

### Features

- Switching regulator, non isolated dc-dc converter
- Pin out compatible with LM78xx linear
- Efficiency up to 96.5%
- -40°C to +85°C Operating Temperature
- Continuous short circuit protection
- EN62368 safety approval

### Application

- Regulator requires
- MCU application
- Telecom application



### Selection Guide

Part number	Input voltage	Output voltage	Output current @ full load	Ripple & Noise <sup>(1)</sup> (Max.)	Efficiency <sup>(2)</sup>		Capacitive load <sup>(3)</sup> (Max.)
					Max. Input	Min. Input	
<b>C78EB1.8-0.5J</b>	4.75-36 VDC	1.8 VDC	500mA	50mVp-p	73.0%	90.0%	470μF
<b>C78EB3.3-0.5J</b>	4.75-36 VDC	3.3 VDC	500mA	50mVp-p	82.5%	94.5%	470μF
<b>C78EB5.0-0.5J</b>	6.5-36 VDC	5.0 VDC	500mA	50mVp-p	86.0%	95.5%	470μF
<b>C78EB6.5-0.5J</b>	8-36 VDC	6.5 VDC	500mA	60mVp-p	87.5%	96.5%	470μF
<b>C78EB9.0-0.5J</b>	11-36 VDC	9.0 VDC	500mA	70mVp-p	90.0%	96.5%	470μF
<b>C78EB12-0.5J</b>	15-36 VDC	12 VDC	500mA	70mVp-p	91.0%	96.5%	330μF
<b>C78EB15-0.5J</b>	18-36 VDC	15 VDC	500mA	70mVp-p	93.5%	96.5%	270μF

1. <sup>(1)</sup> At the lowest input voltage, the loading is less 15%(75mA), the R&N will be 150mVp-p (max.).
2. <sup>(2)</sup> The efficiency is test by max./ min. input voltage and full load @25°C.
3. <sup>(3)</sup> The capacitive load is test by minimum input and constant resistive load.
4. All specifications valid at nominal input voltage, full load and 25°C after warm-up time unless otherwise stated.

### Part Number

**C 7 8 E B 1 . 8 - 0 . 5 J**

⋮  
 Output voltage
 

 ⋮  
 Output current

## Specifications

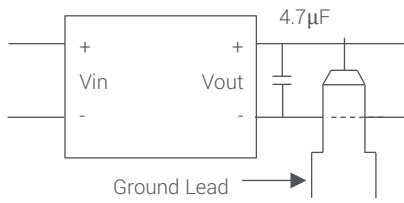
	Parameter	Conditions	Min.	Typ.	Max.	Unit
Input	Input voltage range			4.75-36Vdc		
	No-load input current			2	7	mA
Output	Voltage accuracy		-3		+3	%
	Line voltage regulation	LL to HL at full load		0.2	0.4	%
	Load voltage regulation	1.8VDC output		0.8	1	%
	(10% to 100% full load)	Others		0.4	0.6	%
	Minimum load			1		%
	Operating frequency	100% Load at Nominal Vin			410	
Environment	Operating temperature	with de-rating	-40		85	°C
	Storage temperature		-55		125	°C
	Relative Humidity				95	%RH
	Temperature coefficient			0.02 %/°C		
	Max. case temperature				100	°C
	Vibration				MIL-STD-202G	
Function	Short-circuit protection			Continuous, automatic recovery		
	Safety approvals			EN62368-1		
	MTBF (MIL-HDBK-217F)		2500			kHrs
Physical	Dimension			11.6x7.6x10.2 mm		
	Weight			1.85		g
	Case material			Plastic case		
	Cooling method			Free air convection		

1. All specifications valid at 24V input, full load and 25°C after warm-up time unless otherwise stated.
2. The product information and specifications are subject to change without prior notice.

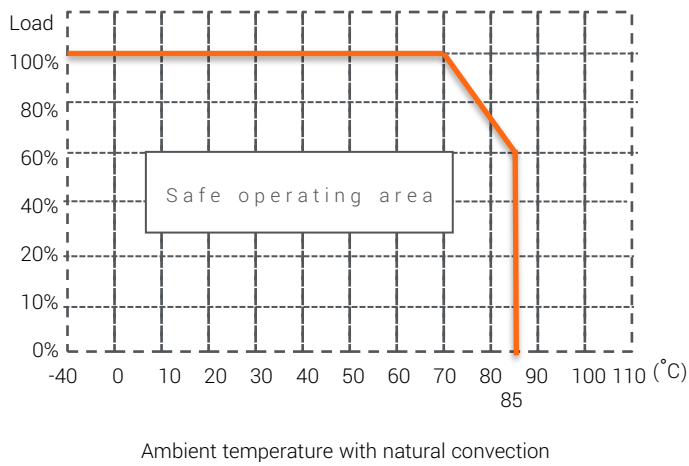
CTC is the professional and one among world's leading manufacturers of DC-DC/ AC-DC converters.

The products were used in Computers, Industrial controls, Medical equipment, Transportation, EV, ECO-power, Aero-space application and communication.

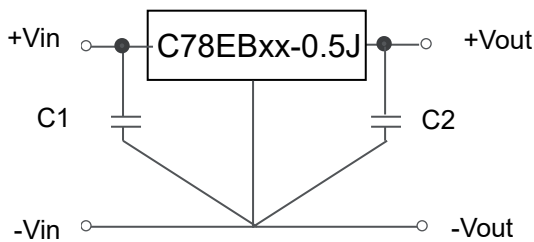
## Ripple & Noise Measure Method



## Derating Curve



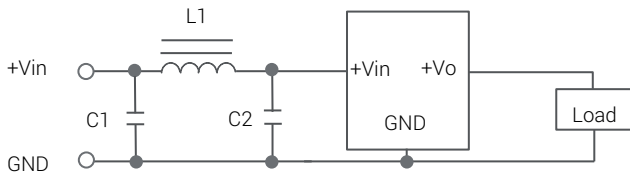
## Standard Application Circuit



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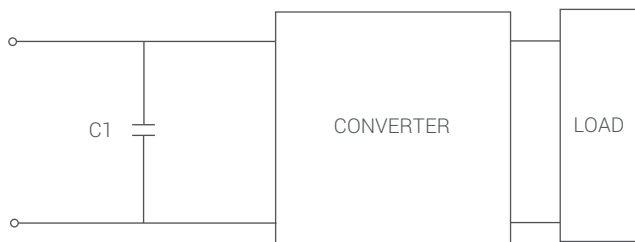
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## EMI filtering-suggestion



Class	C1	L1	C2
Class A	1206 4.7 $\mu$ F 50V MLCC	10 $\mu$ H	1206 4.7 $\mu$ F 50V MLCC
Class B	1206 4.7 $\mu$ F 50V MLCC	15 $\mu$ H	1206 4.7 $\mu$ F 50V MLCC

## EFT and surge external input capacitor required

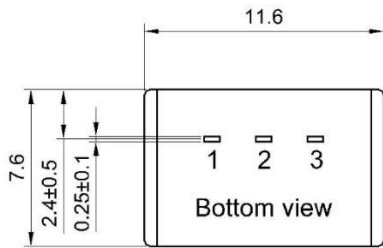
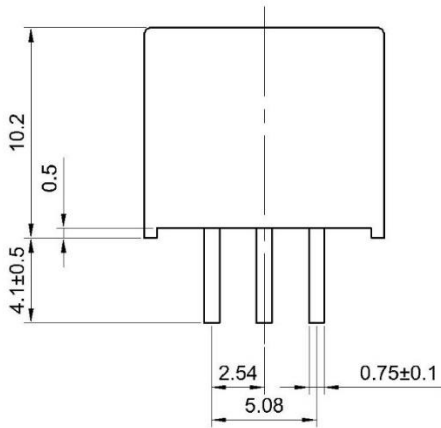


C1
1500 $\mu$ F/ 50V

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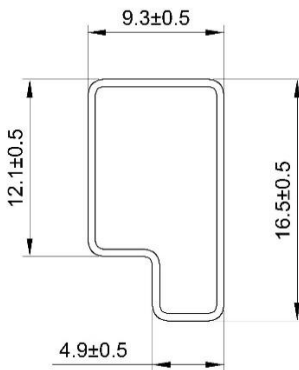
## Mechanical Dimension & Pinning



Projection : Third angle projection  
 Unit : mm  
 Tolerance : ±0.25mm

Pin	Single
1	+Vin
2	GND
3	+Vout

## Package

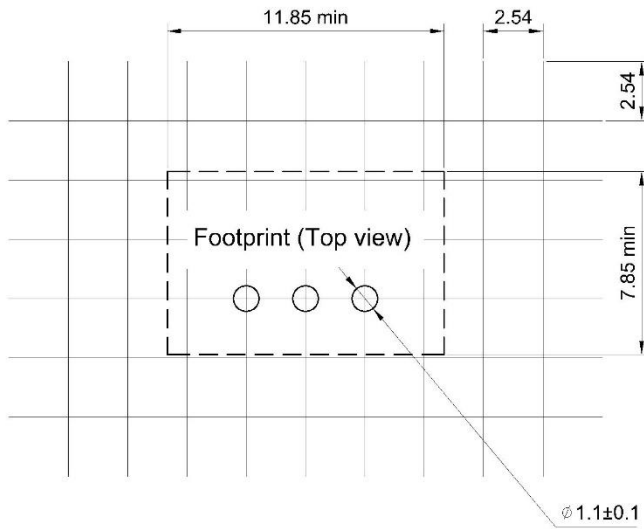


UNIT:mm  
 1 Tube = 42 pcs  
 Length:520±2mm

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## Footprint



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