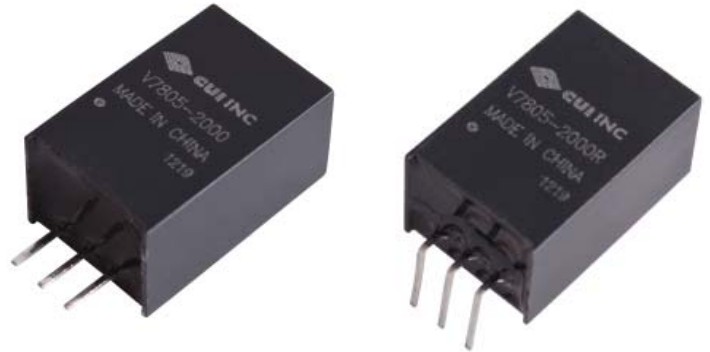


SERIES: V78XX-2000 | **DESCRIPTION:** NON-ISOLATED SWITCHING REGULATOR

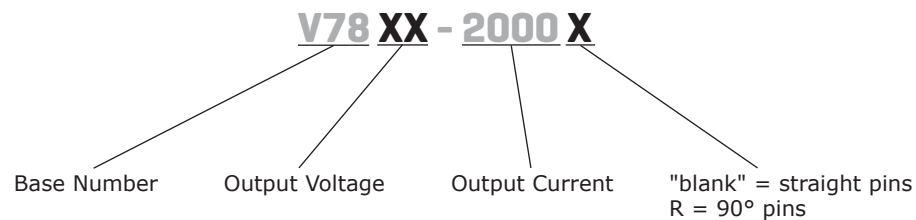
FEATURES

- 2 A current output
- extremely high efficiency up to 92%
- no heat sink required
- pin compatible to LM78XX linear regulators
- available in straight and right angle SIP packages
- low ripple and noise
- short circuit protection, thermal shutdown
- wide temperature (-40~85°C)


MODEL

MODEL	input voltage		output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise ¹ max (mVp-p)	efficiency	
	typ (Vdc)	range (Vdc)					Vin min (%)	Vin max (%)
V7802-2000	12	4.75~18	2.5	2,000	5	45	85	83
V7803-2000	12	4.75~18	3.3	2,000	6.6	45	87	86
V7805-2000	12	6.5~18	5	2,000	10	45	91	88
V7806-2000	12	8~18	6.5	2,000	13	45	92	91

Notes: 1. ripple and noise are measured at 20 MHz BW

PART NUMBER KEY


INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage	2.5 and 3.3 V outputs	4.75	12	18	Vdc
	5 V output	7	12	18	Vdc
	6.5 V output	8.5	12	18	Vdc

OUTPUT

parameter	conditions/description	min	typ	max	units
line regulation	Vin = min ~ max, at full load		±0.5	±0.75	%
load regulation	measured from 10% load to full load		±0.5	±1.0	%
voltage accuracy	100% load		±2	±3	%
switching frequency	100% load, input voltage range	300	340	380	kHz
temperature coefficient			±0.03		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous, automatic recovery				
thermal shutdown	internal IC junction		150		°C

SAFETY AND COMPLIANCE

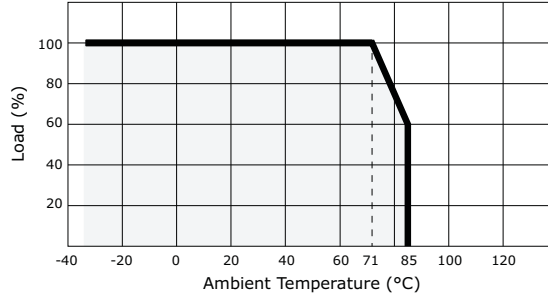
parameter	conditions/description	min	typ	max	units
EMI/EMC	EN 55022 class B, EN 61000-4-2 level 3 6kV / 8kV perf. criteria B				
MTBF		2,000,000			hours
RoHS compliant	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-40		85	°C
storage temperature		-55		125	°C
case temperature				100	°C
storage humidity	non-condensing			95	%
temperature rise	at full load		25		°C
lead temperature	1.5 mm from case for 10 seconds			300	°C

DERATING CURVES

1. output power vs. ambient temperature



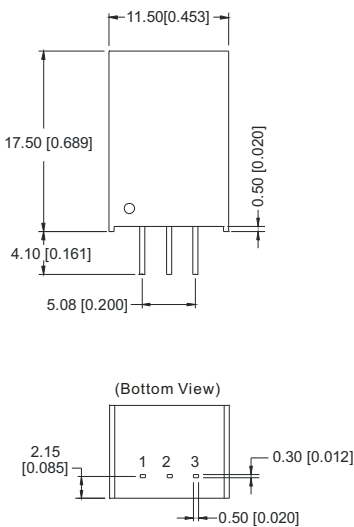
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	0.689 x 0.354 x 0.453 (11.50 x 9.00 x 17.50 mm)				inch
case material	plastic (UL94-V0)				
weight			4.0		g

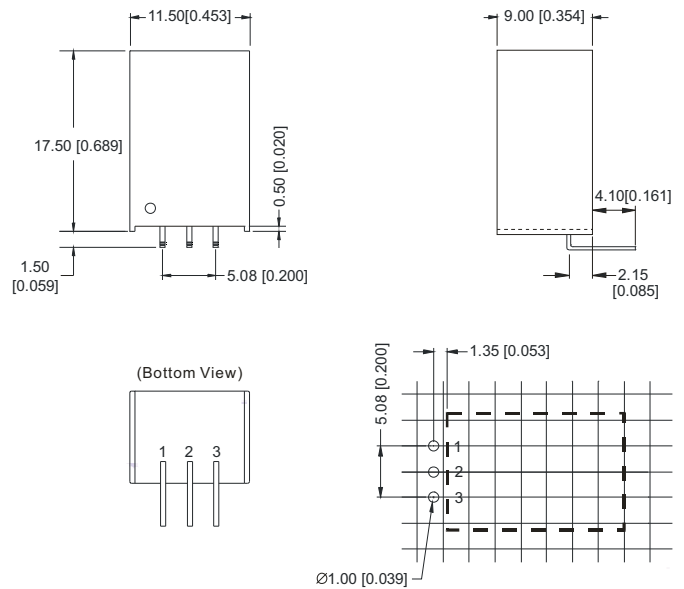
MECHANICAL DRAWING

units: mm [inches]
 tolerance: ±0.25 [±0.010]
 pin section tolerance: ±0.10 mm [±0.004]

V78XX-2000



V78XX-2000R

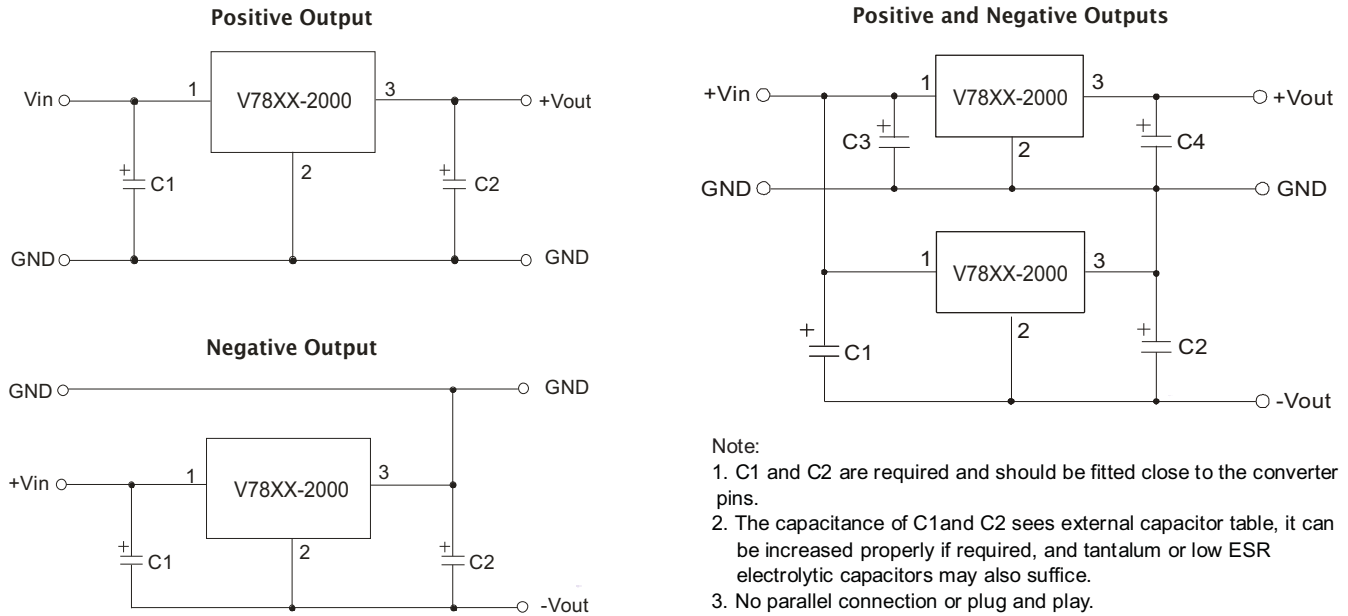


PIN CONNECTIONS	
PIN	FUNCTION
1	+Vin
2	GND
3	+Vo

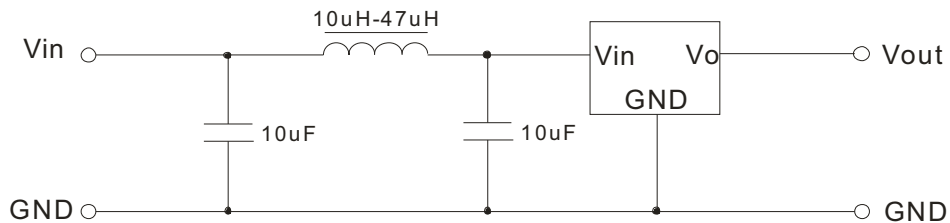
EXTERNAL CAPACITOR TABLE

Part Number	C1 (Ceramic capacitor)	C2 (Ceramic capacitor)
V7802-2000	10 μ F/25V	22 μ F/6.3V
V7803-2000	10 μ F/25V	22 μ F/6.3V
V7805-2000	10 μ F/25V	22 μ F/16V
V7806-2000	10 μ F/25V	22 μ F/16V

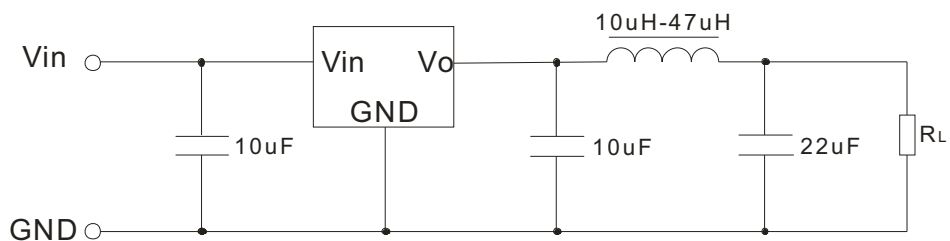
TYPICAL APPLICATION CIRCUIT



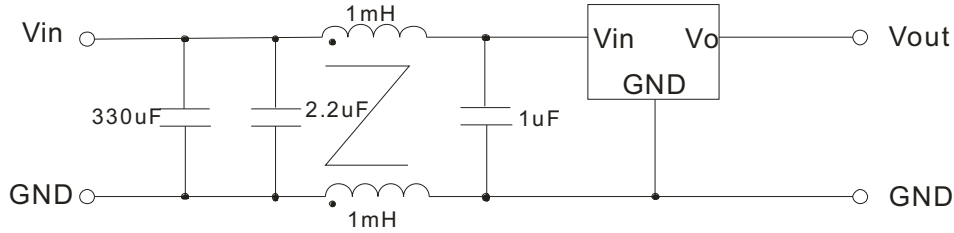
INPUT FILTER CIRCUIT



OUTPUT FILTER CIRCUIT

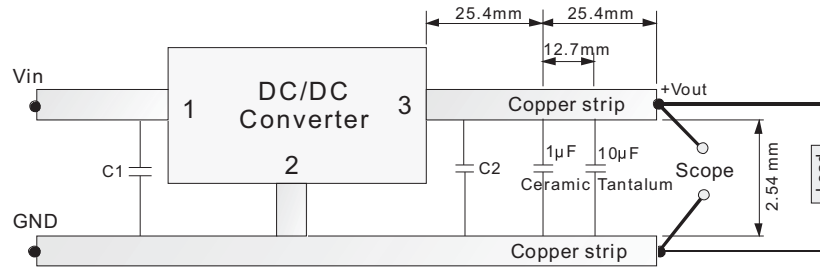


EMC RECOMMENDED CIRCUIT

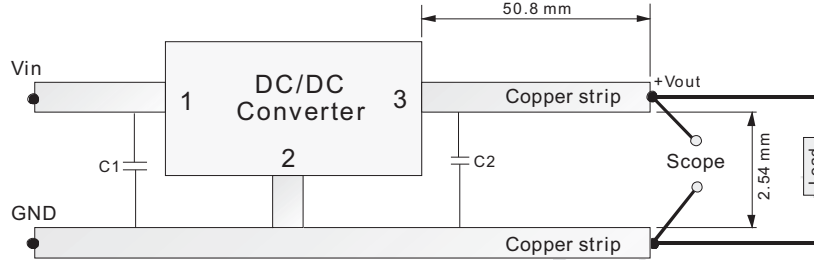


TEST CONFIGURATION

Efficiency and Output Voltage Ripple Test

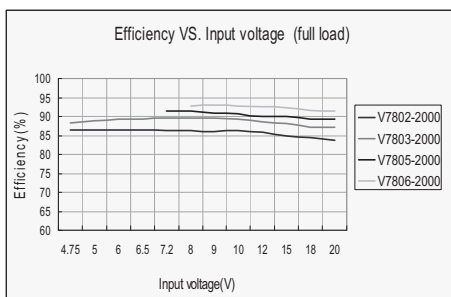


Start-up and Load Transient Response Test

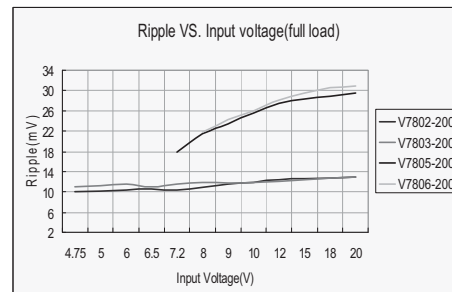
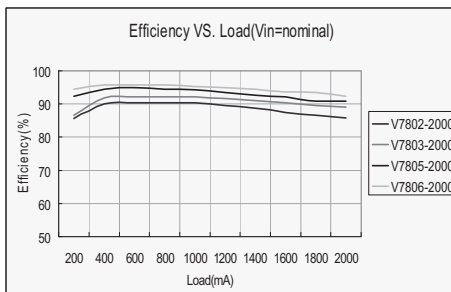
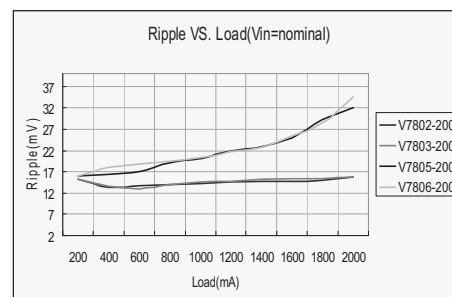


EFFICIENCY AND RIPPLE CURVES

Efficiency



Ripple



REVISION HISTORY

rev.	description	date
1.0	initial release	06/17/2010
1.01	V-Infinity branding removed	09/06/2012

The revision history provided is for informational purposes only and is believed to be accurate.



CUI INC[®]

Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

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