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Selection Guide

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency @ min Vin [%]	Max. Capacitive Load ⁽¹⁾ [μ F]
R-78W3.3-0.5	6.5 - 32	3.3	0.5	88	220
R-78W5.0-0.5	6.5 - 32	5.0	0.5	93	220
R-78W9.0-0.5	11 - 32	9.0	0.5	95	220
R-78W12-0.5	15 - 32	12.0	0.5	96	220

Notes:

Note1: Max. Cap Load is tested at nominal input and full resistive load
6800 μ F with <1sec start-up time

Model Numbering

R-78W -0.5
Output Voltage Output Current

Specifications (measured at Ta= 25°C, full load, nominal input voltage and after warm-up)

BASIC CHARACTERISTICS

Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	nom. Vin = 24VDC	6.5VDC	24VDC	32VDC
Quiescent Current			5mA	7mA
Internal Power Dissipation				0.4W
Minimum Load ⁽²⁾		0%		
Internal Operating Frequency		280kHz	330kHz	380kHz
Output Ripple and Noise ⁽³⁾	20MHz BW limited		50mVp-p	75mVp-p

Notes:

Note2: Operation under no load will not harm the converter, but specifications may not be met
A minimum load of 6mA is recommended

Note3: Measurements are made with a 100nF MLCC across output (low ESR)

Specifications (measured at $T_a = 25^\circ\text{C}$, full load, nominal input voltage and after warm-up)

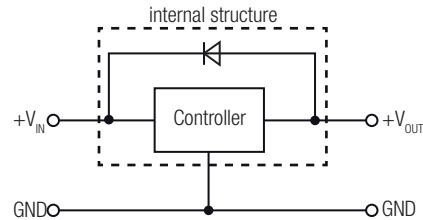
REGULATIONS

Parameter	Condition	Type	Value
Output Accuracy		all models	$\pm 2\%$ typ. / $\pm 3\%$ max.
Line Voltage Regulation	low line to high line, full load	3.3VDC, 5VDC 9VDC, 12VDC	$\pm 0.2\%$ typ. / $\pm 0.4\%$ max. $\pm 0.1\%$ typ. / $\pm 0.2\%$ max.
Load Voltage Regulation	10% to 100% load	3.3VDC, 5VDC 9VDC, 12VDC	$\pm 0.4\%$ typ. / $\pm 0.6\%$ max. $\pm 0.25\%$ typ. / $\pm 0.4\%$ max.
Transient Response	50% - 100% Load, $\Delta I_o/\Delta t = 25\text{mA}/\mu\text{s}$ 10% - 100% Load, $\Delta I_o/\Delta t = 25\text{mA}/\mu\text{s}$	all models	$\pm 75\text{mV}$ typ. $\pm 100\text{mV}$ max.

PROTECTIONS

Parameter	Type	Value
Short Circuit Protection (SCP)		continuous, automatic recovery

Reverse Current Protection

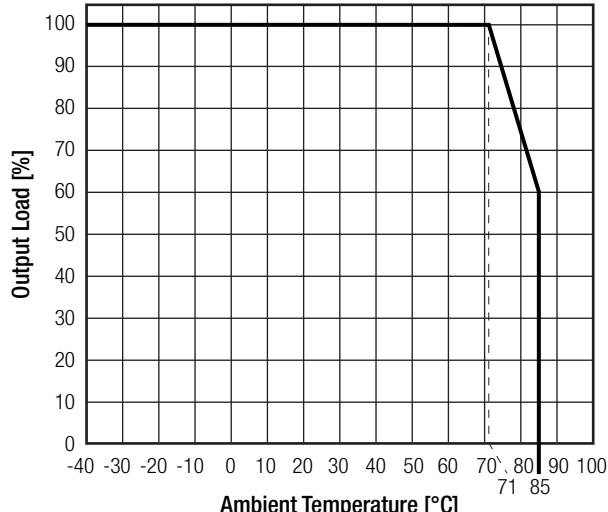


An internal blocking diode can prevent reverse current flow backwards into the output, as this can damage the converter when it is powered down.

ENVIRONMENTAL

Parameter	Condition	Value
Operating Temperature Range	with derating @ natural convection 0.1m/s (see graph)	-40°C to +85°C
Maximum Case Temperature		+100°C
Temperature Coefficient	-40°C to +85°C ambient	0.015%/°C
Thermal Impedance	0.1m/s, vertical	70°C/W typ.
Operating Altitude		2000m
Operating Humidity	non-condensing	95% RH max.
Pollution Degree		PD2
MTBF	according to MIL-HDBK-217F, G.B.	+ 25°C
		9368 x 10 ³ hours

Derating Graph



Specifications (measured at $T_a = 25^\circ\text{C}$, full load, nominal input voltage and after warm-up)

SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety (LVD)	LVD1407030-1	IEC60950-1:2005, 2nd Edition + AM 2:2013 EN60950-1:2006 + AM:2013
EAC	RU-AT.49.09571	TP TC 004/2011
RoHS 2+		RoHS 2011/65/EU + AM2015/863

DIMENSION and PHYSICAL CHARACTERISTICS					
Parameter	Type	Value			
Material	case potting	non-conductive black plastic, (UL94 V-0) epoxy, (UL94 V-0)			
Package Dimension (LxWxH)		17.5 x 11.5 x 8.5mm			
Package Weight		4.8g typ.			
Dimension Drawing (mm)					
Wire/cable information					
#	Function	Wire color	Type	AWG	Strands
1	+Vin	red	UL-1430	22	14/0.16
2	GND	black	UL-1430	22	14/0.16
3	+Vout	brown	UL-1430	22	14/0.16
Tolerance: xx.x= $\pm 0.5\text{mm}$ xx.xx= $\pm 0.25\text{mm}$					

PACKAGING INFORMATION		
Parameter	Type	Value
Packaging Dimension (LxWxH)	cardboard box	140.0 x 130.0 x 65.0mm
Packaging Quantity ⁽³⁾		25pcs.
Storage Temperature Range		-55°C to +125°C
Storage Humidity	non-condensing	95% RH max.
Notes:		
Note3: 5 bubble packs each containing 5pcs in a cardboard box		

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