

# D78BXX-0.5 SERIES

Single Output 0.5Amp

Non-Isolated DC-DC CONVERTER

# DANUBE

## FEATURES

- SINGLE IN LINE PACKAGE
- 6.5-32V, 11-32V, 15-32V, 18-32V, 9-18V WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- INTERNAL SMD TECHNOLOGY
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT



## OUTPUT SPECIFICATIONS

Voltage Set-point Accuracy		+/-2% max.
Temperature Coefficient		+/-0.05%/°C
Ripple & Noise(20MHz BW) <sup>1</sup>		100mVp-p max.
Line Regulation <sup>2</sup>	D78BXX-0.5	+/-1% max.
	D78BXXT-0.5	+/-1.5%max.
Load Regulation <sup>3</sup>	D78BXX-0.5	+/-1% max.
	D78BXXT-0.5	+/-1.5%max.
Minimum Load		20% of Full Load
Short Circuit Protection		Continuous
Short Circuit Restart		Automatic
Max capacitance Load		220uF

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature(with derating)	-40 °C to +85 °C
Case Temperature	+100 °C max.
Storage Temperature	-55 °C to +125 °C
Humidity	95% max

## INPUT SPECIFICATIONS

Input Voltage Range	6.5-32V · 9-18V max.
Input Filter	Capacitor Type

## GENERAL SPECIFICATIONS

Efficiency	80% min.
Isolation Voltage	Non-isolation
Switching Frequency	280KHz min.
Weight	1.3g Typ.
Case Material	Non-Conductive Plastic
Case Size	11.6mm*7.6mm*10.14mm
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A
MTBF <sup>4</sup>	+25°C >3,260,000Hours
	+71°C >1,130,000Hours

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD , AND 25 °C UNLESS OTHERWISE NOTED.

<sup>1</sup> Measured with 1uF ceramic capacitor connect to the output pins.

<sup>2</sup> High Line to Low Line.

<sup>3</sup> Load Regulation is for output load current change from 20% to 100%.

<sup>4</sup> MIL-HDBK-217F @25 °C , Ground Benign.

## ● SELECTION GUIDE(1)

MODEL NUMBER	INPUT VOLTAGE (VDC)	NOMINAL VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT <sup>5</sup> CURRENT(mA)		EFF (%) <sup>6</sup>
					FULL LOAD	NO LOAD	
D78B05-0.5	6.5-32	12	5	500	234	5	89
D78B09-0.5	11-32	24	9	500	206	10	91
D78B12-0.5	15-32	24	12	500	269	10	93
D78B15-0.5	18-32	24	15	500	329	10	95

*Note: Other input to output voltages may be available. Please contact factory.*

## ● SELECTION GUIDE(2)

MODEL NUMBER	INPUT VOLTAGE (VDC)	NOMINAL VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT <sup>7</sup> CURRENT(mA)		EFF (%) <sup>8</sup>
					FULL LOAD	NO LOAD	
D78B05T-0.5	9-18	12	5	500	231	5	90

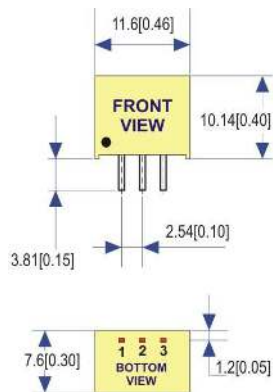
*Note: Other input to output voltages may be available. Please contact factory.*

**Note1.**

MODEL NUMBER	External with output capacitor(min)
D78BXXT-0.5	27uF/100V (CHEMICON KY series)

## ● MECHANICAL DIMENSIONS

### PACKAGE



All dimensions in mm[inches].

PIN	SINGLE
1	+Vin
2	GND
3	+Vout

NOTE: Pin Size is Tolerance 0.50Φ ±0.05mm

All Dimensions In mm(Inches)

Tolerance .X or .XX= ±0.5mm

<sup>5</sup> NOMINAL INPUT VOLTAGE.

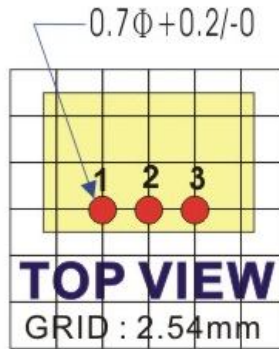
<sup>6</sup> NOMINAL INPUT VOLTAGE, FULL LOAD.

<sup>7</sup> NOMINAL INPUT VOLTAGE.

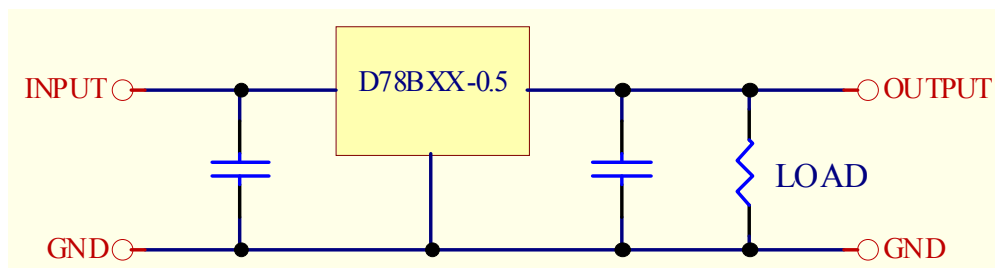
<sup>8</sup> NOMINAL INPUT VOLTAGE, FULL LOAD.

- **RECOMMENDED FOOTPRINT DETAILS**

**D78BXX-0.5 SELECTION PACKAGE**



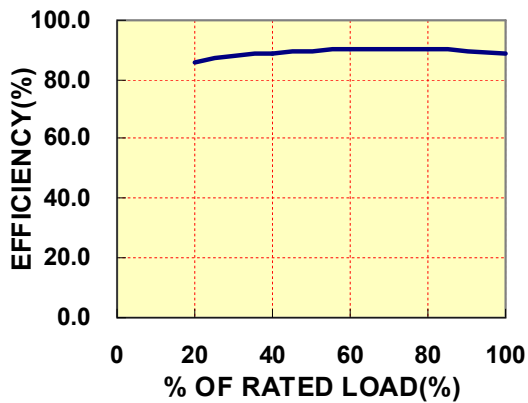
- **TYPICAL APPLICATIONS**



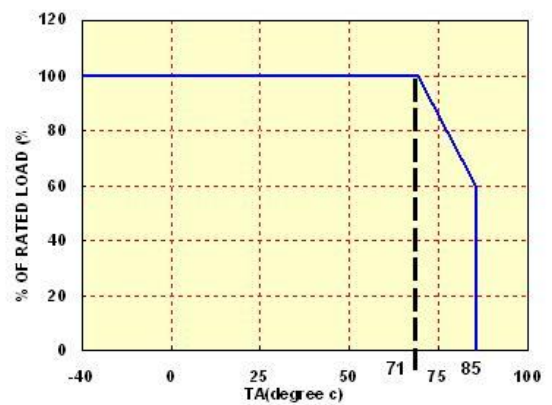
- **TYPICAL PERFORMANCE CURVES**

Specifications typical at  $t_a=25^\circ\text{C}$  , nominal input voltage , rated output current unless otherwise specified.

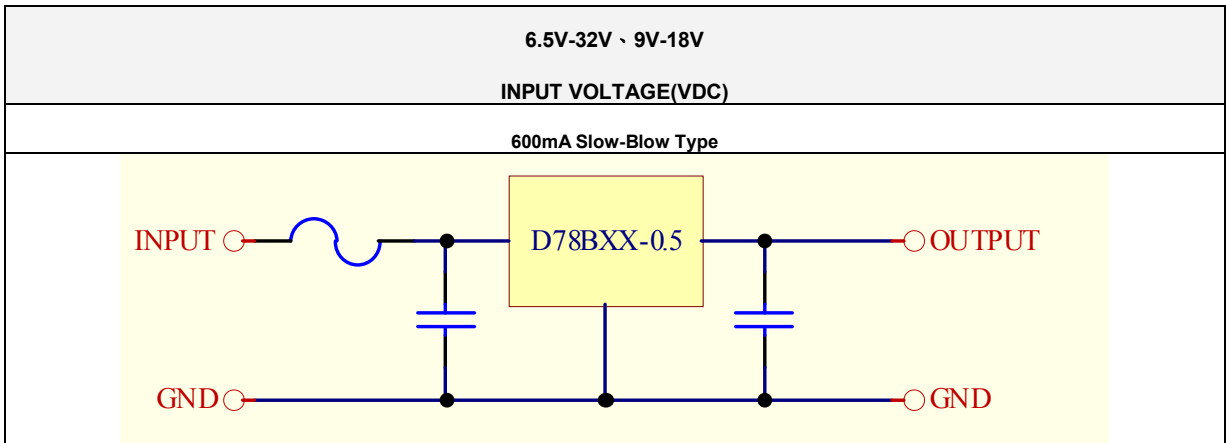
**EFFICIENCY VS LOAD**



**TEMPERATURE DERATING**



## ● INPUT FUSE SELECTION GUIDE



*Note: Certain applications may require the installation of external fuse in front of the input.*

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### FOR MORE INFORMATION CALL:

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