Features

Unregulated Converters

- Triple Outputs (-24V, -48V &-72V)
- Input/Output 1kVDC Isolation
- Industrial Temperature Range
- UL94V-0 Package Material
- Internal SMD Construction
- No External Components required
- Efficiency to 80%

INNOLINE

DC/DC-Converter

RxxTR... Series

3 Watt
SIP8
Triple Output

RECOM

Selection Guide 5V and 12V Input Types

Part Number	Nom. Input Voltage	Output	Rated Output Voltage	Output Current 1) Min Load	Output Current 1) Full Load	Output Current 2) Min Load	Output Current 2) Full Load
SIP 8	(VDC)		(VDC)	(mA)	(mA)	(mA)	(mA)
R05TR244872	5	Vo1	-24	1.4	42	4.2	126
		Vo2	-48	0.7	21	2.1	63
		Vo3	-72	0.5	14	1.4	42
R12TR244872	12	Vo1	-24	1.4	42	4.2	126
		Vo2	-48	0.7	21	2.1	63
		Vo3	-72	0.5	14	1.4	42

1). Assuming all 3 channels are equally loaded.
2). Assuming only 1 channel is loaded.

Absolute Maximum Ratings

Input Voltage V_{IN}	05V types 12V types	7VDC 15VDC
Short Circuit Duration 3)		1 s
Control Voltage, SD		V_{IN}
Operating Temperature Range (all output types)		–40°C min. to +85°C
Lead Temperature 1.5mm from Case for 10 seconds		300°C
Output Power Delivery		3W

3). Supply voltage must be discontinued at the end of the short circuit duration.

Specifications (measured at T_A=25°C, at nominal input voltage and rated output current unless otherwise specified)

Input Voltage Range V_{IN} (continuous operation)	5V types 12V types	4.5VDC min. / 5.5VDC max. 10.8VDC min. / 13.2VDC max.
Ripple Current (I_{RIPPLE})	5V types 12V types	85mA 66mA
Zero Load Input Current (I_{CCZL})	5V types, 0% output load 12V types, 0% output load	50mA typ. / 80mA max. 27.5mA typ. / 50mA max.
Internal Power Dissipation (P_{DISS})	5V types, 0% output load 12V types, 0% output load	250mA typ. / 400mA max. 490mA typ. / 600mA max.
Shut Down Operating Threshold	Switch voltage (V_{SD}) Sink current (I_{SD})	1.30V min. / 1.90V max. 170µA min. / 300µA max.
Shut Down Pin Current Sink	5V types, V_{SD} = 5.0V 12V types, V_{SD} = 12.0V	0.80mA min. / 1.10mA max. 0.80mA min. / 1.10mA max.
Input Quiescent Current During Shut Down	5V types, V_{SD} = 5.0V 12V types, V_{SD} = 12.0V	9mA typ. / 14mA max. 7mA typ. / 15mA max.
Total Rated Power (P_{OUT}) Total of all outputs or any single output		0.1W min. / 3.0W max.
Output Current (I_{OUT}) From any single 24V output		4.2mA min. / 126mA max.
Single Channel Voltage Setpoint Accuracy	P_{OUT} = 100mW P_{OUT} = 3mW	0% min. / 10% max. 7.5% min. / 2.5% max.

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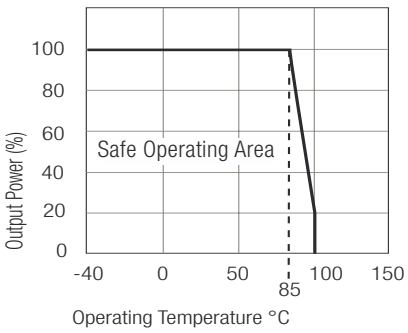
Derating-Graph
(Ambient Temperature)



RxxTR244872 Series

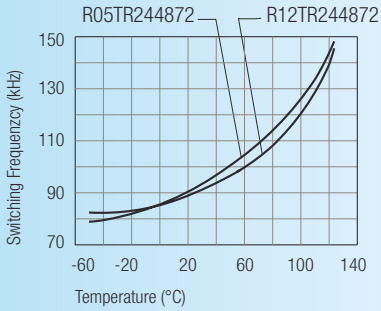
Specifications (measured at T_A=25°C, at nominal input voltage and rated output current unless otherwise specified)

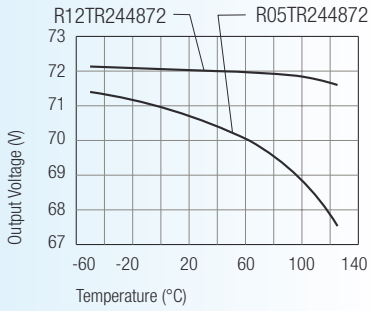
Output Voltage (V_{OUT}) - Vo1	P_{OUT} = 100mW P_{OUT} = 3W	24.0V min. / 26.4V max. 22.2 Vmin. / 24.6V max.
Output Voltage (V_{OUT}) - Vo2	P_{OUT} = 100mW P_{OUT} = 3W	48.0V min. / 52.8V max. 44.4V min. / 49.2V max.
Output Voltage (V_{OUT}) - Vo3	P_{OUT} = 100mW P_{OUT} = 3W	72.0V min. / 79.2V max. 66.6V min. / 73.8V max.
Line Regulation (V_{IN} = 90% to 110% of nominal)		1.01% typ. / 1.2% max.
Load Regulation (10% to 100% full load)	P_{OUT} = 100mW to 3W	6% typ. / 15% max.
Ripple and Noise (DC to 20MHz single channel, 24V)		400mVp-p max.
Isolation Voltage (V_{ISOL}) (flash tested for 1 second)		1000VDC min.
Isolation Capacitance (C_{ISOL})	5V types, 1 MHz, 1V 12V types, 1 MHz, 1V	65pF 130pF
Insulation Resistance (1000VDC test)		1 GΩ min. /10 GΩ typ.
Leakage Current (I_L)	5V types, 220V AC, 50Hz 12V types, 220V AC, 50Hz	4.5µA 10.4µA
Efficiency (all channels or any single channel)		75% min.
Switching Frequency (f_{OSC})		50kHz min.
Oscillator Voltage Coefficient (f_{VCO})	V_{IN} = 90% to 110% of nominal	20%
Package Weight		3.85 g
Case Temperature Rise Above Ambient	1 litre static air chamber	27°C typ
Output Voltage Temperature Coefficient (V_{TCO})	T_A = -40°C to T_A = +85°C	15mV/°C typ.
Oscillator Temperature Coefficient (f_{TCO})	T_A = -40°C to T_A = +85°C	300Hz/°C typ.
Operating Temperature (T_A)		–40°C min. / +85°C max.
Storage Temperature Range		–50°C to +125°C max.
MTBF (depending on the type) [1] –40°C +25°C +85°C } *Detailed Information see Application Notes chapter "MTBF"*		174 x 10³hours min. 145 x 10³hours min. 121 x 10³hours min.

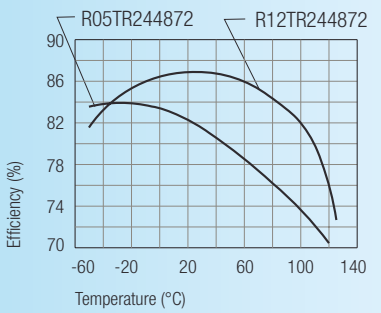
[1]. Calculated using MIL-HDBK-217F with nominal input voltage at full load.Please contact us, if you need exact parameters for the converter you have selected.

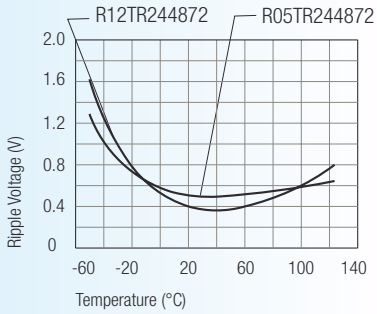
Typical Characteristics, Tolerance Envelope

Thermal Characterisation

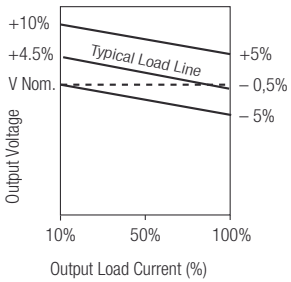








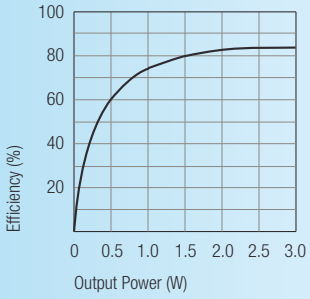
Tolerance Envelope

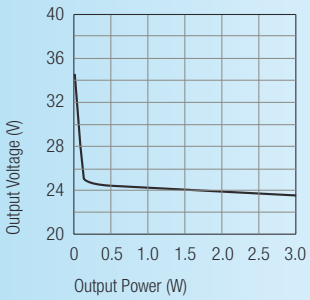


RxxTR244872 Series

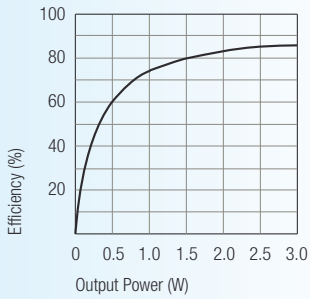
Typical Characteristics

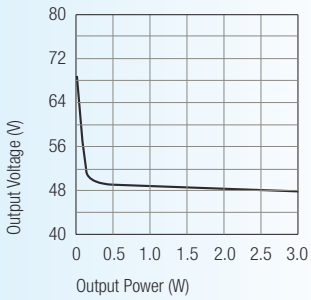
Channel V_O1 (nominal 24V)



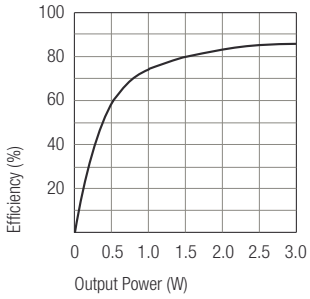


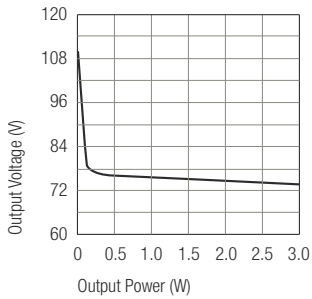
Channel V_O2 (nominal 48V)





Channel V_O3 (nominal 72V)

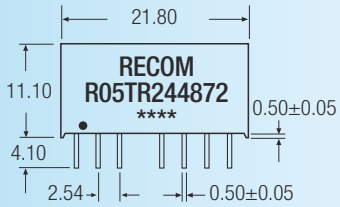


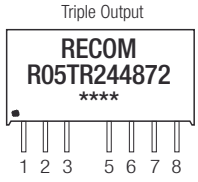


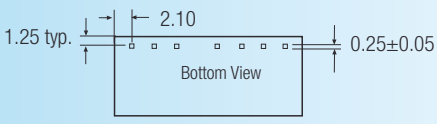
Package Style and Pinning (mm)

3rd angle projection

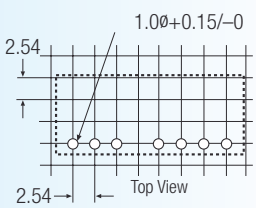
8 PIN SIP Package







Recommended Footprint Details



Pin Connections

Pin #	Triple
1	+Vin
2	-Vin
3	SD (Shut Down)
5	Com
6	Vo1
7	Vo2
8	Vo3

NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm