

## Features

## Unregulated Converter

- 1 : 1 Input Range
- 0.5W SMD Package
- Efficiency up to 80%
- Approved for Medical Applications
- 1kVDC and 3 kVDC Isolation Option
- Operating Temperature from -40°C to +100°C

### Specifications (measured at $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

Part Number SMD	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	Max Capacitive Load <sup>(1)**</sup>
R0.5S**-3.305*	3.3	5	100	80	1000 $\mu\text{F}$
R0.5S**-3.312*	3.3	12	42	77	150 $\mu\text{F}$
R0.5S**-3.315*	3.3	15	33	77	150 $\mu\text{F}$
R0.5S**-0505*	5	5	100	72	1000 $\mu\text{F}$
R0.5S**-0512*	5	12	42	77	150 $\mu\text{F}$
R0.5S**-0515*	5	15	33	79	150 $\mu\text{F}$
R0.5S**-1205*	12	5	100	74	1000 $\mu\text{F}$
R0.5S**-1212*	12	12	42	75	150 $\mu\text{F}$
R0.5S**-1215*	12	15	33	75	150 $\mu\text{F}$
R0.5S**-2405*	24	5	100	75	1000 $\mu\text{F}$
R0.5S**-2412*	24	12	42	77	150 $\mu\text{F}$
R0.5S**-2415*	24	15	33	77	150 $\mu\text{F}$
R0.5D**-3.305*	3.3	$\pm 5$	$\pm 50$	79	$\pm 470\mu\text{F}$
R0.5D**-3.312*	3.3	$\pm 12$	$\pm 21$	76	$\pm 68\mu\text{F}$
R0.5D**-3.315*	3.3	$\pm 15$	$\pm 17$	77	$\pm 68\mu\text{F}$
R0.5D**-0505*	5	$\pm 5$	$\pm 50$	79	$\pm 470\mu\text{F}$
R0.5D**-0512*	5	$\pm 12$	$\pm 21$	77	$\pm 68\mu\text{F}$
R0.5D**-0515*	5	$\pm 15$	$\pm 17$	79	$\pm 68\mu\text{F}$
R0.5D**1205*	12	$\pm 5$	$\pm 50$	76	$\pm 470\mu\text{F}$
R0.5D**1212*	12	$\pm 12$	$\pm 21$	75	$\pm 68\mu\text{F}$
R0.5D**1215*	12	$\pm 15$	$\pm 17$	75	$\pm 68\mu\text{F}$
R0.5D**2405*	24	$\pm 5$	$\pm 50$	77	$\pm 470\mu\text{F}$
R0.5D**2412*	24	$\pm 12$	$\pm 21$	75	$\pm 68\mu\text{F}$
R0.5D**2415*	24	$\pm 15$	$\pm 17$	75	$\pm 68\mu\text{F}$

\*add Suffix "/H" for 3kVDC Isolation Voltage

\*add Suffix "/P" for continuous short circuit protection

\*add Suffix "-R" for tape & reel packing

For more details and dimensions of the tapes and reels see Application Notes

R0.5S\*\*:

\*\*without marking denotes 5 pins out of 8 fitted (includes „/H“ option)

\*\*with marking 8 denotes 8 pins out of 8 fitted („/H“ option not available)

\*\*with marking 12 denotes 10 pins out of 12 fitted (includes „/H“ option)

R0.5D\*\*:

\*\*without marking denotes 6 pins out of 10 fitted (includes „/H“ option)

\*\*with marking 10 denotes 10 pins out of 10 fitted („/H“ option not available)

\*\*with marking 12 denotes 10 pins out of 12 fitted (includes „/H“ option)

## ECONOLINE

DC/DC-Converter

with 3 year Warranty

# RECOM

## 0.5 Watt SMD Isolated Single or Dual Output

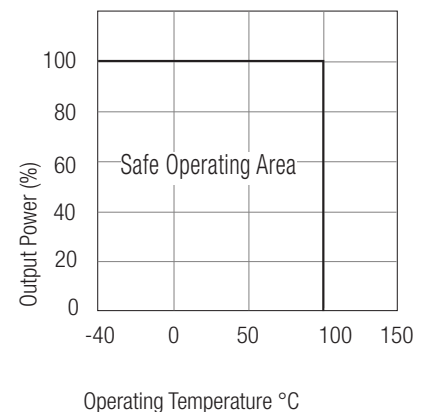


E358085

UL-60950-1 Certified

# R0.5S\_D

## Derating-Graph (Ambient Temperature)



Refer to Application Notes

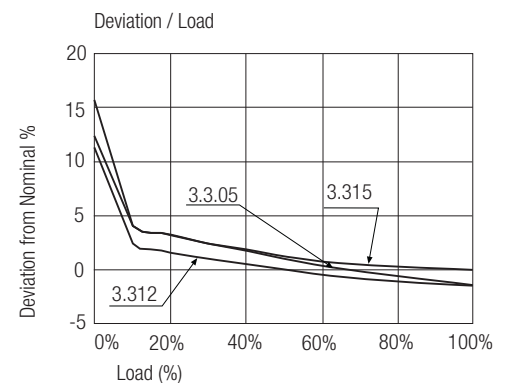
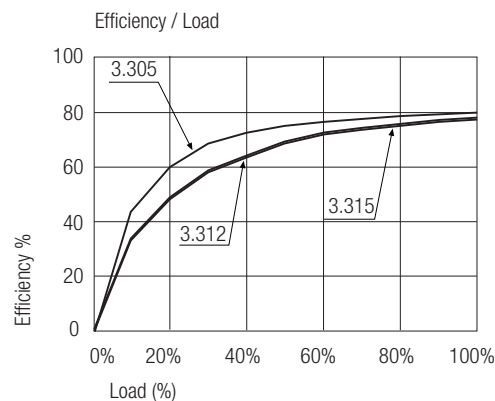
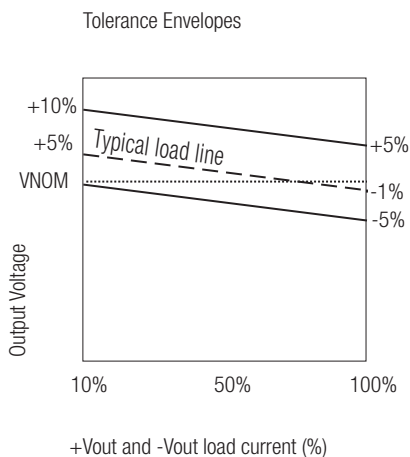
[www.recom-electronic.com](http://www.recom-electronic.com)

### Specifications (measured at $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

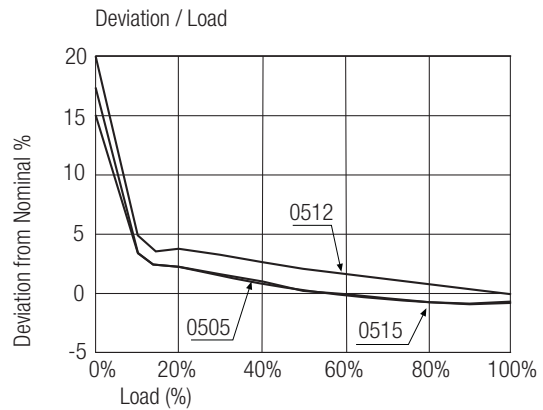
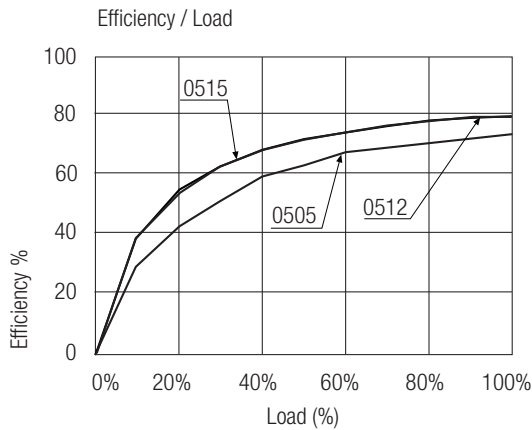
Input Voltage Range	$\pm 10\%$ max.	
Voltage set accuracy	100% Load/nominal $V_{in}$	-1% typ. / $\pm 5\%$ max.
Line Regulation	Low Line to High Line @ max. Load	1.2% typ.
Load Regulation	5V output	6% typ. / 15% max.
(10% to 100% Load)	12/15V output	5% typ. / 10% max.
Ripple & Noise @ 20MHz BW	50 mVp-p typ. / 100mVp-p max.	
Efficiency at Full Load	70% min.	
Operating Temperature	$-40^\circ\text{C}$ to $+100^\circ\text{C}$	
Storage Temperature	$-55^\circ\text{C}$ to $+125^\circ\text{C}$	
Isolation Test Voltage (Tested for 1 second)	R0.5S_R0.5D	1000VDC
	R0.5S_R0.5D/H	3000VDC
Isolation Capacitance	75pF max.	
Isolation Resistance	Viso = 500V	10 G $\Omega$ min.
Humidity	95% max.	
Operating Frequency	$V_{in}$ (nom.)	20kHz min. / 50 kHz typ. / 90 kHz max.
Short-Circuit Protection	1 Second	
MTBF	Using MIL-HDBK 217F ( $+100^\circ\text{C}$ )	$1003 \times 10^3$ hours
	Using MIL-HDBK 217F ( $+25^\circ\text{C}$ )	$3962 \times 10^3$ hours
<i>Detailed Information see Application Notes chapter „MTBF“</i>		
Weight	Single Types	1.0 g
	Dual Types	1.2 g
Certifications		
UL General Safety	Report: E358085	UL 60950-1 2nd Ed.

### Typical Characteristics

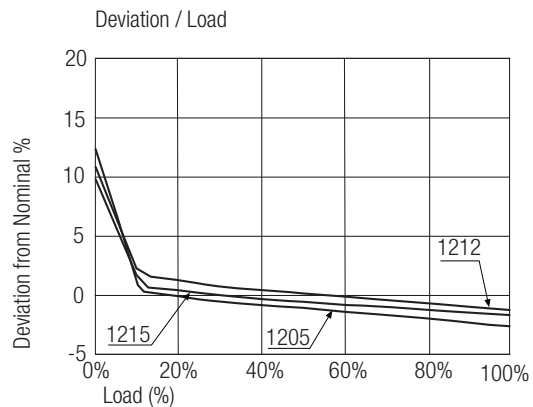
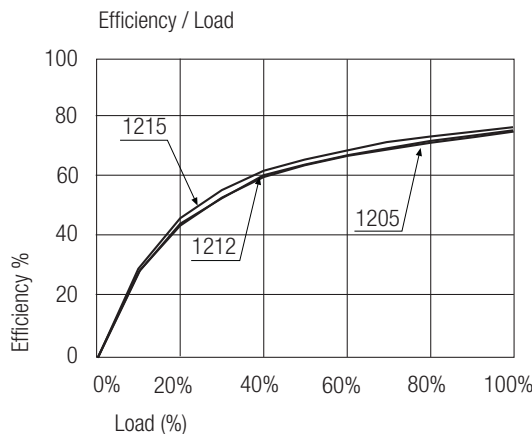
## R0.5S-3.3xx



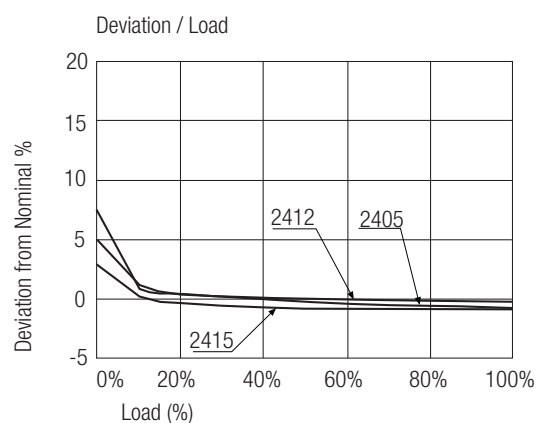
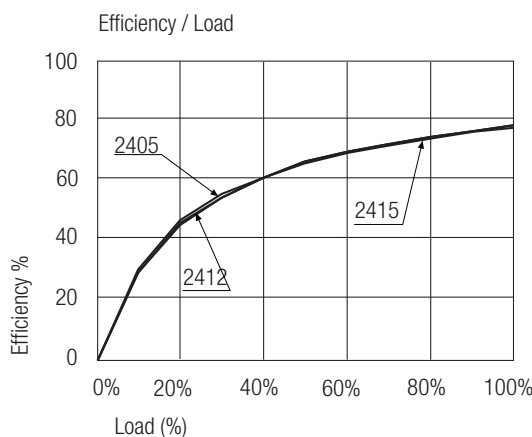
## R0.5S-05xx



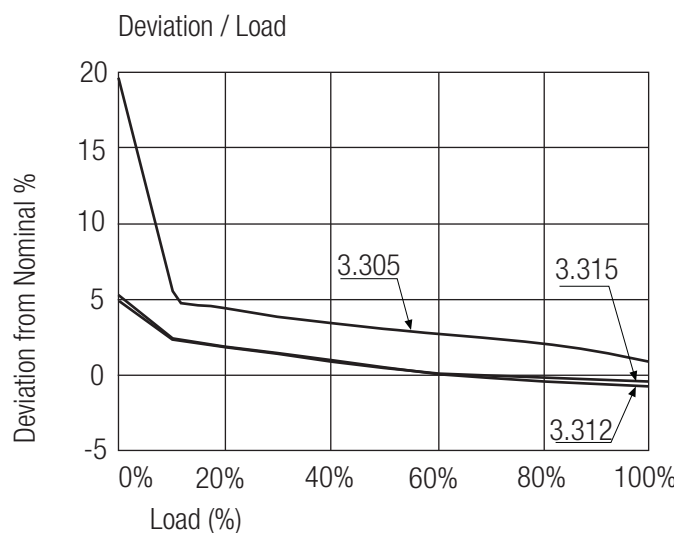
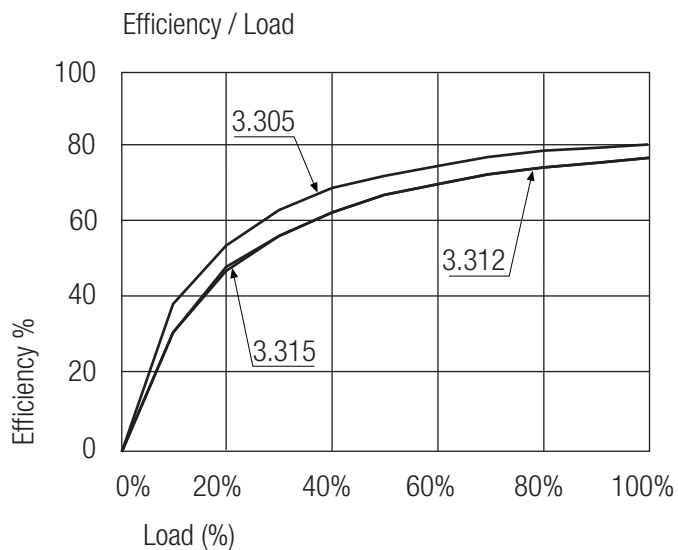
## R0.5S-12xx



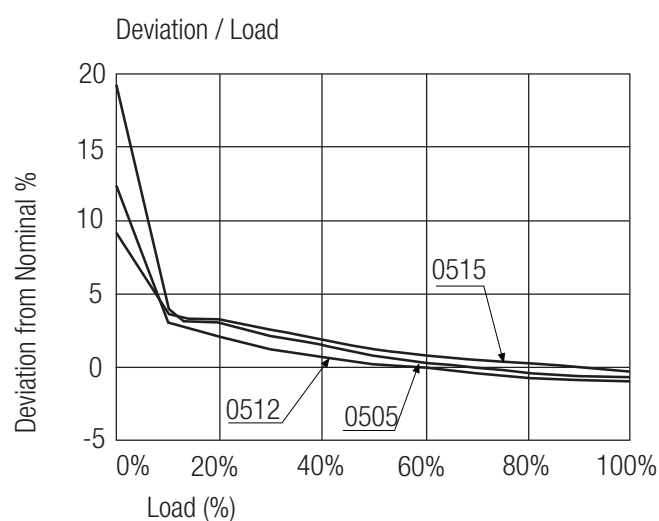
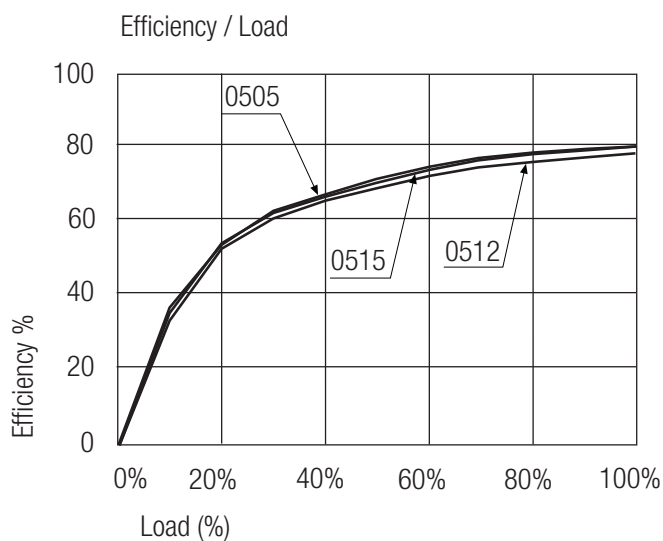
## R0.5S-24xx



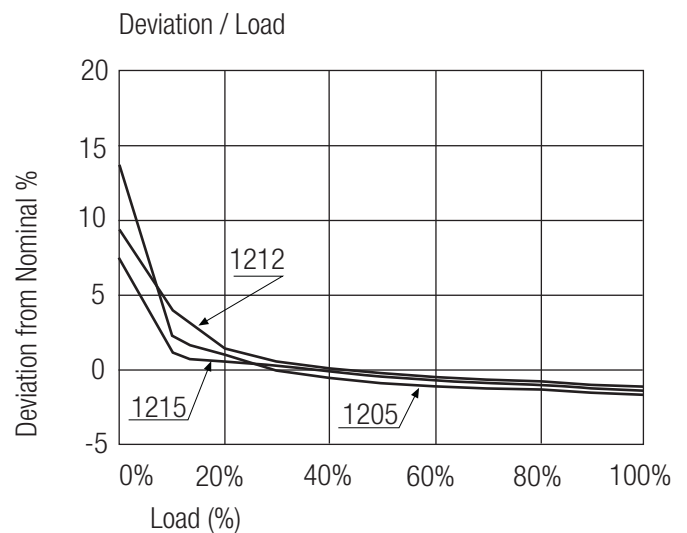
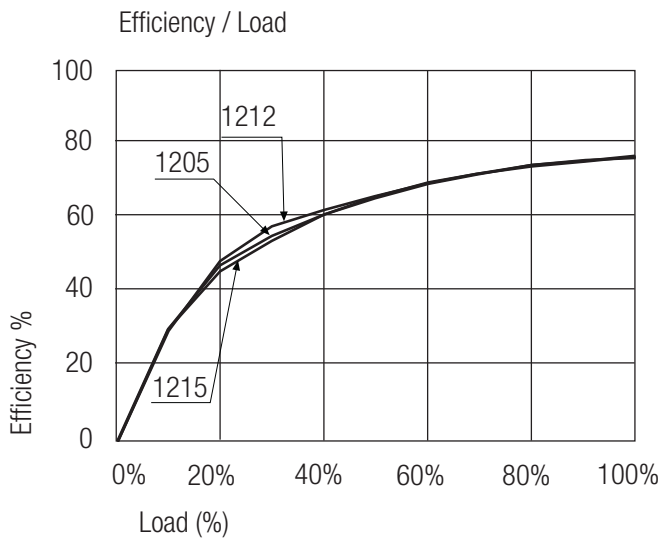
## R0.5D-3.3xx



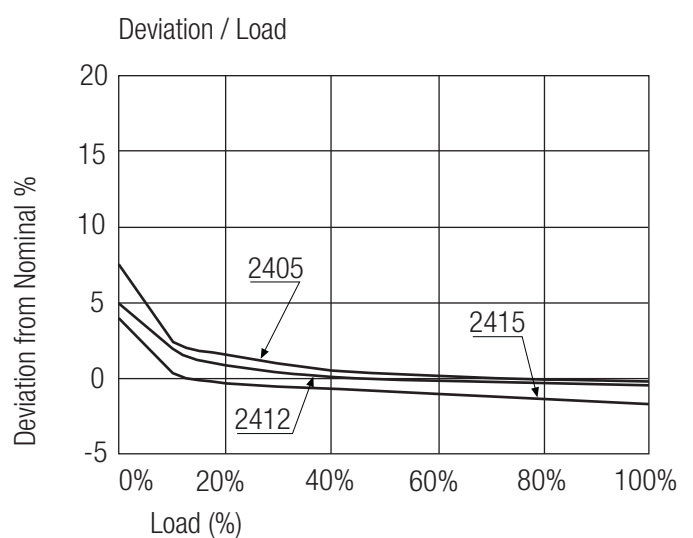
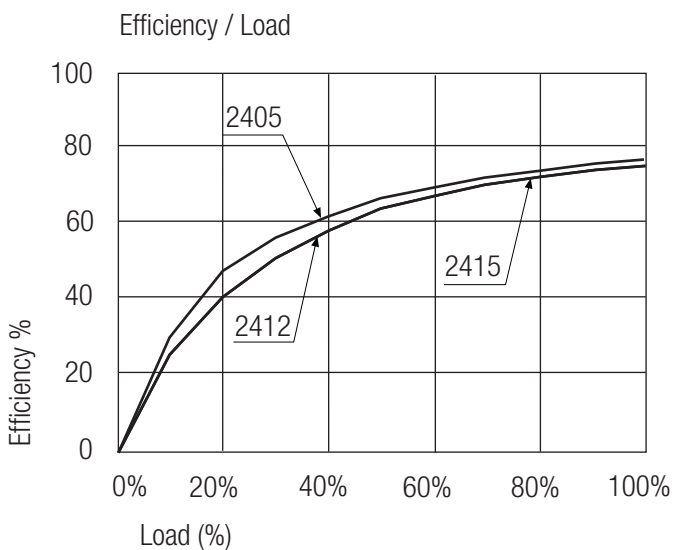
## R0.5D-05xx



## R0.5D-12xx



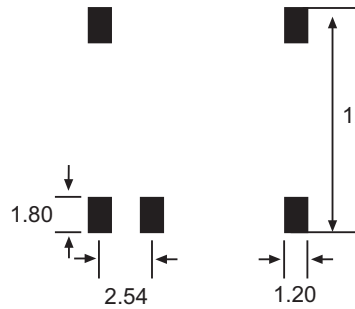
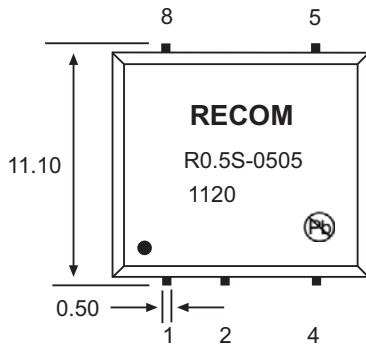
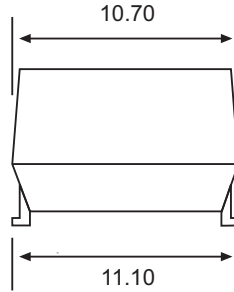
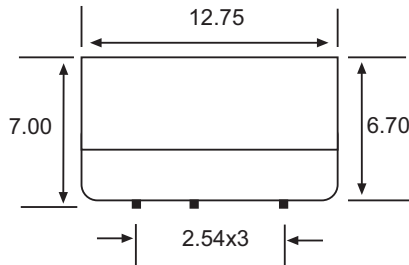
## R0.5D-24xx



### Package Style and Pinning (mm)



#### 5 PINS Single SMD Package



#### Footprint

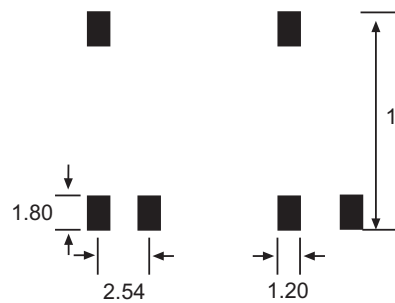
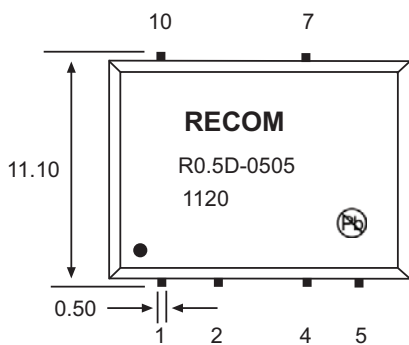
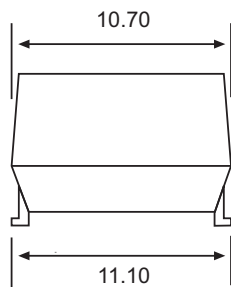
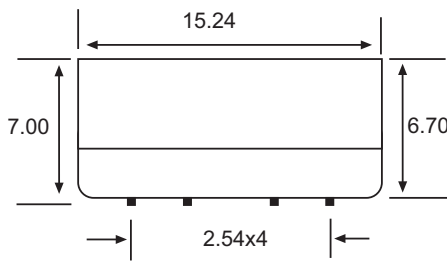
#### Pin Connections

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

UNIT: mm  
TOL.: ± 0.25 mm

#### 6 PINS Dual SMD Package



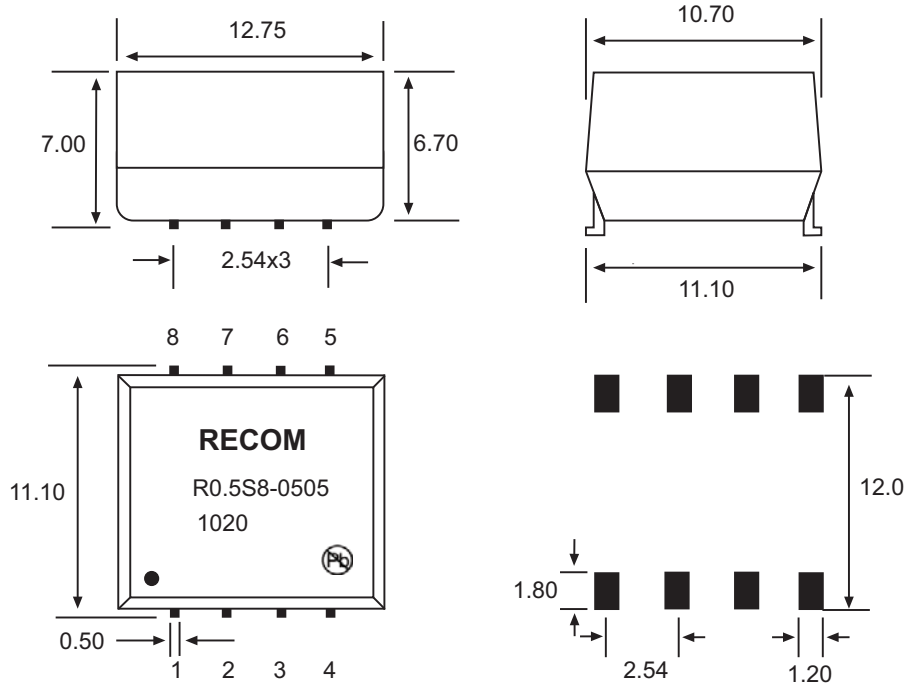
#### Footprint

R0.5S\_D

### Package Style and Pinning (mm)



#### 8 PINS Single SMD Package



#### Footprint

##### Pin Connections

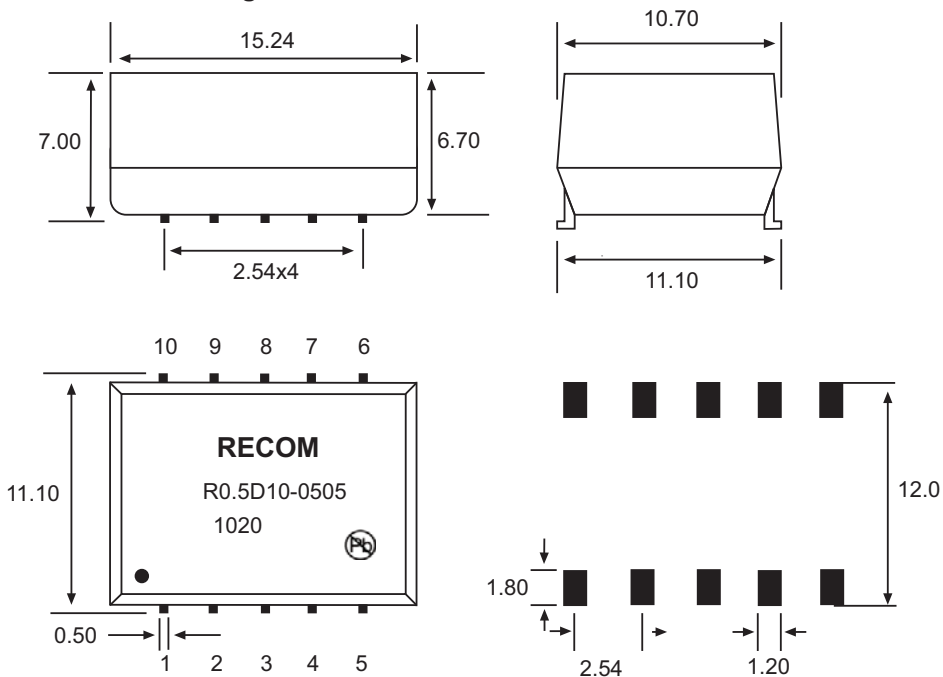
Pin #	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
4	-Vout	Com.
5	+Vout	-Vout
7	NC	+Vout
3, 6, 8	NC	NC
9, 10	No Pin	NC

NC= No Connection

UNIT: mm

TOL.: ± 0.25 mm

#### 10 PINS Dual SMD Package



#### Footprint

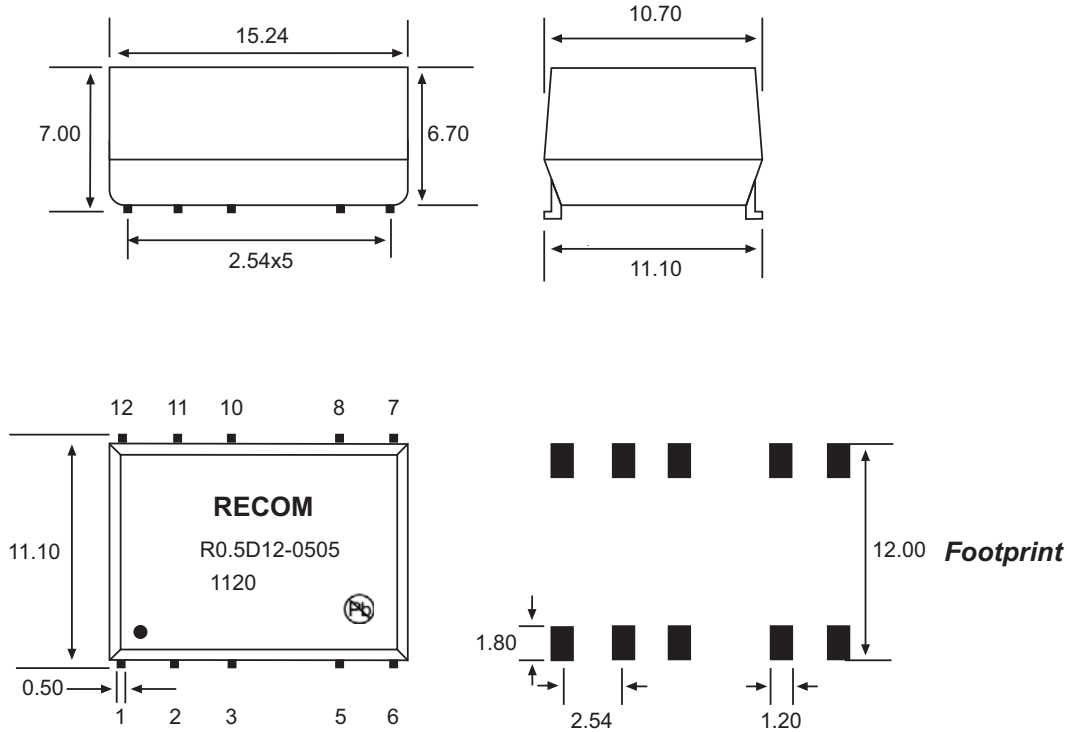
# ECONOLINE

DC/DC-Converter

# R0.55\_D Series

## Package Style and Pinning (mm)

### 12 PINS Dual SMD Package



#### Pin Connections

Pin #	Function Single	Function Dual
1	-Vin	-Vin
2	+Vin	+Vin
5	-Vout	Com.
6	NC	-Vout
8	+Vout	+Vout
3,7,10,11,12	NC	NC

NC= No Connection

Unit: mm

TOL.: ± 0.25 mm

**Footprint**

R0.55\_D