

EUROLINE - DC/DC-Converter

RxxTR244872-Series, 3 Watt, SIP8, Regulated, (Triple Output)

RECOM

Features

- Input/Output 1kVDC Isolation
- UL 94V-0 Package Material
- Internal SMD Construction
- Industrial Temperature Range
- No External Components required
- Triple Outputs (-24V, -48V & -72V)



Selection Guide 5V and 12V Input Types

Part Number	Nom. Input Voltage (VDC)	Output	Rated Output Voltage (VDC)	Output Current ¹⁾		Output Current ²⁾	
				Min Load (mA)	Full Load (mA)	Min Load (mA)	Full Load (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.

Electrical Specifications (measured at $T_A=25^\circ\text{C}$, 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	85 mA 66 mA
Zero Load Input Current (I_{CCZL})	5V types, 0% output load 12V types, 0% output load	50 mA typ. / 80 mA max. 27.5 mA typ. / 50 mA max.
Internal Power Dissipation (P_{DISS})	5V types, 0% output load 12V types, 0% output load	250 mW typ. / 400 mW max. 330 mW typ. / 600 mW max.
Operating Threshold	Switch voltage (V_{SD}) Sink current (I_{SD})	1.30 V min. / 1.90 V max. 170 μA min. / 300 μA max.
Shut Down Pin Current Sink	5V types, $V_{SD} = 5.0\text{V}$ 12V types, $V_{SD} = 12.0\text{V}$	0.80 mA min. / 1.10 mA max. 2.20 mA min. / 3.00 mA max.
Input Quiescent Current During Shut Down	5V types, $V_{SD} = 5.0\text{V}$ 12V types, $V_{SD} = 12.0\text{V}$	14 mA 15 mA
Total Rated Power (P_{OUT})	Total of all outputs or any single output	0.1 W min. / 3.0 W max.
Output Current (I_{OUT})	From any single 24V output	4.2 mA min. / 126 mA max.
Single Channel Voltage Setpoint Accuracy	$P_{OUT} = 100\text{mW}$ $P_{OUT} = 3\text{W}$	0% min. / 10% max. -7.5% min. / 2.5% max.

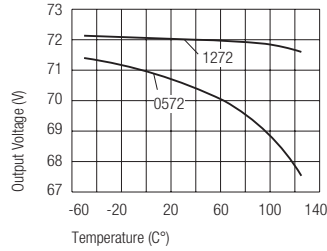
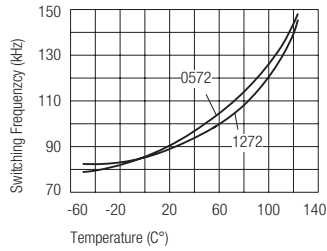
Electrical Specifications (measured at $T_A = 25^\circ\text{C}$, at nominal input voltage and rated output current unless otherwise specified)

Output Voltage (V_{OUT}) - Vo1	$P_{OUT} = 100\text{mW}$ $P_{OUT} = 3\text{W}$	24.0 V min. / 26.4 V max. 22.2 V min. / 24.6 V max.
Output Voltage (V_{OUT}) - Vo2	$P_{OUT} = 100\text{mW}$ $P_{OUT} = 3\text{W}$	48.0 V min. / 52.8 V max. 44.4 V min. / 49.2 V max.
Output Voltage (V_{OUT}) - Vo3	$P_{OUT} = 100\text{mW}$ $P_{OUT} = 3\text{W}$	72.0 V min. / 79.2 V max. 66.6 V min. / 73.8 V max.
Line Regulation ($V_{IN} = 90\%$ to 110% of nominal)		1.01% typ. / 1.2% max.
Load Regulation (P_{OUT})	$P_{OUT} = 100\text{mW}$ to 3W	8% typ. / 15% max.
Ripple and Noise (DC to 20MHz single channel, 24V)		0mVp-p min. / 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	65 pF 130 pF
Insulation Resistance (1000VDC test)		1 G Ω min. / 10 G Ω typ.
Leakage Current (I_L)	5V types, 220V AC, 50Hz 12V types, 220V AC, 50Hz	4.5 μA 10.4 μA
Efficiency (all channels or any single channel)		75% min. to 85% max.
Switching Frequency (f_{OSC})		85 kHz typ.
Oscillator Voltage Coefficient (f_{VCO})	$V_{IN} = 90\%$ to 110% of nominal	20%
Package Weight		3.85 gm
Case Temperature Rise Above Ambient	1 litre static air chamber	27°C typ
Output Voltage Temperature Coefficient (V_{TCO})	$T_A = -40^\circ\text{C}$ to $T_A = +85^\circ\text{C}$	15 mV/°C typ.
Oscillator Temperature Coefficient (f_{TCO})	$T_A = -40^\circ\text{C}$ to $T_A = +85^\circ\text{C}$	300 Hz/°C typ.
Operating Temperature (T_A)		-40°C min. / +85°C max.
Storage Temperature Range		-50°C to +125°C max.
MTTF (depending on the type) ¹⁾	- 40°C +25°C +85°C	174kHrs min. / 174kHrs max. 145kHrs min. / 145kHrs max. 121kHrs min. / 121kHrs max.

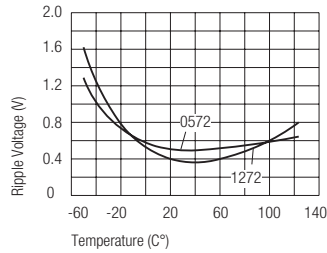
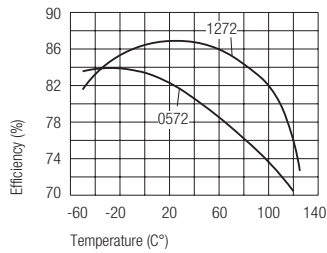
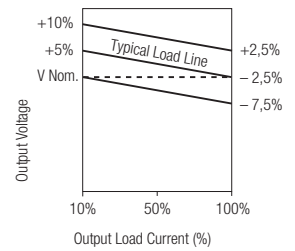
¹⁾ Calculated using MIL-HDBK-217F with nominal input voltage at full load.
Please contact us, if you need exact parameters for the converter you have selected.

Typical Characteristics, Tolerance Envelope and Derating Graph

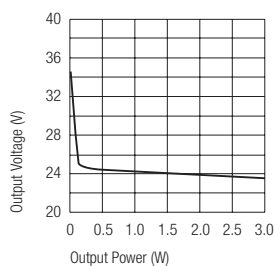
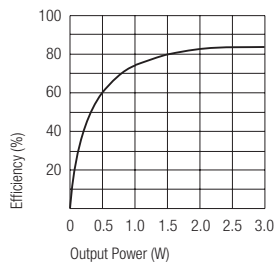
Thermal Characterisation



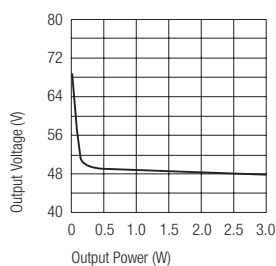
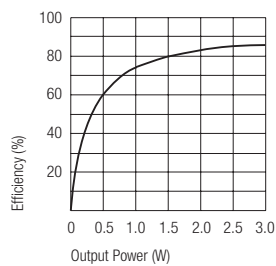
Tolerance Envelope



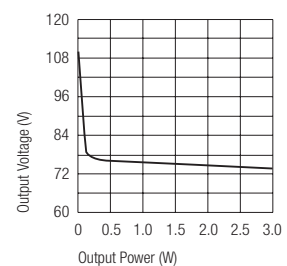
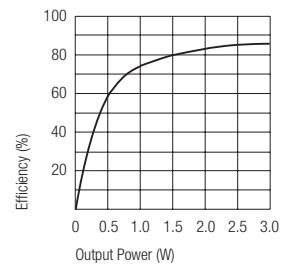
Channel Vo1 (nominal 24V)



Channel Vo2 (nominal 48V)

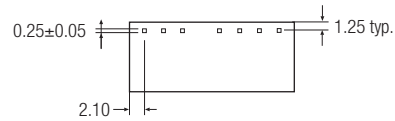
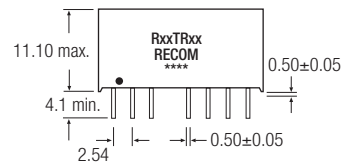
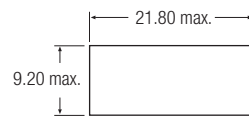
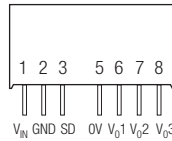


Channel Vo3 (nominal 72V)



Package Style and Pinning (mm)

8 Pin SIP Package Style



Recommended Footprint Details

