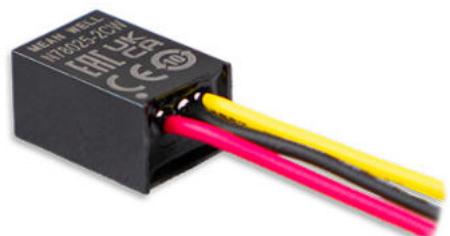




(C Type)



(CH Type)



(CW Type)



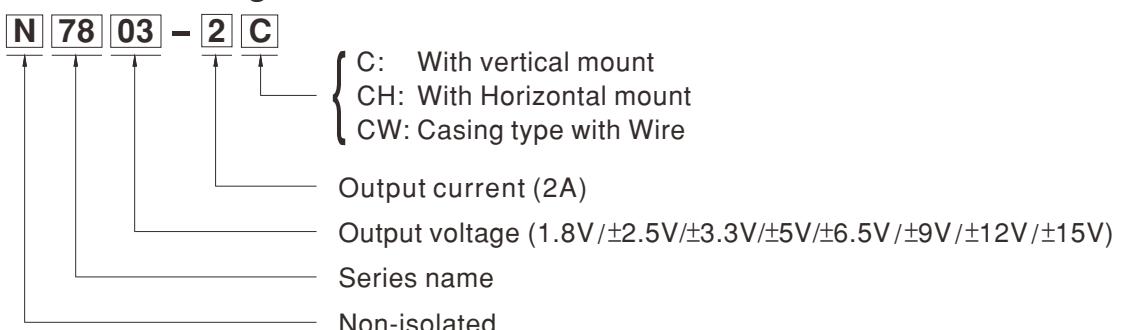
## ■ Features

- Compact size
- Pin-out compatible with LM78xx / LM79xx linear regulators
- High efficiency up to 96%, no heatsink required
- Wide input range up to 32V
- Support negative output
- Operating temperature range -40 ~ +85°C
- Comply to BS EN/EN55032 radiated Class B without additional components
- Protections: Short circuit / Overload / Over temperature
- Low ripple and noises
- 3 years warranty

## ■ Description

N78-2 series converters is high efficiency switching regulators can suit to replace LM78xx/LM79xx linear regulators and its pin-out can be compatible with LM78xx / LM79xx IC. One of the key features is the model can be chosen positive or negative output voltage according to the application. It also features high efficiency up to 96% meant low power loss, wide working temperature range of -40°C up to +85°C with no additional heat sink, compliance with EN55032 radiated Class B without external components, and so on.

## ■ Model Encoding



## ■ Applications

- Voltage step down
- Power supplies
- Industrial PC
- Digital set-top boxes
- Data communications
- Microcontroller related applications
- Point of load regulator in distributed power system

## ■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## MODEL SELECTION TABLE

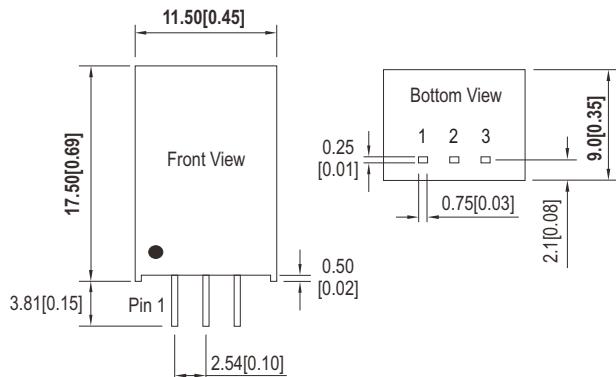
ORDER NO.	INPUT			OUTPUT		EFFICIENCY @Vin min. (NOTE 3.)	CAPACITOR LOAD (MAX.)		
	INPUT VOLTAGE (RANGE) (NOTE 2.)	INPUT CURRENT		OUTPUT VOLTAGE	OUTPUT CURRENT				
		NO LOAD	FULL LOAD						
N78018-2□	12, 24V (4.5 ~ 28V)	1mA	964mA	1.8V	0 ~ 2000mA	83%	2000μF		
N78025-2□	12, 24V (4.5 ~ 32V)	1mA	1248mA	2.5V	0 ~ 2000mA	88%	2000μF		
	12, 24V (8 ~ 32V)	1mA	363mA	-2.5V	0 ~ 1000mA	86%	1000μF		
N7803-2□	12, 24V (6 ~ 32V)	1mA	1279mA	3.3V	0 ~ 2000mA	89%	1800μF		
	12, 24V (8 ~ 31V)	1mA	485mA	-3.3V	0 ~ -1000mA	85%	1000μF		
N7805-2□	12, 24V (8 ~ 32V)	1mA	1344mA	5V	0 ~ 2000mA	92%	1000μF		
	12, 24V (8 ~ 30V)	1mA	727mA	-5V	0 ~ -1000mA	86%	680μF		
N78065-2□	12, 24V (10 ~ 32V)	1mA	1413mA	6.5V	0 ~ 2000mA	92%	1000μF		
	12, 24V (8 ~ 29V)	1mA	956mA	-6.5V	0 ~ -1000mA	85%	680μF		
N7809-2□	24V (13 ~ 32V)	1mA	1458mA	9V	0 ~ 2000mA	95%	680μF		
	12, 24V (8 ~ 26V)	1mA	1047mA	-9V	0 ~ -800mA	86%	330μF		
N7812-2□	24V (16 ~ 32V)	1mA	1563mA	12V	0 ~ 2000mA	96%	470μF		
	12V (8 ~ 23V)	1mA	1035mA	-12V	0 ~ -600mA	87%	220μF		
N7815-2□	24V (18 ~ 30V)	1mA	1739mA	15V	0 ~ 2000mA	96%	470μF		
	12V (8 ~ 20V)	1mA	1293mA	-15V	0 ~ -600mA	87%	220μF		

SPECIFICATION			
INPUT	VOLTAGE RANGE	32V max.(Please refer to page 2)	
	SURGE VOLTAGE (100ms max.)	36V max.	
	FILTER	Capacitor	
	PROTECTION	Fuse recommended. 3000mA Slow-Blow Type for all models	
	INTERNAL POWER DISSIPATION	1250mW	
OUTPUT	VOLTAGE ACCURACY	±3.0% max.	
	RATED POWER	3.6W ~ 30W	
	RIPPLE & NOISE Note.4	100mVp-p max.	
	LINE REGULATION Note.5	1.8 ~ 3.3V:± 0.5% others:± 0.4%	
	LOAD REGULATION Note.6	1.8 ~ 3.3V:± 1.5% others:± 1.0%	
	SWITCHING FREQUENCY (Typ.)	400KHz	
PROTECTION	SHORT CIRCUIT	Continuous, automatic recovery	
	OVERLOAD	150% ~ 300%	
		Protection type : recovers automatically after fault condition is removed	
ENVIRONMENT	OVER TEMPERATURE	Protection type : shut down o/p voltage, automatic recovery	
	COOLING	Free-air convection	
	WORKING TEMP.	-40 ~ +85°C (Refer to "Derating Curve")	
	CASE TEMPERATURE	+110°C max.	
	WORKING HUMIDITY	5% ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-55 ~ +125°C, 10 ~ 95% RH non-condensing	
	TEMP. COEFFICIENT	0.03% / °C (0 ~ 60°C)	
	SOLDERING TEMPERATURE	1.5mm from case of 3 ~ 5sec./265°C max.	
SAFETY & EMC ( Note.7 )	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes	
	SAFETY STANDARDS	EAC TP TC 020/2011 approved	
	ISOLATION VOLTAGE	Non-Isolation	
	EMC EMISSION	Parameter	Standard
		Conducted	BS EN/EN55032(CISPR32)
		Radiated	BS EN/EN55032(CISPR32)
	EMC IMMUNITY	Parameter	Standard
		ESD	BS EN/EN61000-4-2
		Radiated Susceptibility	BS EN/EN61000-4-3
		EFT/Bursts	BS EN/EN61000-4-4
		Surge	BS EN/EN61000-4-5
		Conducted	BS EN/EN61000-4-6
			Level 2, 3Vrms
OTHERS	MTBF	1600Khrs MIL-HDBK-217F(25°C)	
	DIMENSION (L*W*H)	11.5mm*9.0mm*17.5mm	
	CASE MATERIAL	Non-Conductive plastic (UL 94V-0 rated)	
	PACKING	C type : 4g ; 42pcs/per tube, 3360pcs/80 tube/per carton	
		CH type : 4g ; 150pcs/Box, 1800pcs/12 Box/per carton	
NOTE	1.All parameters are specified at normal input, rated load, 25°C 70% RH ambient. 2.For input voltages higher than 30VDC, an input capacitor (22µF/50V) is required. 3.Efficiency and input current are measured at minimum input voltage and full load. 4.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µF & 47µF capacitor. 5.Line regulation is measured from low line to high line at rated load. 6.Load regulation is measured from 10% to 100% rated load. 7.The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> ) ※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>		

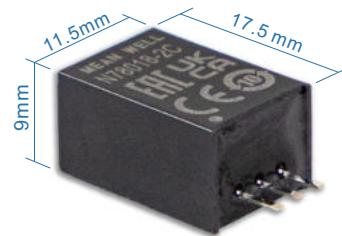
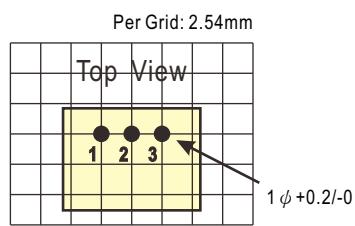
**■ Mechanical Specification**

- All dimensions in mm(inch)
- Tolerance: x.x or x.xx $\pm$ 0.5mm(x.x or x.xx $\pm$ 0.01")
- Pin size is: 0.75\*0.25 $\pm$ 0.1mm ( $\pm$ 0.003")

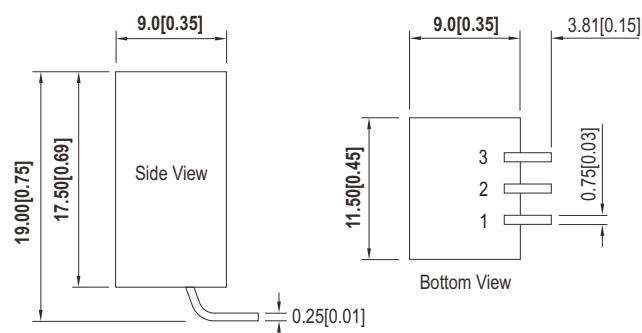
※ C Type:


**■ Plug Assignment**

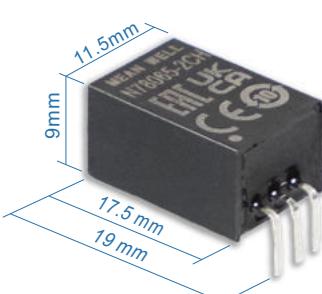
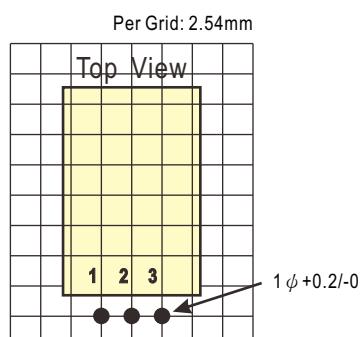
Pin-Out		
Pin No.	N78xx - 2C	
	+Output	-Output
1	+Vin	+Vin
2	GND	-Vout
3	+Vout	GND



※ CH Type:

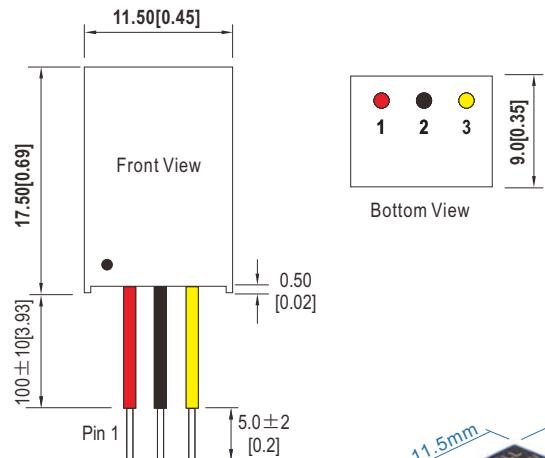
**■ Plug Assignment**


Pin-Out		
Pin No.	N78xx - 2CH	
	+Output	-Output
1	+Vin	+Vin
2	GND	-Vout
3	+Vout	GND



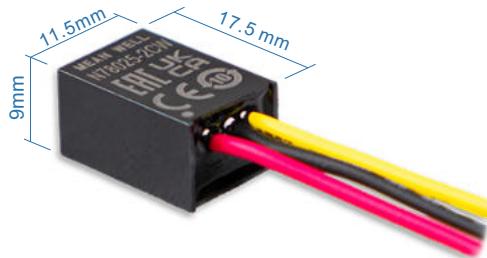
## ■ CW Type:

(Casing type with Wire)

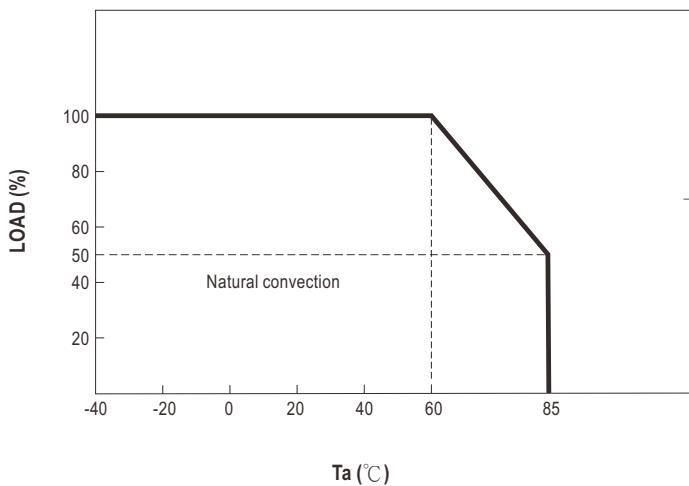


## ■ Plug Assignment

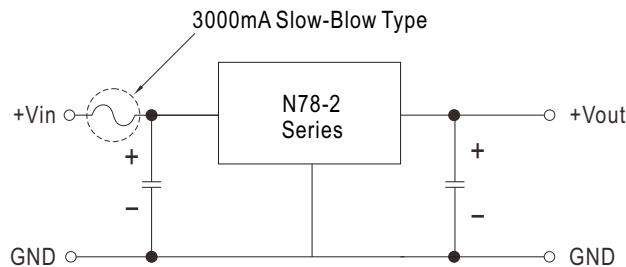
Pin No.	Pin-Out	
	N78xx - 2CW	
1 (Red)	+Output	-Output
2 (Black)	GND	-Vout
3 (Yellow)	+Vout	GND



## ■ Derating Curve

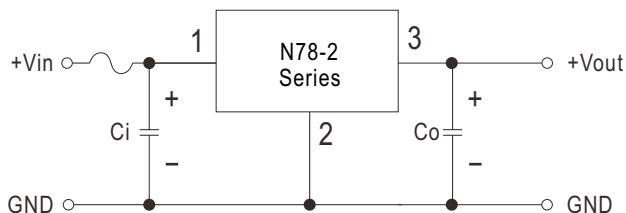


## ■ External Input Fuse Recommended

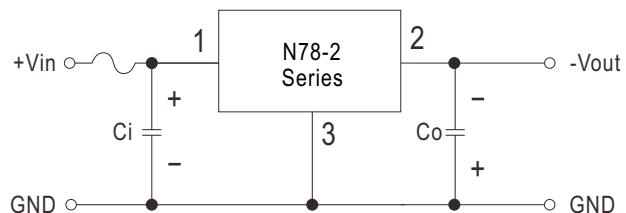


## ■ Positive or Negative Typical Applications

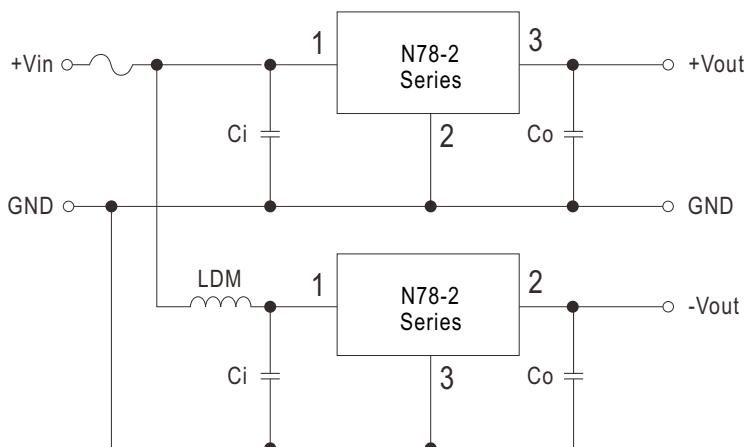
Positive output application circuit



Negative output application circuit



Positive and negative output paralleling application circuit

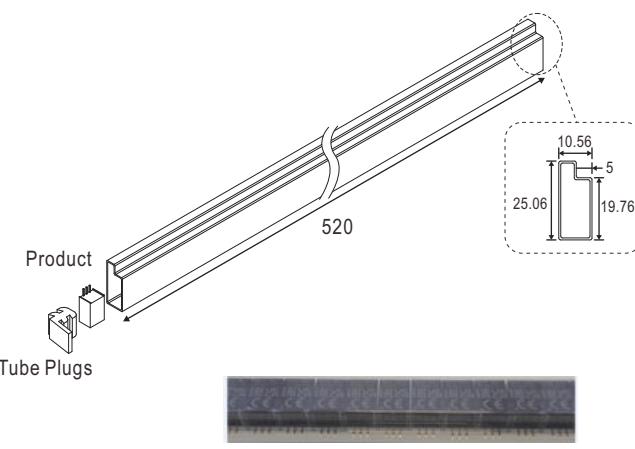
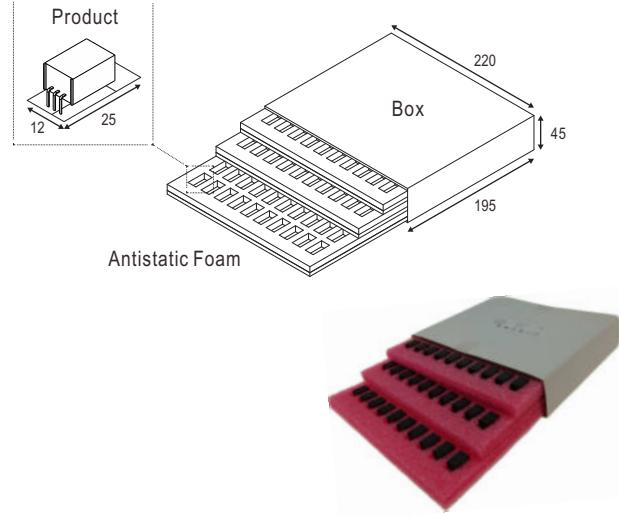


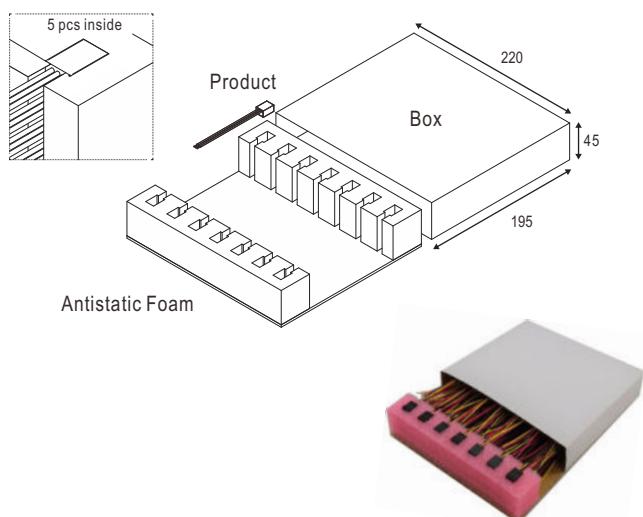
External capacitor table

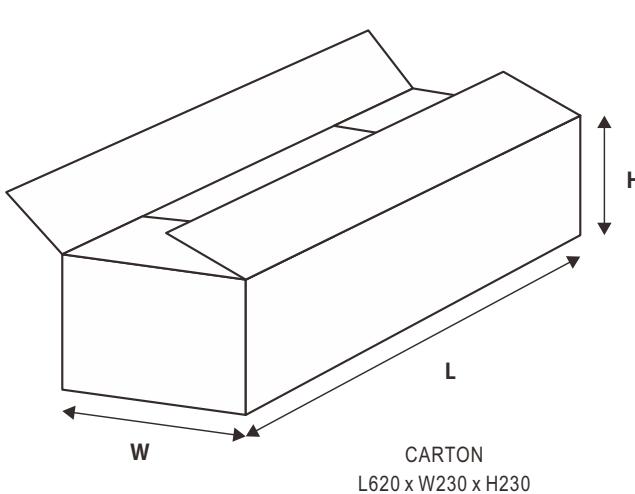
Model No.	Ci (MLCC)	Co (MLCC)
N78018-2	10 $\mu$ F/50V	22uF/10V
N78025-2		
N7803-2		
N7805-2		
N78065-2		
N7809-2		
N7812-2		
N7815-2		22uF/25V

※ In using parallel application circuit, input voltage range should be taken notice of and a 10 $\mu$ H LDM component is recommended to reduce the interference.

## ■ Packing

Standard Packing	N78-2C			
	MPQ Per Tube (PCS)	One Tube G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm				
	42	200g	3360	17Kg
Unit : mm	N78-2CH			
	MPQ per(Box)	One Box G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
	150pcs	710g	1800	9.32Kg

Standard Packing	N78-2CW			
	MPQ per(Box)	One Box G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm  	70	460g	840	6.8Kg

Standard Packing
Unit : mm 

### ■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>