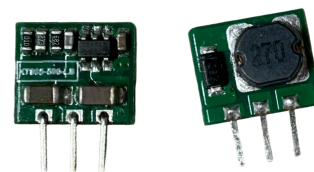


FEATURES

1. Economical open frame power supply
2. High efficiency up to 95%
3. Operating ambient temperature range: -40°C to +85°C
4. No-load input current as low as 0.2mA
5. Support the negative output
6. Output short-circuit protection



3 years
Warranty

Selection Guide

Part No.	Input Voltage (VDC)*	Output		Full Load Efficiency (%) Typ. Vin Min. / Vin Max.	Capacitive Load (μF) Max.
	Nominal (Range)	Voltage (VDC)	Current (mA)		
K7803-500R3-LB	24 (4.75-36)	3.3	500	85/76	680
	12 (7-32)	-3.3	-300	73/72	330
K7805-500R3-LB	24 (6.5-36)	5	500	90/81	680
	12 (7-31)	-5	-300	76/78	330
K78X6-500R3-LB	24 (8-36)	6.5	500	91/83	680
	12 (7-29)	-6.5	-300	76/77	330
K7809-500R3-LB	24 (12-36)	9	500	93/87	680
	12 (8-27)	-9	-150	83/77	330
K7812-500R3-LB	24 (15-36)	12	500	94/88	680
	12 (8-24)	-12	-150	85/82	330
K7815-500R3-LB	24 (19-36)	15	500	95/90	680
	12 (8-21)	-15	-150	80/79	330

Note: * For input voltages exceeding 30 VDC, an input capacitor of 22μF/50V is required.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
No-load Input Current	Nominal input voltage	Positive output	–	0.2	1.5	mA
		Negative output	–	1	10	
Reverse Polarity at Input			Avoid / Not protected			
Input Filter			Capacitance filter			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Voltage Accuracy	Full load, input voltage range	K7803-500R3-LB	--	±2	±4	%
Voltage Accuracy	Full load, input voltage range	Others	--	±2	±3	
Linear Regulation	Full load, input voltage range		--	±0.2	±0.5	
Load Regulation	Nominal input voltage, 10% -100% load		--	±0.3	±1	
Ripple & Noise*	20MHz bandwidth, nominal input voltage, 20% -100% load		--	50	100	mVp-p
Temperature Coefficient	Operating ambient temperature -40°C to +85°C		--	±0.02	—	%/°C
Transient Response Deviation	Nominal input voltage, 25% load step change		--	±50	±250	mV
Transient Recovery Time			--	0.2	1	ms
Short-circuit Protection	Nominal input voltage		Continuous, self-recovery			
Notes: * 1.The “parallel cable” method is used for ripple and noise test, please refer to DC-DC Converter Application Notes for specific information; 2.With light loads at or below 20%, Ripple & Noise increases to 300mVp-p max.,						

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Operating Temperature	See Fig. 1	-40	—	+85	°C
Storage Temperature		-55	—	+125	
Pin Soldering Resistance Temperature	Soldering time: 10 seconds	—	—	+260	
Storage Humidity	Non-condensing	5	—	95	%RH
Switching Frequency	Full load, nominal input voltage	—	700	—	kHz
MTBF	MIL-HDBK-217F@25°C	2000	—	—	k hours

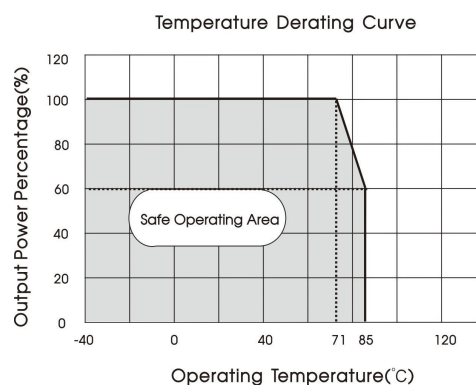
Mechanical Specifications

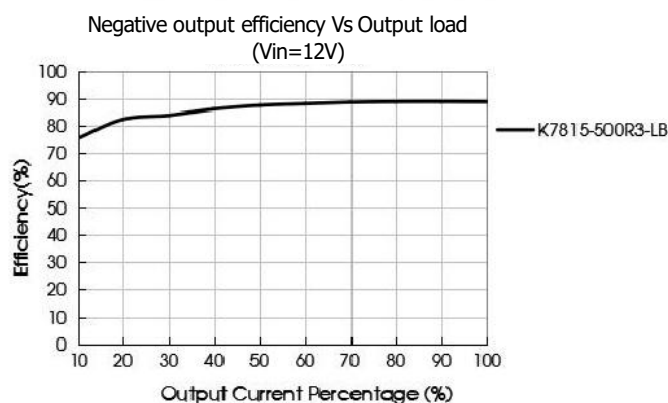
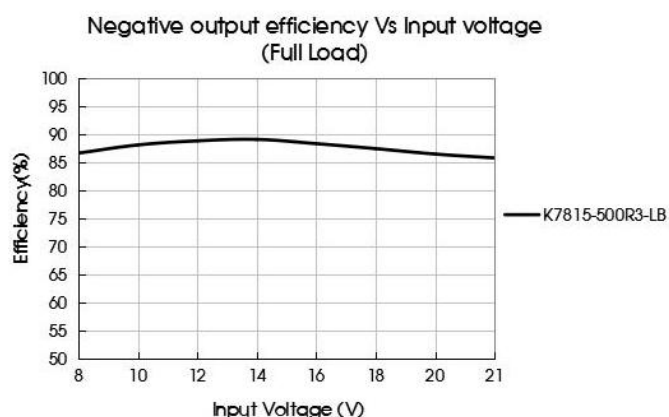
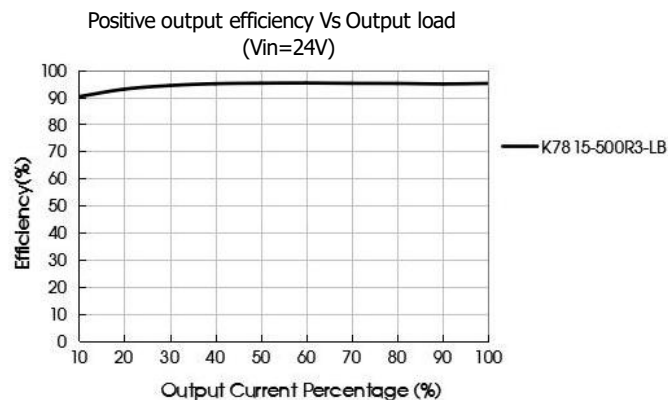
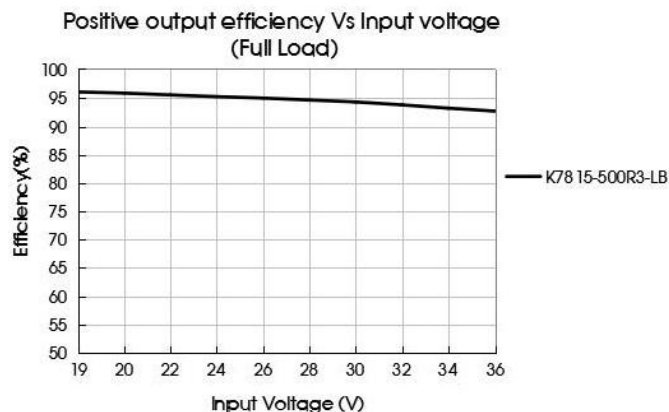
Dimensions	10.27 x 6.00 x 8.61 mm
Weight	0.6g (Typ.)
Cooling Method	Free air convection

EMC Specifications

Emissions	CE	CISPR32/EN55032	CLASS B (see Fig. 5-② for recommended circuit)	
	RE	CISPR32/EN55032	CLASS B (see Fig. 5-② for recommended circuit)	
Immunity	ESD	IEC/EN 61000-4-2	Contact ±4kV	perf. Criteria B
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	±1kV (see Fig. 5-① for recommended circuit)	perf. Criteria B
	Surge	IEC/EN 61000-4-5	line to line ±1kV (see Fig. 5-① for recommended circuit)	perf. Criteria B
	CS	IEC/EN 61000-4-6	3Vr.m.s	perf. Criteria A

Typical Characteristic Curves





Design Reference

1. Typical application

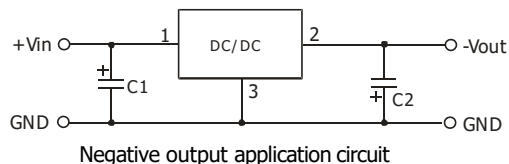
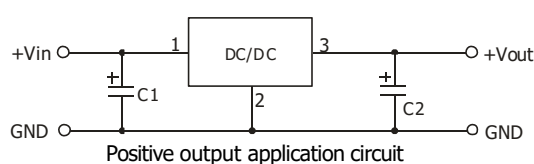


Fig. 2 Typical application circuit

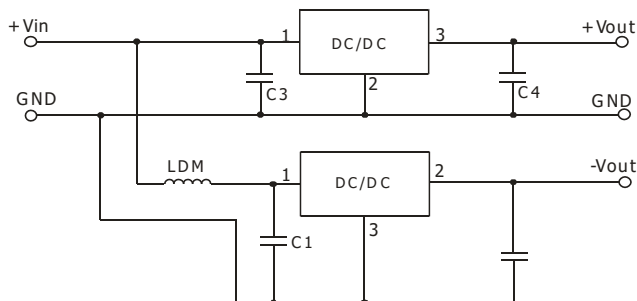


Table 1		
Part No.	C1/C3 (ceramic capacitor)	C2/C4 (ceramic capacitor)
K7803-500R3-LB	10μF/50V	22μF/10V
K7805-500R3-LB		22μF/10V
K78X6-500R3-LB		22μF/16V
K7809-500R3-LB		22μF/16V
K7812-500R3-LB		22μF/25V
K7815-500R3-LB		22μF/25V

Notes:

- The required capacitors C1 and C2 (C3 and C4) must be connected as close as possible to the terminals of the module;
- Refer to Table 1 for C1 and C2 (C3 and C4) capacitor values. For certain applications, increased values and/or tantalum or low ESR electrolytic capacitors may also be used instead;
- When using configurations as shown in figure 3, we recommended to add an inductor (LDM) with a value of up to 10μH which helps reducing mutual interference;
- Converter cannot be used for hot swap and with output in parallel;
- To further reduce the output ripple and noise, we suggested the use of a "LC" filter at the output terminals, with an inductor value (L) of 10μH-47μH.

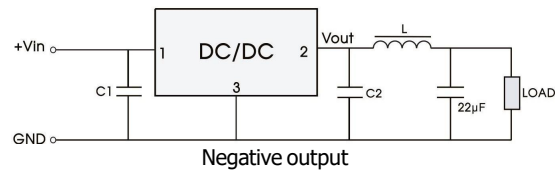
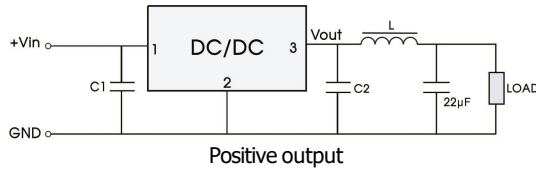


Fig. 4 "LC" output filter application

2. EMC compliance circuit

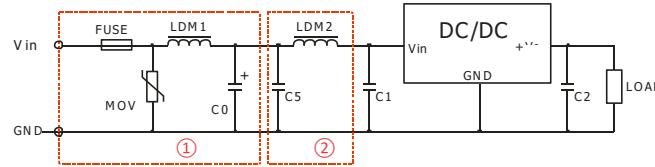


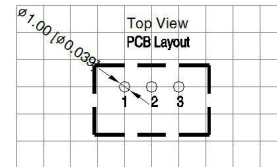
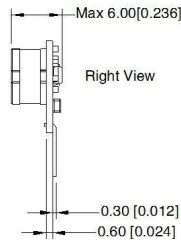
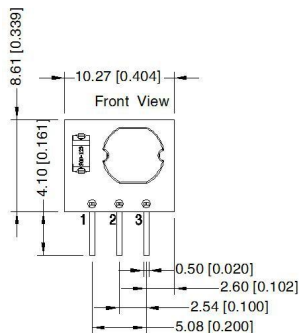
Fig. 5 EMC compliance circuit

FUSE	MOV	LDM1	C0	C1/C2	C5	LDM2
Select fuse value according to actual input current	S20K30	82µH	680µF /50V	Refer to table 1	10µF /50V	22µH

Notes: For EMC tests we use Part ① in Fig. 5 for immunity and part ② for emissions test. Selecting based on needs.

Dimensions and Recommended Layout

THIRAD ANGLE PROJECTION



Note: Grid 2.54*2.54mm

Note:
Unit: mm[inch]
Pin section tolerances: $\pm 0.20 [\pm 0.008]$
General tolerances: $\pm 0.50 [\pm 0.020]$
The layout of the device is for reference only,
please refer to the actual product

Pin-Out		
Pin	Positive Output	Negative Output
1	Vin	Vin
2	GND	-Vout
3	Vout	GND

- Note:
1. If the product works under the minimum required load, it cannot guarantee that the performance of the product complies with all the performance indicators in this manual;
 2. The maximum capacitive load is tested under the input voltage range and full load condition;
 3. Unless otherwise stated, all indexes in this manual are measured at $T_a=25^\circ\text{C}$, humidity $<75\%\text{RH}$, nominal input voltage and rated output load;
 4. All index testing methods in this manual are based on the enterprise standards of the company;
 5. Our company can provide product customization, specific needs can directly contact our technical staff;