

FEATURES

- High efficiency to 96%
- low output ripple and noise
- No external element required
- Short circuit protection and thermal protection
- Operating temperature range: -40 ~ +85
- Pin compatible with LM78XX series
- Sub-mini SIP package, satisfy UL94-V0
- High Reliability (MTTF ≥ 100 ten thousand hours)
- International standard pin mode
- 100% full load aging



RoHS
Non-isolate/Stabilivolt
Super wide voltage input

PRODUCT MODEL LIST

Order Code	Nominal Input Voltage (V)		Nominal Output Voltage		Efficiency (%)		Capacitive Load [Max] (uF)
	Nominal	Range	Voltage (V)	Current (mA)	Vin		
					Min	Max	
K781.5-1000L	12	6.5~28	1.5	1000	85	74	680
K781.8-1000L	12	6.5~28	1.8		85	74	680
K782.5-1000L	12	6.5~28	2.5		88	80	680
K7803-1000L	24	6.5~28	3.3		93	83	680
K7805-1000L	24	6.5~30	5		95	90	680
K786.5-1000L	24	9.0~30	6.5		95	90	680
K7809-1000L	24	12~30	9		95	92	680
K7812-1000L	24	16~30	12		95	93	680
K7815-1000L	24	20~30	15		96	94	680

Ps : *When input voltage is more than 30VDC, the input end should connect to an external 22uF/50V electrolytic capacitor, in order to prevent the voltage peak caused damage to the module.

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy	100% load, full range of input voltage		±2	±3	%
Line Voltage Regulation	Full load, input voltage change from low to high		±0.5	±0.75	
Load Regulation	Load varies from 10% to 100% at nominal input		±0.5	±1	
Thermal Protection	IC built-in		150		
Quiescent Current			5	10	mA
Temps Drift Coefficient	-40 ~ +85			±0.03	%/
Ripple & Noise	At 20MHz bandwidth		25	75	mVp-p
Switching Frequency	100% load, full range of input voltage	280	330	450	KHz
Output Short Circuit Protection	Sustainable and automatic restoration				
Input Filter	Capacitor filtering				
Reverse input	Forbid				
Hot Plug	Nonsupport				

EMC CHARACTERISTICS

EMI	CE	CISPR32/EN55032 CLASS B (see EMI recommended circuit)		
	RE	CISPR32/EN55032 CLASS B (see EMI recommended circuit)		
EMS	ESD	IEC/EN61000 - 4 - 2 CONTACT ± 4KV		perf. Criteria B
	RS	IEC/EN61000 - 4 - 3 10V/M		perf. Criteria A
	EFT	IEC/EN61000 - 4 - 4 ± 2KV (see EMS recommended circuit)		perf. Criteria B

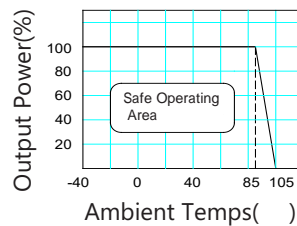
EMC CHARACTERISTICS

EMS	Surge	IEC/EN61000 - 4 - 5 LINE TO LINE $\pm 2KV$ (see EMS recommended circuit)	perf. Criteria B
	CS	IEC/EN61000 - 4 - 6 3 VR.M.S	perf. Criteria A
	Voltage sag, drop and short - time interrupt immunity	IEC/EN61000 - 4 - 29 0% , 70%	perf. Criteria B

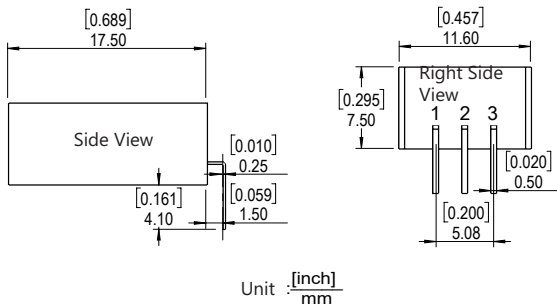
General Characteristic

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage Humidity		5		95	%
Operating Temps		-40		85	
Storage Temps		-55		125	
Operating Case Temps			15	25	
Pin Welding Temps	Welding joint 1.5mm from case,10 seconds operation			300	
MTTF	MIL - HDBK - 217@25	100			10000 hours
Weight			2		g
Cooling	Free air convection				
Case Material	Flame-retardant and heat-resistant plastic (UL94-V0)				

Temps Curve



Shape & Pin Dimensions



Pin Definition Function

1	Vin	input
2	GND	grounding
3	Vout	output

ps:

Terminal Spec.: 0.3*0.5

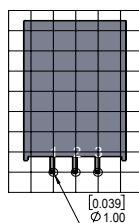
Unit: MM

Terminal section tolerance: ± 0.10 [± 0.004]

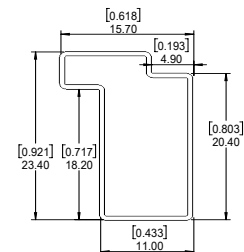
Unmarked tolerance: ± 0.50 [± 0.020]

PCB

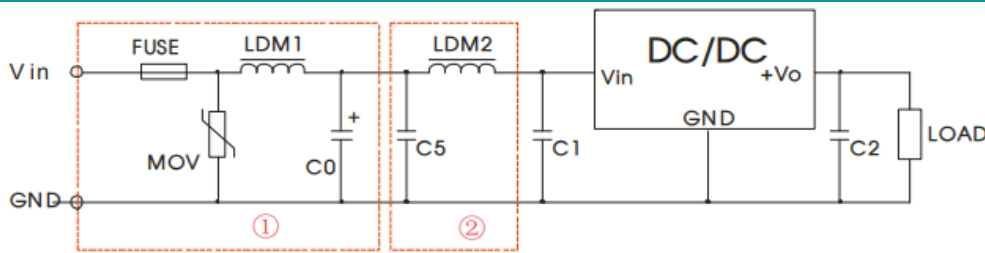
[0.1inch]2.54mm square grid



Package Dimensions



EMC Recommended Circuit



Notes : The first red frame is for EMS test, the second red frame is for EMI test. Select as needed.

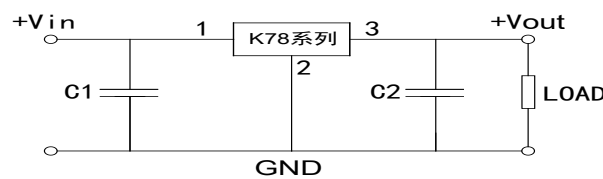
FUSE	MOV	LDM1	C0	C1/C2	C5	LDM2
See remarks	20D470K	82uH	680uF/50V	See remarks	4.7uF/50V	12uH

Notes :

FUSE: selection is according to customer's actual input current

C1/C2: refer to the output parameters in the application circuit.

Basic Application Circuit



Options of C1、C2:

External Capacitance C1	External Capacitance C2
10uF	22uF

Note

Reasonably increase the external capacitance C1、C2 according to the service conditions, and the external capacitance should be close to the pin of K78 series.

The input of this series does not support parallel use of hot plug and output.

For situations requiring high ripple noise, external LC filter circuit should be connected. L generally values between 10uH - 47uH, capacitance can select low ESR and electrolytic capacitor, as the figure shows:

