

Features

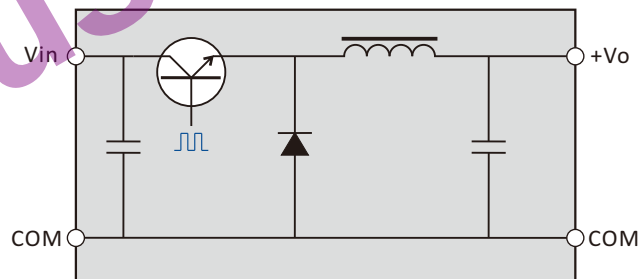
- ◆ Operating temperature: -40 to +85°C
- ◆ Wide input voltage range: 4.75-32Vdc
- ◆ 3.3V/5V/9V/12V/15V output
- ◆ Efficiency up to 93%
- ◆ 100% burn-in
- ◆ No external heat sink
- ◆ Short circuit protection, thermal shutdown
- ◆ UL94V-0 package
- ◆ RoHS compliance
- ◆ Pin-out compatible with LM78XX linear
- ◆ Low ripple and noise

General Description

The K78xx-500 series high efficiency switching regulators are ideally suited to replace 78xx linear regulators and are pin compatible. The efficiency of up to 93% means that very little energy is wasted as heat so there is no need for any heat sinks with their additional space and mounting costs.



Functional Diagram



Selection Guide

KB7805-500

Product Series	Product Type	Output Voltage	Output Current
KB: non-isolated single	78: buck series	03 = 3.3Vdc 05 = 5Vdc 09 = 9Vdc 12 = 12Vdc 15 = 15Vdc	500 = 500mA 1000 = 1000mA

KB78xx-500 Series

500mA, wide input, non-isolated & regulated single output dc-dc converter



Output Specifications

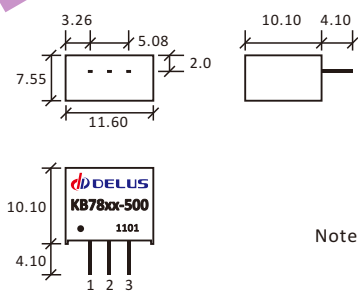
Item	Test Conditions	Min	Typ	Max	Units
Output Current	Ta=-40-+71°C			500	mA
Line Regulation	100% load, input low to high			±0.4	%
Load Regulation	Nominal, 10%-100% load			±0.6	
Output Voltage Accuracy	Nominal, 100% load			±3	
Temperature Drift	Nominal, 100% load			0.03	%/°C
Ripple & Noise	DC-20MHz bandwidth		10	50	mVp-p
Switching Frequency	Nominal, 100% load	280	330	450	KHz
Short Circuit Protection		Continuous, Automatic Recovery			
Thermal Shutdown	Internal IC junction		150		°C
Quiescent Current			5	8	mA

Common Specification

Item	Test Conditions	Min	Typ	Max	Units
Operating Temperature	Ta>71°C Derating	-45		+85	°C
Maximum Case Temp.				60	
Storage Temperature		-50		+130	
Lead Temperature	1.5mm from case for 10 seconds			+300	
Storage Humidity				95	%
Weight			2.0		g
Case Material		Black Plastic (UL94V-0)			

Product Program

Model	Input		Output		Efficiency(%)		Ripple (mVp-p)	Certificate
	Voltage(Vdc)		Voltage (Vdc)	Current (mA)	Vin (min)	Vin (max)		
	Nominal	Range						
KB7803-500	24	4.75~28	3.3	500	90	80		
KB7805-500	24	6.5~32	5	500	93	84		
KB7809-500	24	11~32	9	500	95	91		
KB7812-500	24	15~32	12	500	95	92		
KB7815-500	24	18~32	15	500	96	93		



First Angle Projection

Pin	Function
1	Vin
2	COM
3	+Vo

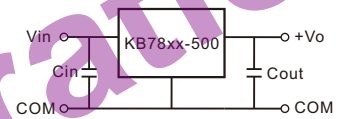
Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm

Application Note

1. Output filter

KB78xx-500 series of products without any external filter components in the case that can be stable and reliable work. Fully loaded, full range of products, the maximum input ripple does not exceed 300mVp-p, the maximum output ripple of not more than 50mVp-p (typical values 10mVp-p), the normal use without an external filter capacitor.

If you want to further reduce the ripple please connect a external filter circuit at the inputs and outputs (see figure) . Recommended values 10-100uF with input capacitor, and recommended values with output capacitor please see the following table.



Cin	Cout	Lin, Lout
10~100uF	3.3V	22uF
	5V	22uF
	9V	10uF
	12V	10uF
	15V	10uF
		Not required, Recommended values 4.7~100uH

2. Input polarity protection

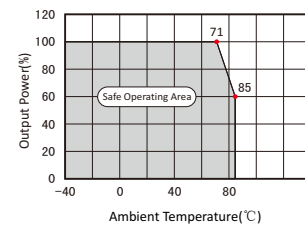
The series product no positive & negative reverse polarity protection, solution is the input series in a diode.

3. This product cannot be used in parallel, can not hot-swappable.

4. On derating

When the environmental temperature exceeds 71°C the module must be derating use, please refer to derating curve.

Temperature Derating Curve



File Release Notes

DBN-301 Technical Data Sheet Version



No.	Version	Data	Description
1	V0	2011/11/01	First release
2			
3			
4			
5			

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1. All data in addition to particular things, are Ta = 25°C, humidity<75%, nominal input voltage and output measured at rated load;
2. Non-standard models with some of the following indicators may be different from the specific circumstances of the Secretary to direct contact with me;
3. In the use of this manual, if some of them do not quite understand terms please refer to our <<DC / DC Converter Application Guide>>;
4. The Company focused on technological improvements, product specifications and parameter updates without notice, to pay attention to the latest information on website: www.delus.cn

All Delus Corporation's products are manufactured, assembled and tested utilizing ISO9001 quality systems.
For information regarding Delus Corporation and its products please see www.delus.cn