

## Features

## Unregulated Converters

- 1kVDC Isolation
- Internal SMD Construction
- UL94V-0 Package Material
- Power Density 1.8W/cm<sup>3</sup>
- Optional Continuous Short Circuit Protected
- Efficiency to 85%

## Selection Guide

Part Number		Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
SMD	(3kV)				
RSS**-xx1.8	(H)	1.8, 3.3, 5, 9, 12, 15, 24	1.8	555	70
RSS**-xx3.3	(H)	1.8, 3.3, 5, 9, 12, 15, 24	3.3	303	75
RSS**-xx05	(H)	1.8, 3.3, 5, 9, 12, 15, 24	5	200	70-78
RSS**-xx09	(H)	1.8, 3.3, 5, 9, 12, 15, 24	9	111	76-78
RSS**-xx12	(H)	1.8, 3.3, 5, 9, 12, 15, 24	12	84	78-80
RSS**-xx15	(H)	1.8, 3.3, 5, 9, 12, 15, 24	15	66	80-84
RSS**-xx24	(H)	1.8, 3.3, 5, 9, 12, 15, 24	24	42	74-85
RSD**-xx1.8	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±1.8	±278	70
RSD**-xx3.3	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±3.3	±152	70
RSD**-xx05	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±5	±100	74-78
RSD**-xx09	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±9	±56	76-80
RSD**-xx12	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±12	±42	78-82
RSD**-xx15	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±15	±33	78-82
RSD**-xx24	(H)	1.8, 3.3, 5, 9, 12, 15, 24	±24	±21	80-84

RSS\*\* : \*\* without marking denotes standard pinning  
 \*\* with marking **8** denotes with eight pins  
 RSD\*\* : \*\* without marking denotes standard pinning  
 \*\* with marking **10** denotes with ten pins

\* add Suffix "P" for Continuous Short Circuit Protection, e.g. RSS-051.8/P, RSS-051.8/HP

## Specifications (Core Operating Area)

Input Voltage Range			±10%
Output Voltage Accuracy			±5%
Line Voltage Regulation			1.2%/1% of Vin typ.
Load Voltage Regulation	1.8V, 3.3V output types	20% max.	
(10% to 100% full load)	5V output type	15% max.	
	9V, 12V, 15V, 24V output types	10% max.	
Output Ripple and Noise (20MHz limited)			100mVp-p max.
Operating Frequency			50kHz min. / 100kHz typ. / 105kHz max.
Efficiency at Full Load			70% min. / 80% typ.
No Load Power Consumption	RSS & RSS8 types	101mW min. / 126mW typ. / 220mW max.	
	RSD & RSD10 types	87mW min. / 130mW typ. / 230mW 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			15pF min. / 70pF max.
Isolation Resistance			10 GΩ min.
Short Circuit Protection			1 Second
P-Suffix			Continuous
Operating Temperature Range (free air convection)			-40°C to +85°C (see Graph)
Storage Temperature Range			-55°C to +125°C
Reflow Temperature	ROHS compliant (for more details see Application Notes)		245°C (30 sec) max.
Relative Humidity			95% RH

continued on next page

## ECONOLINE

DC/DC-Converter

# RSS\*\* & RSD\*\* Series

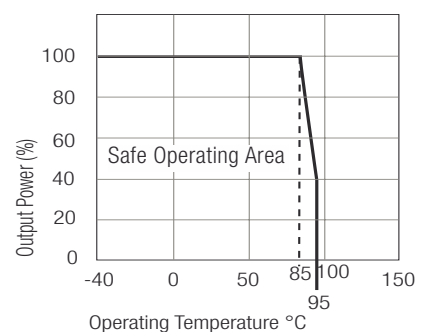
## 1 Watt SMD Single & Dual Output



EN-60950-1 Certified  
 EN-60601-1 Certified (suffix H)



## Derating-Graph (Ambient Temperature)

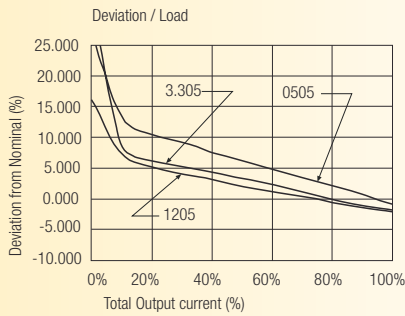
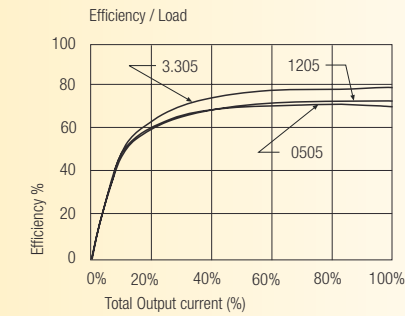


**Specifications (Core Operating Area)**

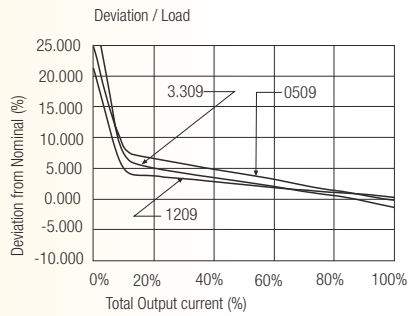
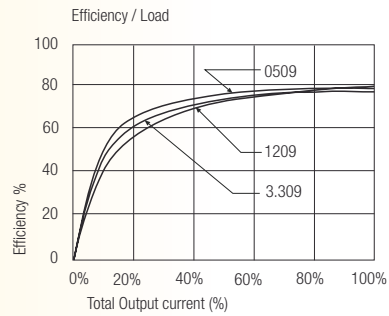
Package Weight	RSS & RSS8 types	1.5g	
	RSD & RSD10 types	2.2g	
MTBF (+25°C) (+85°C)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	1045 x 10 <sup>3</sup> hours
		using MIL-HDBK 217F	183 x 10 <sup>3</sup> hours

**Typical Characteristics**

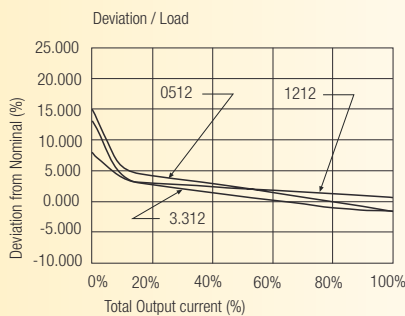
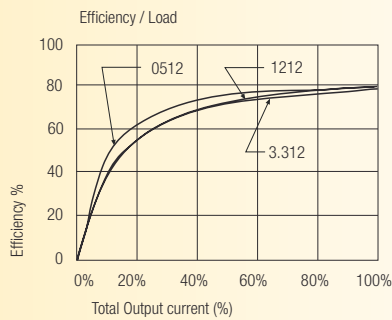
**RSS\*\*-xx05**



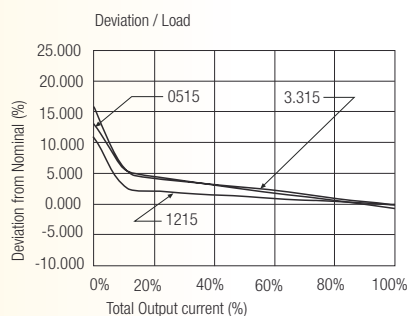
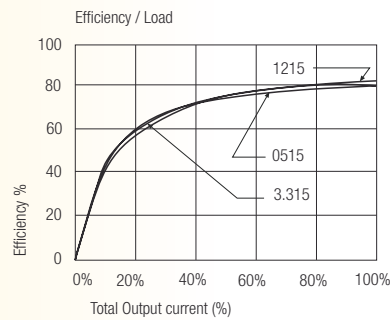
**RSS\*\*-xx09**



**RSS\*\*-xx12**

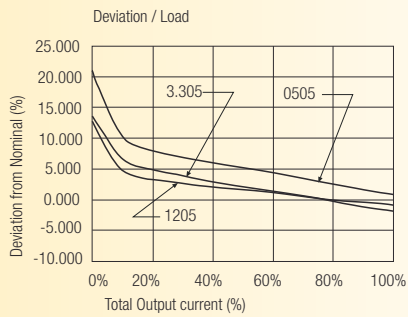
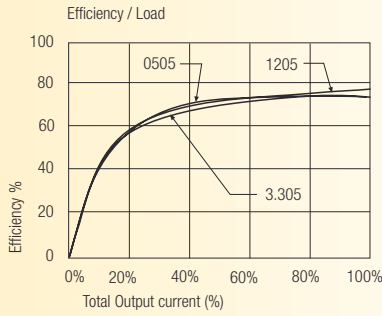


**RSS\*\*-xx15**

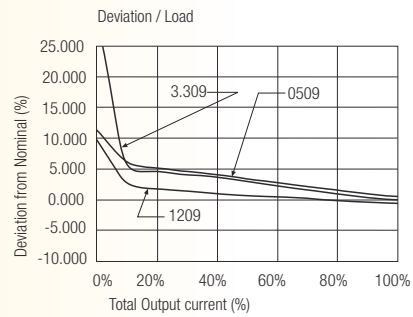
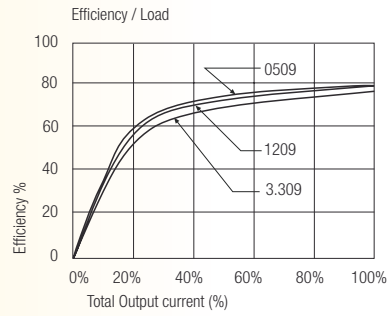


**Typical Characteristics**

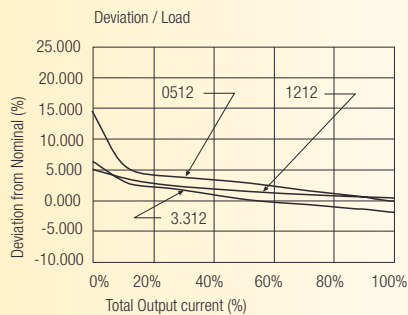
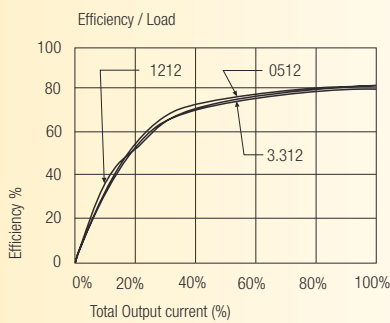
**RSD\*\*-xx05**



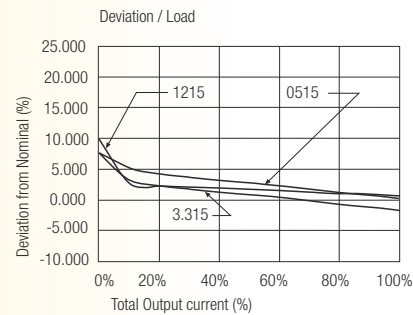
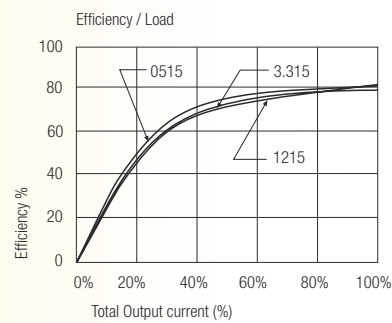
**RSD\*\*-xx09**



**RSD\*\*-xx12**

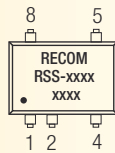
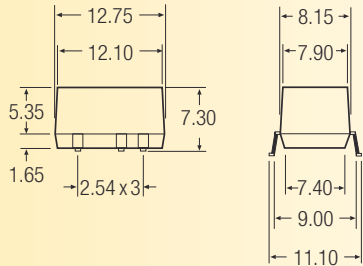


**RSD\*\*-xx15**

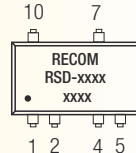
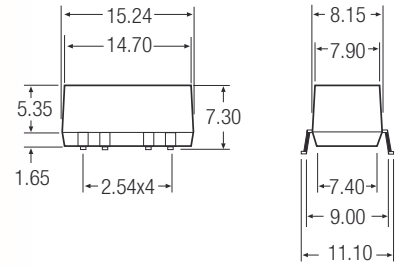


**Package Style and Pinning (mm)**

8 PIN Single SMD Package



10 PIN Dual SMD Package

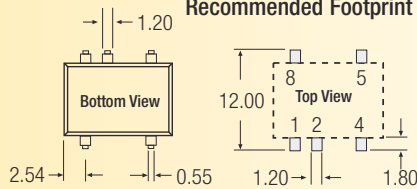


Pin Connections

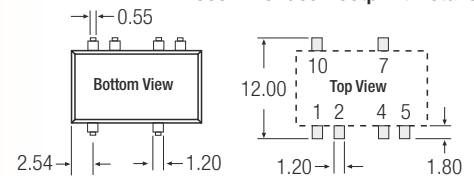
Pin #	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
4	-Vout	Com
5	+Vout	-Vout
7	No Pin	+Vout
8	NC	No Pin
10	No Pin	NC

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

Recommended Footprint Details

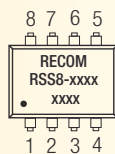
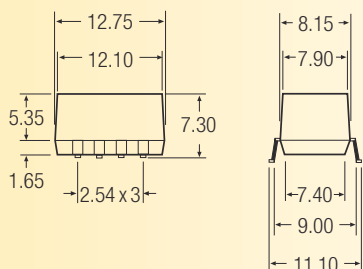


Recommended Footprint Details

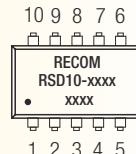
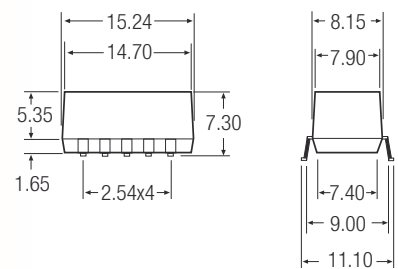


**\*\* Package Style and Pinning (mm)**

8 PIN Single SMD Package



10 PIN Dual SMD Package

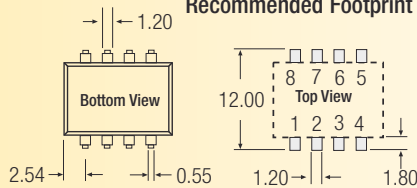


Pin Connections

Pin #	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	NC	NC
4	-Vout	Com
5	+Vout	-Vout
6	NC	NC
7	NC	+Vout
8	NC	NC
9	-	NC
10	-	NC

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

Recommended Footprint Details



Recommended Footprint Details

