

Features

Unregulated Converters

- 1kVDC Isolation
- Internal SMD Construction
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Efficiency to 85%

Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
SMD (3kV)	(VDC)	(VDC)	(mA)	(%)
RTS-xx3.3 (H)	5, 9, 12, 15, 24	3.3	606	70-75
RTS-xx05 (H)	5, 9, 12, 15, 24	5	400	80-85
RTS-xx09 (H)	5, 9, 12, 15, 24	9	222	80-85
RTS-xx12 (H)	5, 9, 12, 15, 24	12	167	80-85
RTS-xx15 (H)	5, 9, 12, 15, 24	15	133	80-85
RTS-xx24 (H)	5, 9, 12, 15, 24	24	83	80-85
RTD-xx05 (H)	5, 9, 12, 15, 24	±5	±200	70-75
RTD-xx09 (H)	5, 9, 12, 15, 24	±9	±111	75-78
RTD-xx12 (H)	5, 9, 12, 15, 24	±12	±83	75-83
RTD-xx15 (H)	5, 9, 12, 15, 24	±15	±66	75-85
RTD-xx24 (H)	5, 9, 12, 15, 24	±24	±42	78-85

xx = Input Voltage

* add Suffix "P" for Continuous Short Circuit Protection, e.g. RTS-0505/P, RTD-0505/P

Description

Compared to standard 2 Watt packages, space savings of 80% and 77% respectively are achieved by these RTS & RTD 2 Watts SMD-Miniature DC/DC Converters. They have been specifically designed for applications where board space is at a premium since these 2 Watt converters have only a slightly larger foot print than conventional 1 Watt converters.

With efficiencies up to 85%, external cooling is not needed, as the full output power is available over the operating temperature range -40°C to +85°C. All converters have an I/O-Isolation of 1kVDC, or optionally 3kV, making them suitable for many applications.

Specifications (Core Operating Area)

Input Voltage Range	±10%		
Output Voltage Accuracy	±5%		
Line Voltage Regulation	1.2%/1% of Vin max.		
Load Voltage Regulation (10% to 100% full load)	3.3V output types	20% max.	
	5V output type	15% max.	
	9V, 12V, 15V, 24V output types	10% max.	
Output Ripple and Noise (20MHz limited)	150mVp-p max.		
Operating Frequency	20kHz min. / 50kHz typ. / 85kHz max.		
Efficiency at Full Load	70% min. / 80% typ.		
No Load Power Consumption	RTS typ.	124mW min. / 186mW typ. / 250mW max.	
	RTD typ.	159mW min. / 192mW typ. / 240mW max.	
Isolation Voltage		(tested for 1 second)	1000VDC min.
	H-Suffix	(tested for 1 second)	3000VDC min.
Rated Working Voltage		(long term isolation)	see Application Notes
Isolation Capacitance	40pF min. / 115pF max.		
Isolation Resistance	10 GΩ min.		
Short Circuit Protection P-Suffix	1 Second Continuous		
Operating Temperature Range (free air convection)	-40°C to +85°C (see Graph)		
Storage Temperature Range	-55°C to +125°C		

continued on next page

ECONOLINE

DC/DC-Converter

RTS & RTD Series

2 Watt SMD Single & Dual Output

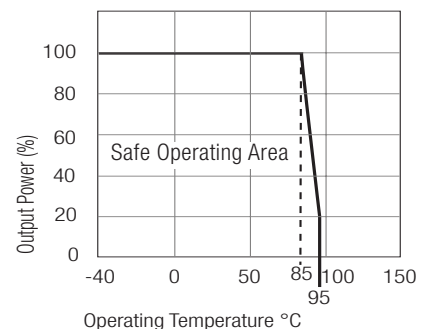


EN-60601-1 Certified (Suffix H3)

** add suffix -R for tape&reel packing e.g. RTS-0505-R. For more details and dimensions of the tapes and reels see page 334 to 336.



Derating-Graph (Ambient Temperature)

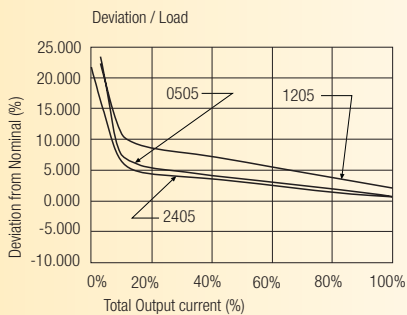
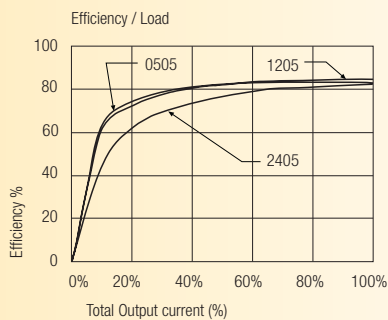


Specifications (Core Operating Area)

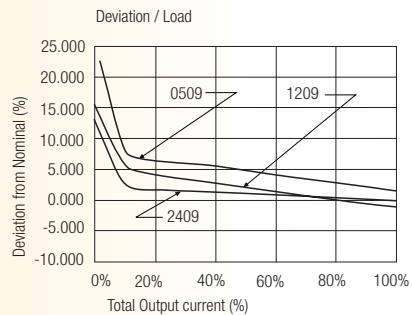
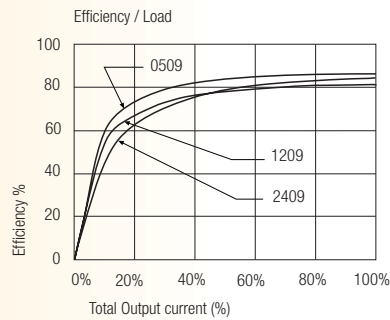
Reflow Temperature	ROHS compliant (for more details see Application Notes)	245°C (30 sec) max.
Relative Humidity		95% RH
Package Weight	RTS types	2.1g
	RTD types	2.5g
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F
		886 x 10 ³ hours
(+85°C)	using MIL-HDBK 217F	128 x 10 ³ hours

Typical Characteristics

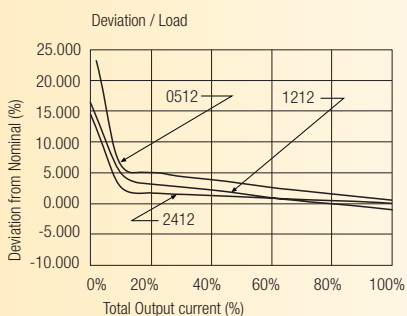
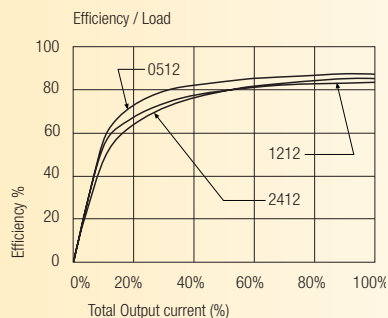
RTS-xx05



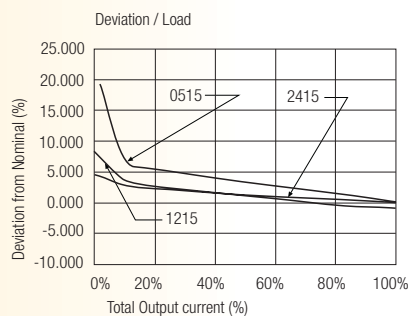
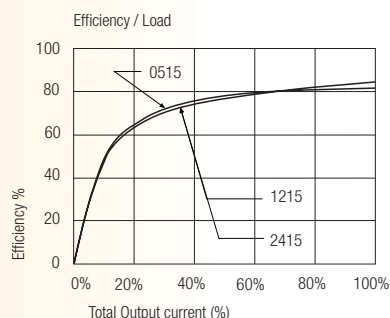
RTS-xx09



RTS-xx12

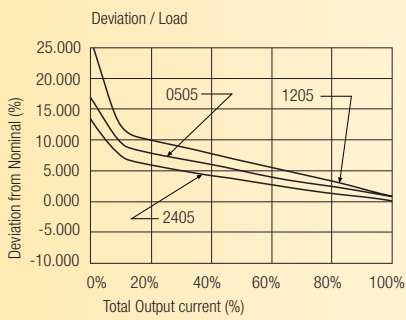
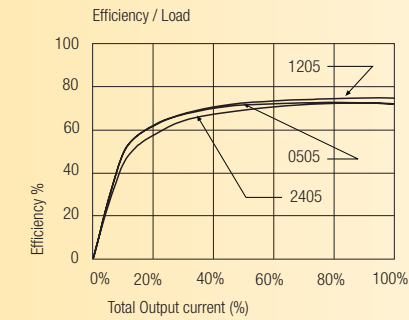


RTS-xx15

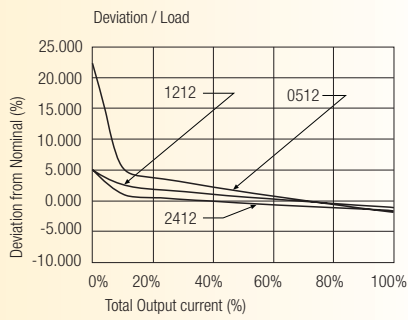
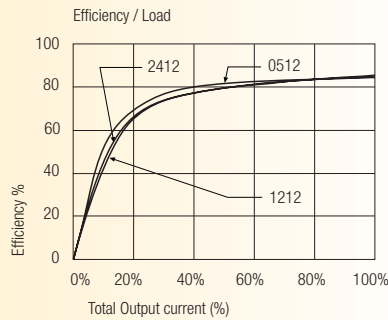


Typical Characteristics

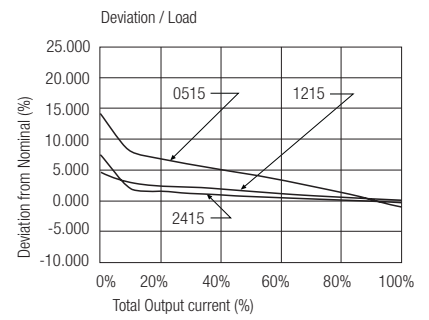
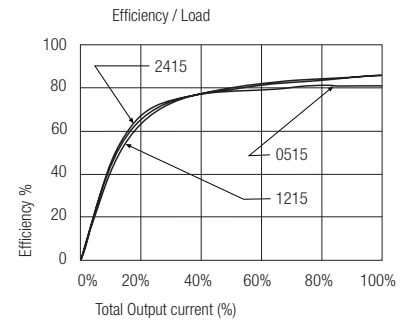
RTD-xx05



RTD-xx12

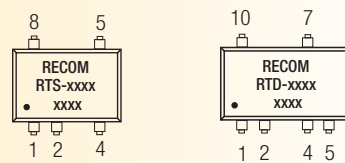
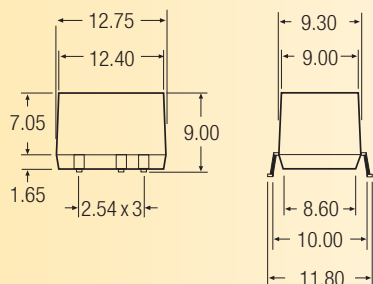


RTD-xx15

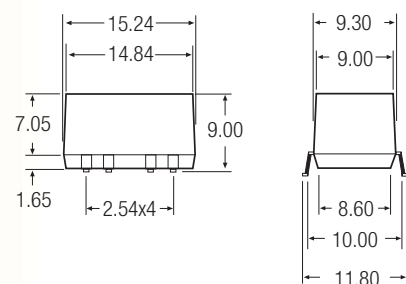


Package Style and Pinning (mm)

8 PIN Single SMD Package



10 PIN Dual SMD Package

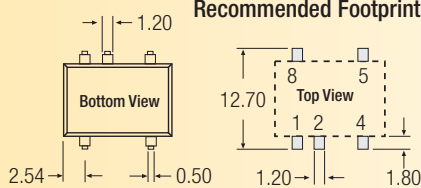


Pin Connections

Pin #	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
4	-Vout	Com
5	+Vout	-Vout
7	No Pin	+Vout
8	NC	No Pin
10	No Pin	NC

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

Recommended Footprint Details



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