Features

Switching

Regulator

Efficiency up to 91%, no need for heatsinks!

- Pin-out compatible with LM78XX Linear Regs.
- Low profile (L*W*H=11.6*8.5*10.4mm)
- Wide input range (7V 28V)
- Short Circuit Protection



R-78E-1.0

1.0 AMP SIP3 Single Output



Description

The R-78E series is a switching regulator module that has been designed to offer all the advantages of a switching regulator (high efficiency, wide input range, accurate output voltage regulation) but with a low cost for production quantities. Due to the R-78E's high efficiency of up to 91% at an output voltage of 5V/1A at the output, no heat sink is required. The compact TO- 220 compatible SIP3 package measures only $11.6 \times 8.5 \times 10.4$ mm, so it saves precious board space. The warranty is 3 years.

Selection Guide					
Part Number	Input Voltage Range (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ @ min Vin. (%)	Max. Capacitive Load (μF)
R-78E3.3-1.0	7 - 28	3.3	1000	87	220
R-78E5.0-1.0	8 - 28	5.0	1000	91	220



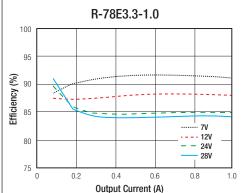
Specifications (measured at TA= 25°C, full load, nominal input voltage and after warm-up)

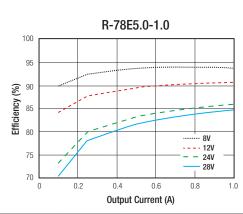
BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Тур.	Max.
Innut Voltage Dange	3.3V	7VDC	24VDC	28VDC
Input Voltage Range	5.0V	8VDC	24100	
Input Current	min. Vin	1.5mA		1000mA
No Load Input Current	typ. Vin		1.5mA	
Operating Frequency	Vin= 12VDC		330kHz	
Output Ripple and Noise	typ. Vin, full load and 20MHz BW limited			120mVp-p





Efficiency vs. Load





IEC60950-1 Certified EN60950-1 Certified



R-78E-1.0

Series

Specifications (measured at TA= 25°C, full load, nominal input voltage and after warm-up)

REGULATIONS			
Parameter	Condition	Value	
Output Voltage Accuracy		±3% typ. / ±5% max.	
Line Voltage Regulation	low line to high line, full load	±1% max.	
Load Voltage Regulation	typ Vin. and 10% to 100% load	±1.5% max.	

PROTECTIONS			
Parameter	Condition	Value	
Short Circuit Protection (SCP)		automatic recovery	
Over Current Protection (OCP)	100% = 1A	200% Load	

ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range	natural convection and with derating (see graph)	-40°C to +85°C
Humidity	non-condensing	95%, RH max.
MTBF	MIL-HDBK 217F, +25°C	3875 x 10 ³ hours
Derating Graph	100 80 80 60 80 100 Ambient Temperature (°C)	

SAFETY AND CERTIFICATIONS					
Certificate Type (Safety)		Report / File Number		Standard	
IEC General Safety		SPCLVD 1407030-1		IEC60950-1, 2nd Edition, 2011	
EN General Safety		SPCLVD 1407030-1		EN60950-1, 2nd Edition, 2011	
EMC Compliance		Condition		Standard / Criterion	
EMI electrical conduction and radiation		with external filter		EN55022, Class A or B	
		Y 1			
+V _{IN} ○ GND ○		C2	8Exx-1.0	→ +V _{OUT}	
	C1 MODEL		BExx-1.0		
	Ī				

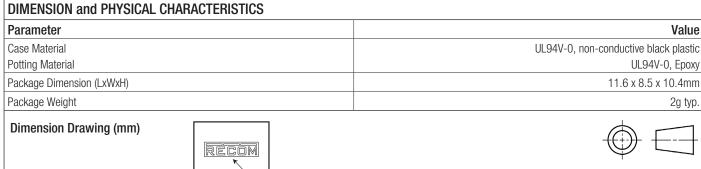


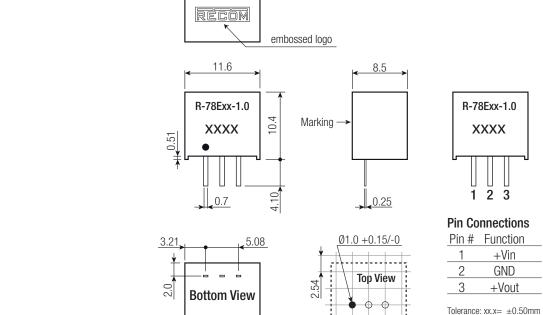
R-78E-1.0

Series

 $xx.xx = \pm 0.25$ mm

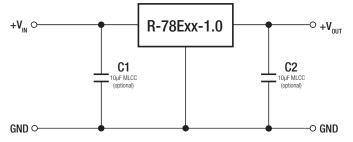
Specifications (measured at TA= 25°C, full load, nominal input voltage and after warm-up)





INSTALLATION AND APPLICATION





2.54

To protect the converter during power-up, use soft start power supply.

Notes:

Note1: The R-78Exx-1.0 can't be used as positive to negativ converter.

PACKAGING INFORMATION			
Parameter	Туре	Value	
Packaging Dimension (LxWxH)	Tube	520 x 18.2 x 11.2mm	
Packaging Quantity		42pcs.	
Storage Temperature Range		-55°C to +125°C	

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