



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Features

- Efficiency up to 95%, no Need for Heatsinks!
- Industry Standard Pin-Out
- 1.5A Start-Up Overload Capacity
- Non-Isolated Regulator with very low Standby Current
- Wide Input Range (7V ~ 42V)
- Short Circuit Protection
- Fixed Switching Frequency (350kHz), Shielded Magnetics

Description

The R-78T is a switching regulator with a wide input voltage range and a low profile SMD package. Three output voltages are available as standard: 3.3V, 5V and 12V. Due to the 1.5A start-up overload capability, the R-78T can be used to replace 1A or 1.5A regulators in many applications. These modules come with three different styles to be pin-compatible with existing solutions, but at a lower cost.

Selection Guide

Part Number SIP3	Input Range (V)	Output Voltage (V)	Output Current (A)	Efficiency	
				Min. Vin (%)	Max. Vin (%)
R-78T3.3-1.0*	7 – 42	3.3	1.0	88	79
R-78T5.0-1.0*	8 – 42	5.0	1.0	92	85
R-78T12-1.0*	15 – 42	12	1.0	95	92

*add suffix /FC, /AC or /AL for required pinning option

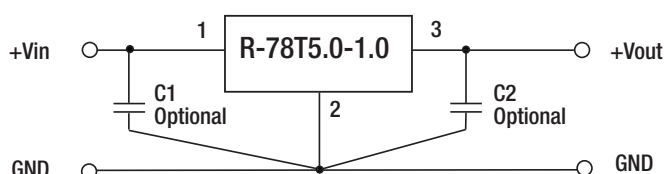
* add suffix -R for tape&reel packing e.g. R-78T3.3-1.0/FC-R.

-Tray for Tray packaging, e.g. R-78T5.0-1.0/AC-Tray For more details see Application Notes.

Specifications (typical at 25°C, 10% minimum load, unless otherwise specified)

Input Voltage Range	3.3V 5V 12V	7-42VDC 8-42VDC 15-42VDC
No Load Input Current		1mA typ.
Input Filter		C Filter
Voltage Accuracy		±2% typ. / ±3% max.
Line Regulation	(LL to HL at Full Load)	±0.2% typ.
Load Regulation	(10-100%)	±0.4% typ.
Minimum Load		10%
Ripple & Noise (20MHz Limited)		50mVp-p typ. / 100mVp-p max.
Transient Response 50mA/uS	100% - 50% Load	±250mV max.
Operating Frequency		350KHz typ.
Current Limit		1.5A / 10sec max.
Short Circuit Protection		Current limited to 3.5A typ.
Operating Temperature		-40°C to 85°C
Storage Temperature		-55°C to 125°C
Humidity		5% to 95% RH max.
Dimension	suffix /AC or /AL suffix /FC	23 x 27.2 x 10mm 23 x 29.4 x 8mm
Weight		4.5g typ.
Cooling Method		Free Air Convection
MTBF (25°C)	MIL-HDBK-217F	367 x 10 ³ hours

Standard Application Circuit

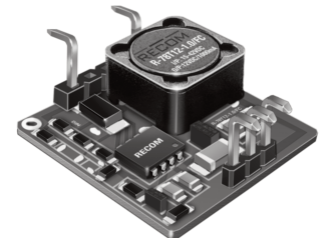


INNOLINE DC/DC-Converter

with 3 year Warranty

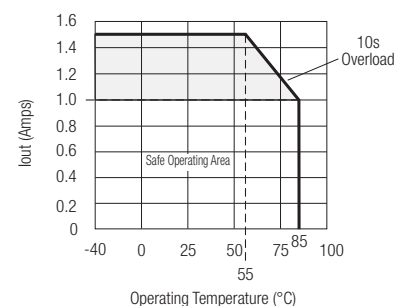
RECOM

1.0 AMP SMD Single Output



R-78T-1.0

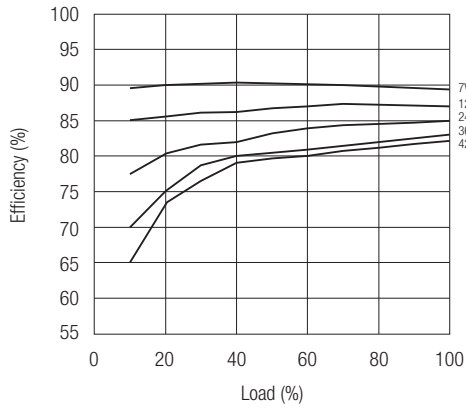
Derating-Graph (Ambient Temperature)



Refer to Application Notes

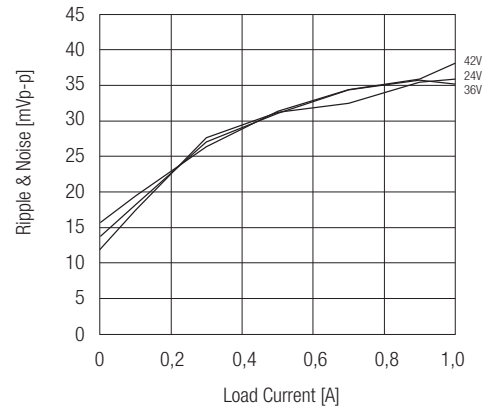
Typical Characteristics

Efficiency

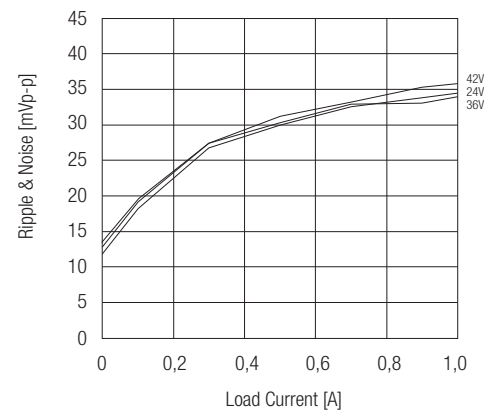
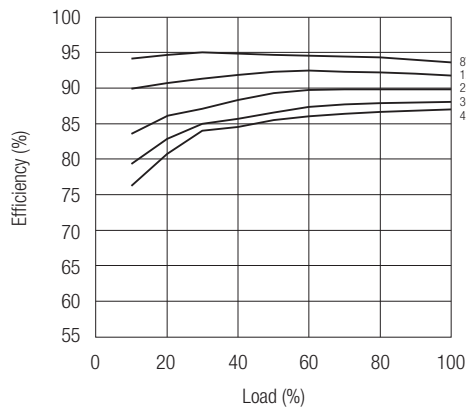


R-78T3.3-1.0

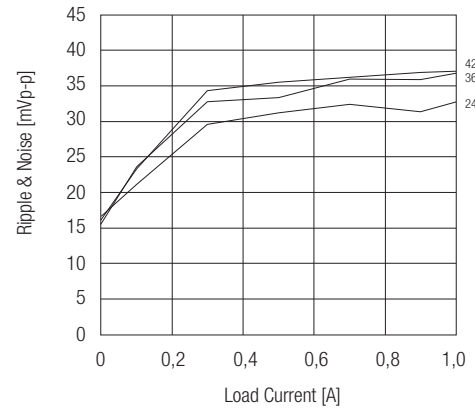
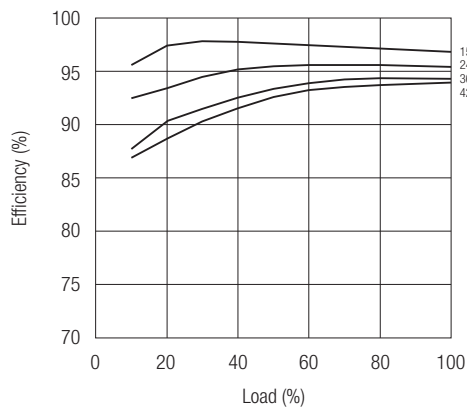
Ripple



R-78T5.0-1.0



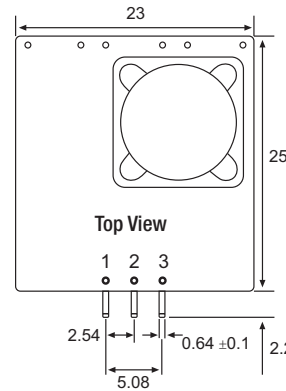
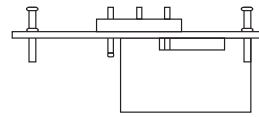
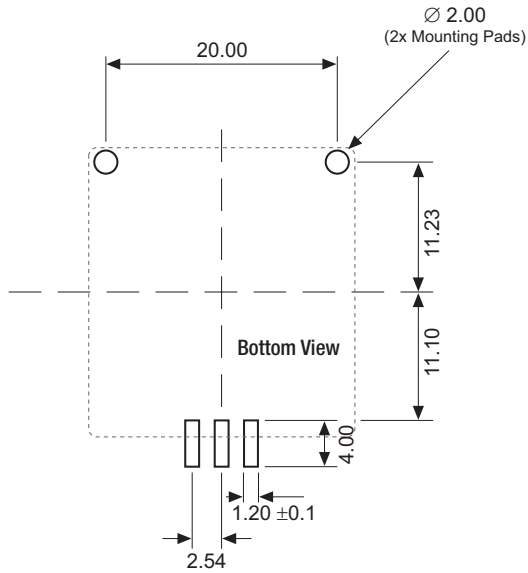
R-78T12-1.0



Package Style and Pinning (mm)

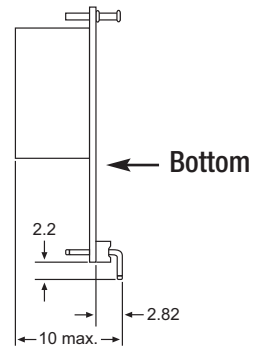
R-78Txx-1.0/AC

Recommended Footprint



Pin Connections

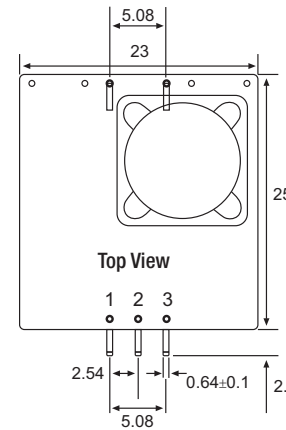
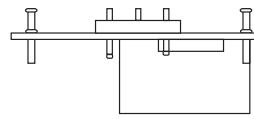
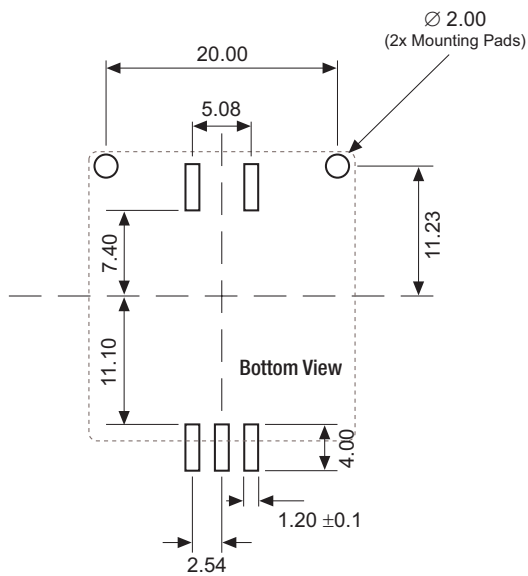
Pin #	Connection
1	+Vin
2	GND
3	+Vout



Tolerance $\pm 0.5\text{mm}$ unless otherwise specified

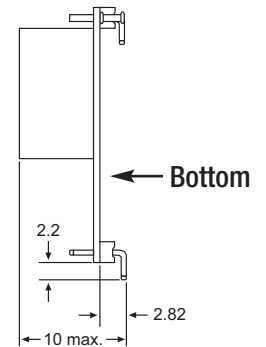
R-78Txx-1.0/AL

Recommended Footprint



Pin Connections

Pin #	Connection
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2	GND
3	+Vout

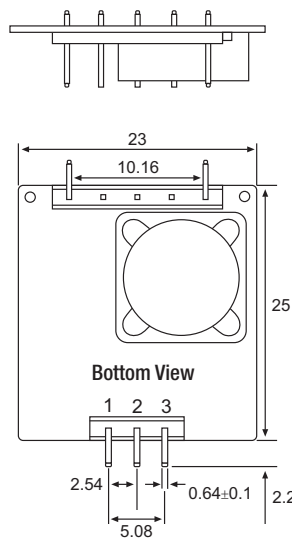
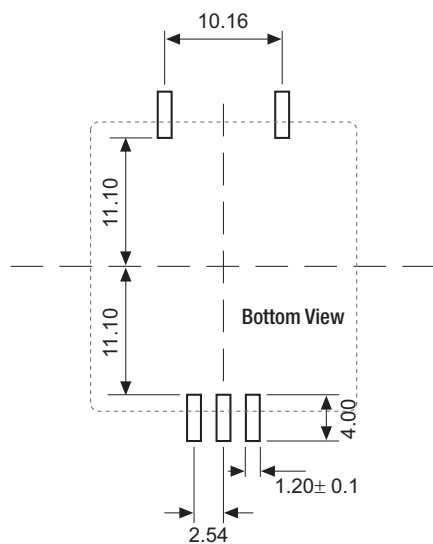


Tolerance $\pm 0.5\text{mm}$ unless otherwise specified

Package Style and Pinning (mm)

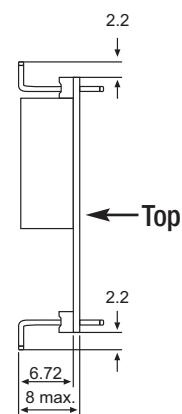
R-78Txx-1.0/FC

Recommended Footprint



Pin Connections

Pin #	Connection
1	+Vin
2	GND
3	+Vout



Tolerance $\pm 0.5\text{mm}$ unless otherwise specified