

# Features

- Low Profile 4.5mm
- Low Cost
- Wide Input Range (5V - 36V)
- Short Circuit Protection
- Castellated Connections

## Selection Guide

Part Number	Input Range (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
ROF-78E3.3-0.5SMD*	5 - 36	3.3	500	73 - 84
ROF-78E5.0-0.5SMD*	9 - 36	5.0	500	79 - 87

\* add Suffix „-R“ for tape & reel packing - e.g. ROF78Exx-0.5SMD-R

## Specifications (measured at Ta=25°C, Full Load after Warm-Up)

Input Voltage Range	5 - 36 VDC (12/24V typ)	
No Load Input Current	5mA max.	
Maximum Input Current	0.5A max.	
Short Circuit Input Current	200mA max.	
Voltage Accuracy	±5% max.	
Line Regulation	(LL to HL at Full Load)	±1% max.
Load Regulation	(10 ~ 100%)	±3% max.
Minimum Load*	10%	
Ripple & Noise	(20MHz Limited)	100mV max.
Transient Response	100% ~ 50% Load	±100mV
(20MHz Limited)	100% ~ 10% Load	±200mV
Operating Frequency	650KHz typ.	
ON/OFF Enable Pin	ON: Open or >1.75V	
(max. Input Voltage = 5V)	OFF: GND or <0.7V	
Standby Current	when enable pin = OFF	3.5µA typ. / 6.5µA max.
Current Limit	950mA typ.	
Short Circuit Protection	Auto Recovery	
Operating Temperature	-40°C ~ 85°C	
Storage Temperature	-55°C ~ 125°C	
Humidity	95% RH	
Dimensions (L x W x H)	12.5 x 13.5 x 4.5 mm	
Weight	1g	
Cooling Method	Free Air Convection	
MTBF (25°C)	MIL-HDBK-217F	3500 x 10 <sup>3</sup> hours

\*Operation at no load will not damage these devices, but they may not meet all of the datasheet specifications.

# INNOLINE

## DC/DC-Converter

with 3 year Warranty

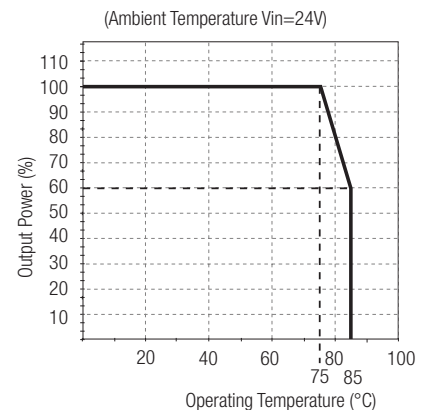
# RECOM

## Non Isolated Power Module



# ROF-78E

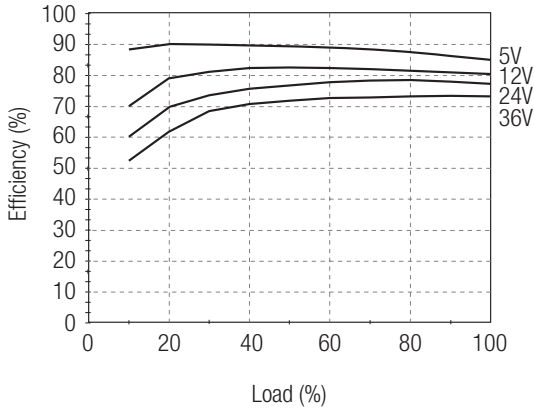
## Derating-Graph (Ambient Temperature)



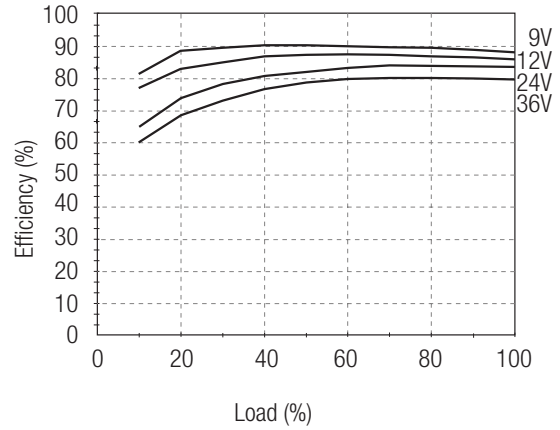
Refer to Application Notes

Characteristics

## Efficiency

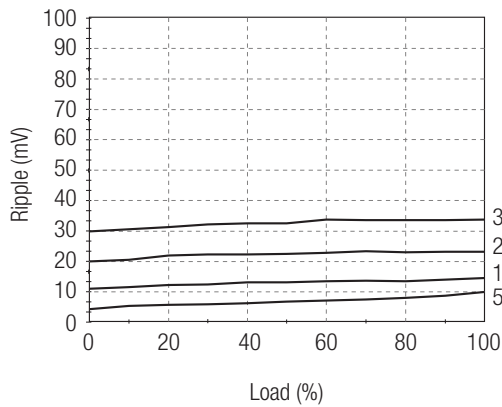


ROF-78E3.3-0.5SMD

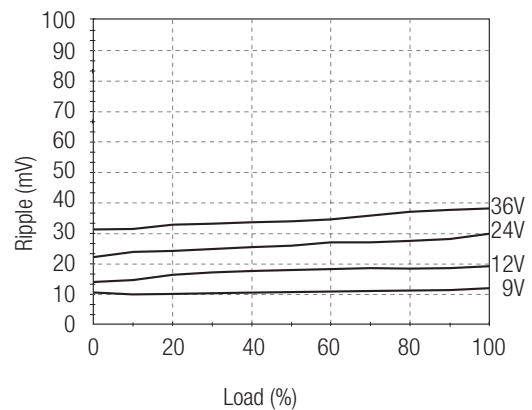


ROF-78E5.0-0.5SMD

## Ripple



ROF-78E3.3-0.5SMD

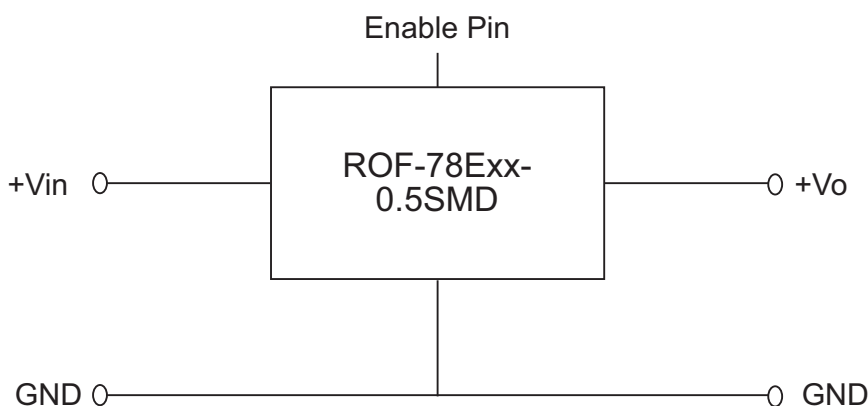


ROF-78E5.0-0.5SMD

ROF-78E

Applications

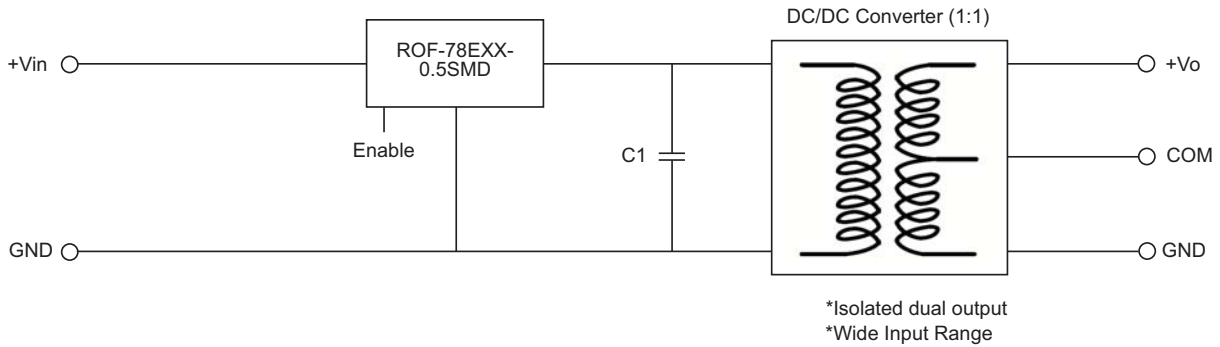
## Standard Application Circuit



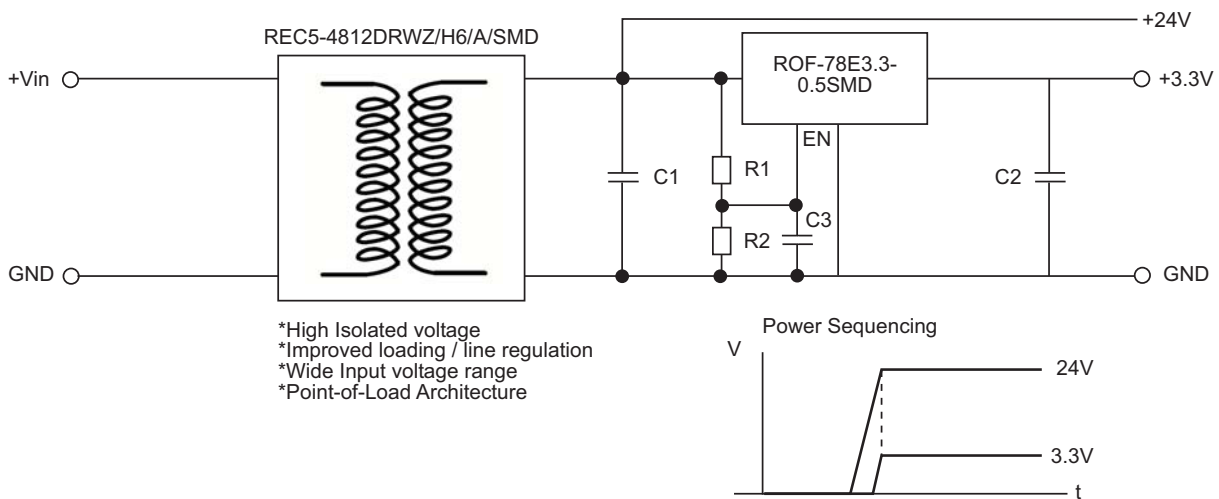
Applications

## Application Examples

### High efficiency, isolated, dual unregulated outputs

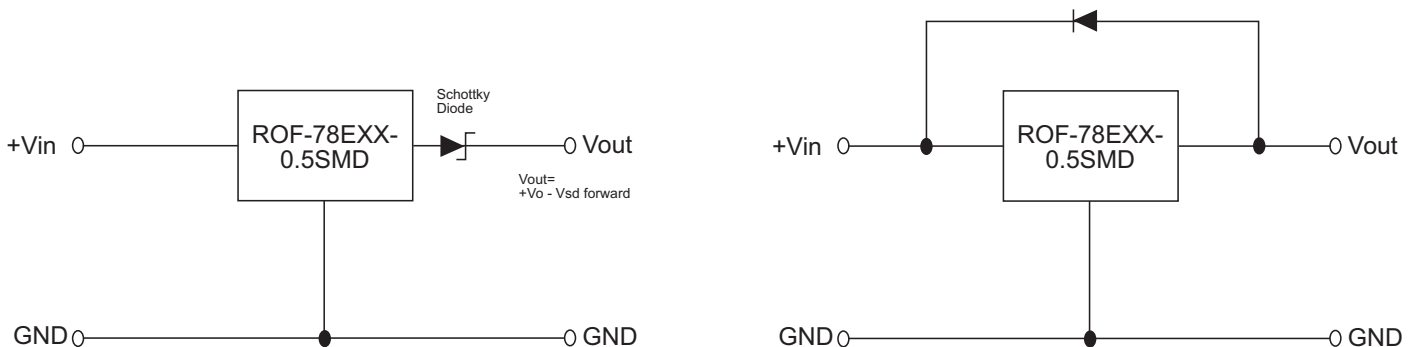


### Isolated (Up to 6KV), wide input range regulated output



ROF-78E

## Optional Protection Circuit



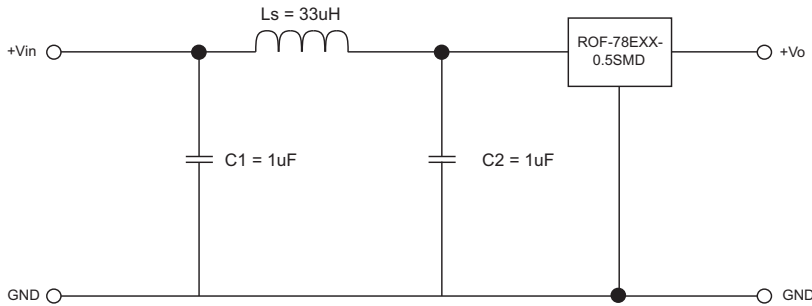
Add a blocking diode to Vout if current can flow backwards into the output, as this can damage the converter when it is powered down.

The diode can either be fitted across the device if the source is low impedance or fitted in series with the output.

**Applications**

## Conduction / Radiation Emission Filter Suggestion

Suggestion for conduction Emission Class A, meet radiation emission Class B

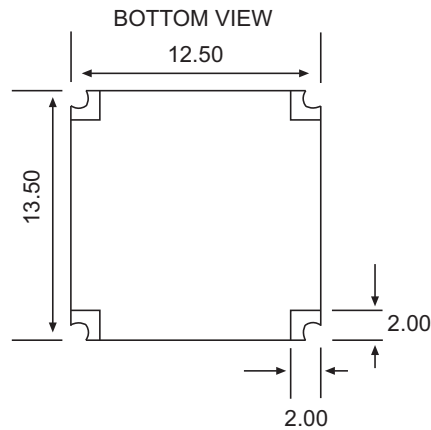
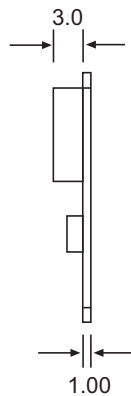
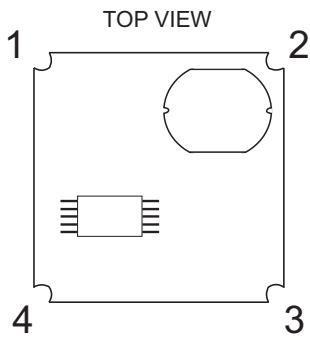


The capacitors used are ceramic capacitors, rated voltage 50V

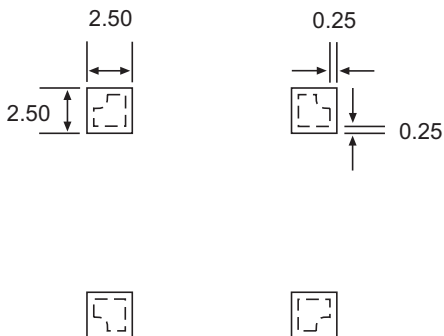
**Package Style and Pinning (mm)**

ROF-78EXX-0.5SMD  
Surface Mount Package

ROF-78E



**Recommended Footprint Details**



**Pin Connections**

Pin #	Out
1	+Vin
2	GND
3	+Vout
4	EN

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm