V <sup>1)</sup> ±10% max.

1) Measured from 10% to 100% of Full Load

2) Measured from 20% to 100% of Full Load

**SPECIFICATIONS**

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

**GENERAL SPECIFICATION**

Efficiency <sup>1)</sup>		see table	
Isolation Voltage		1000 VDC min.	
Suffix "H3"		3000 VDC min.	
Suffix "H4"		4000 VDC min.	
Suffix "H5.2"		5200 VDC min.	
Isolation Capacitance	Standard + Option "T"	75 pF	
	Suffix "H3+H4"	60 pF	
	Suffix "H5.2"	10 pF	
	Option "SO"	90 pF	
Isolation Resistance	Standard	10 Gohms	
	Suffix "H4" + Single Suffix "H3"	15 Gohms	
	Suffix "H5.2"	20 Gohms	
Switching Frequency		20kHz min.	
Operating Temperature Range		-40°C to +85°C	
Storage Temperature Range		-55°C to +125°C	
Derating		see diagram	
Safety Standards @ Suffix "H3", "H4"		EN 60950	
Weight (depends on Suffix/Option)		2.1 to 2.9 grams	
Case Material		Non-Conductive Black Plastic	
Case Dimensions	Standard, Suffix "H3", Option "N-SO", "T"	19.6x6x10.2 mm	
	Suffix "H4", "H5.2"	19.65x7.05x10.2 mm	
MTBF (MIL-HDBK-217F)	Standard Type	at 25°C	1012000 hrs
		at 85°C	151000 hrs
	Suffix "T"	at 25°C	992000 hrs
		at 85°C	145000 hrs
	Suffix "H5.2"	at 25°C	928000 hrs
		at 85°C	150000 hrs

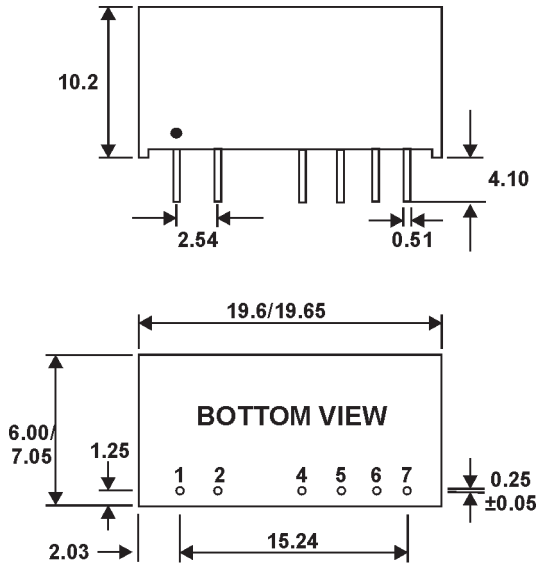
1) There might be different efficiency at different Suffix/Options

**SPECIFICATIONS**

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

**MECHANICAL SPECIFICATIONS**

Case "Z"



All Dimensions in mm.  
Tolerances: ±0.25 mm

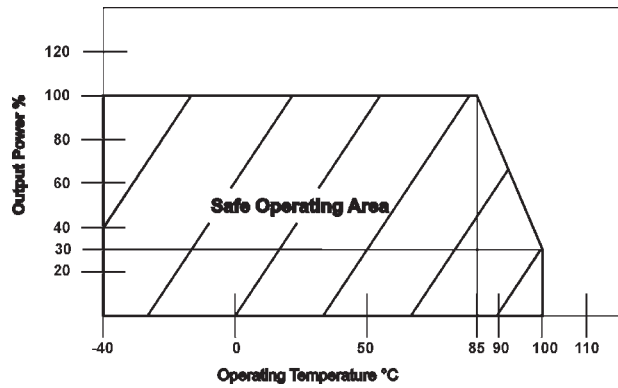
PIN CONNECTIONS – M + R				
	1 KVDC Single	1 KVDC Dual	3/4/5.2 KVDC	Option "SO"
1	+INPUT	+INPUT	+INPUT	+INPUT
2	-INPUT	-INPUT	-INPUT	-INPUT
4	NC	-OUTPUT	NO PIN	-OUTPUT1
5	-OUTPUT	COMMON	-OUTPUT	+OUTPUT1
6	+OUTPUT	+OUTPUT	COMMON*	-OUTPUT2
7	NO PIN	NO PIN	+OUTPUT	+OUTPUT2

\* No Pin at Single Output

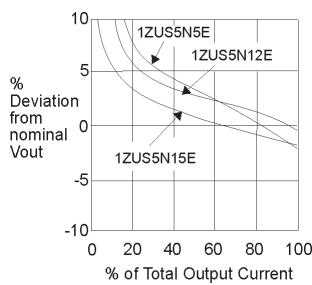
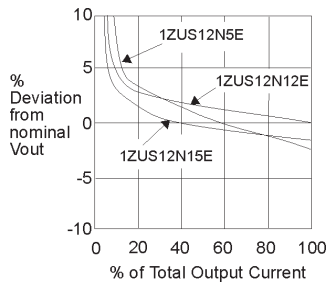
PIN CONNECTIONS – Newport und andere		
	Newport "SO" Option "N-SO"	Single TRACO - Option "T"
1	+INPUT	+INPUT
2	-INPUT	-INPUT
4	+OUTPUT1	-OUTPUT
5	-OUTPUT1	NO PIN
6	+OUTPUT2	+OUTPUT
7	-OUTPUT2	NO PIN

**DIAGRAMS**

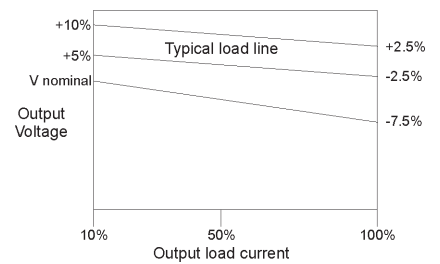
**Derating**



**Load Regulation**



**Line Regulation**



**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.