Features

Regulated Converters

- 2:1 and 3:1 Wide Input Voltage Ranges
- 1kVDC, 2kVDC & 3kVDC Isolation
- UL94V-0 Package Material
- Continuous Short Circuit Protection
- Low Ripple and Noise
- Remote On/Off Control
- Efficiency to 83%

Description

Very high power density, 2:1 or 3:1 input voltage range and a wide operating temperature range -40°C~+71°C and extra features such as On/Off control are just some of the characteristics of this converter which is ideal for highly sophisticated industrial designs.The RS3 is available with 2kV or 3kV isolation options (1kVDC is standard)

Selection Guide

Part Number SIP8		Input Voltage Range (VDC)	Rated Output Voltage (VDC)	Output Current Full Load (mA)	Efficiency typ. (%)	Capacitive Load max.
RS3-xx3.3S	(H2/H3)	4.5-9, 9-18	3.3	600	73-75	1000µF
		18-36, 36-72			77-78	
RS3-xx05S	(H2/H3)	4.5-9, 9-18	5	600	76-79	1000µF
		18-36, 36-72			80-81	
RS3-xx09S	(H2/H3)	4.5-9, 9-18	9	333	77-80	470µF
		18-36, 36-72			81-82	
RS3-xx12S	(H2/H3)	4.5-9, 9-18	12	250	80-81	220µF
		18-36, 36-72			83	
RS3-xx15S	(H2/H3)	4.5-9, 9-18	15	200	80-81	100µF
		18-36, 36-72			83	
RS3-xx3.3D	(H2/H3)	4.5-9, 9-18	±3.3	±300	73-75	±470µF
		18-36, 36-72			75	
RS3-xx05D	(H2/H3)	4.5-9, 9-18	±5	±300	76-80	±470µF
		18-36, 36-72			80-81	
RS3-xx09D	(H2/H3)	4.5-9, 9-18	±9	±167	77-81	±220µF
		18-36, 36-72			81	
RS3-xx12D	(H2/H3)	4.5-9, 9-18	±12	±125	78-83	±100µF
		18-36, 36-72			83	
RS3-xx15D	(H2/H3)	4.5-9, 9-18	±15	±100	79-83	±47µF
		18-36, 36-72			83	
RS3-xx3.3SZ	(H2/H3)	9-27	3.3	600	73	1000µF
		20-60			74	
RS3-xx05SZ	(H2/H3)	9-27	5	600	76-79	1000µF
		20-60			78	
RS3-xx09SZ	(H2/H3)	9-27	9	333	77	470µF
		20-60			79	
RS3-xx12SZ	(H2/H3)	9-27	12	250	80	220µF
		20-60			80	
RS3-xx15SZ	(H2/H3)	9-27	15	200	80	100µF
		20-60			80	
RS3-xx3.3DZ	(H2/H3)	9-27	±3.3	±300	73	±470µF
		20-60			74	
RS3-xx05DZ	(H2/H3)	9-27	±5	±300	77	±470µF
		20-60			78	
RS3-xx09DZ	(H2/H3)	9-27	±9	±167	79	±220µF
		20-60			79	
RS3-xx12DZ	(H2/H3)	9-27	±12	±125	80	±100µF
		20-60			80	
RS3-xx15DZ	(H2/H3)	9-27	±15	±100	80	±47µF
		20-60			80	

ECONOLINE
DC/DC-Converter

RECOM

3 Watt SIP8 Isolated Single & Dual Output

EN-60950-1 Certified
EN-60601-1 Certified
(Suffix /H2 or /H3)

RS3

2:1 Input (RS3-S/D)
xx = 4.5-9Vin = 05
xx = 9-18Vin = 12
xx = 18-36Vin = 24
xx = 36-72Vin = 48

3:1 Input (RS3-SZ/DZ)
xx = 9-27Vin = 24
xx = 20-60Vin = 48

Refer to Application Notes

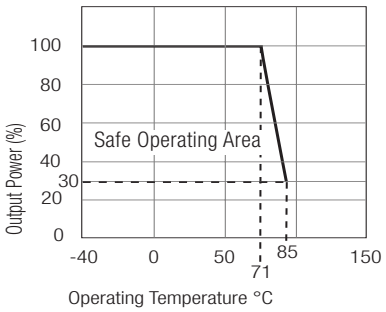
RS3-S_D/(Z) Series

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

Input Voltage Range		2:1 and 3:1
Output Accuracy	Nominal Vin and full load	±2% typ.
Line Voltage Regulation	LL to HL, full load	±0.5% max.
Load Voltage Regulation	20% to 100% full load	±0.5% typ.
Output Ripple and Noise	20MHz limited	50mVp-p max.
Switching Frequency	20% to 100% full load	200kHz typ.
Efficiency at Full Load		see Selection Guide
Quiescent Current	RS-05xxS_D	35mA typ.
Nominal input Voltage	RS-12xxS_D	25mA typ.
(Standard, /H2 and /H3)	RS-24xxS_D, SZ_DZ	20mA typ.
	RS-48xxS_D, SZ_DZ	10mA typ.
Isolation Voltage (2:1 and 3:1)	(tested for 1 second)	1000VDC min.
	H2	2000VDC min.
	H3	3000VDC min.
Rated Working Voltage	(long term isolation)	see Application Notes
Isolation Capacitance (2:1 and 3:1)	H1	200pF max.
(tested at 100kHz)	H2/H3	30pF max.
Isolation Resistance		1GΩ min.
Short Circuit Protection		Continuous
Operating Temperature Range		–40°C to +71°C
Storage Temperature Range		–55°C to +125°C
Relative Humidity		95% RH
Package Weight		4.7g
MTBF (+25°C) *Detailed Information see Application Notes chapter "MTBF"*	using MIL-HDBK 217F	3303 x10³ hours
(+71°C) *Detailed Information see Application Notes chapter "MTBF"*	using MIL-HDBK 217F	745 x10³ hours

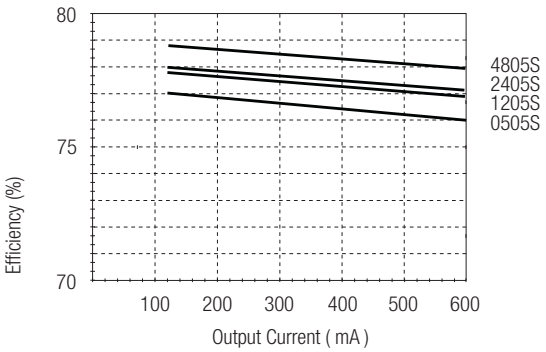
Derating-Graph
(Ambient Temperature)

RS3-(Z)S_D



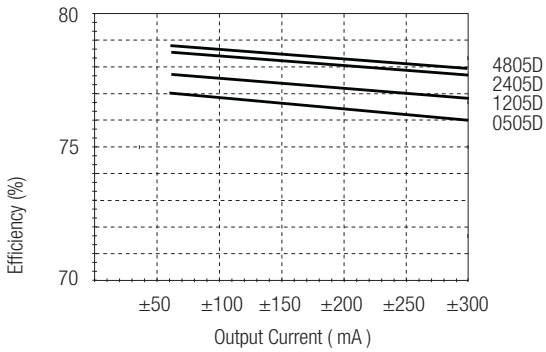
Typical Characteristics

RS3-xxxxS



Efficiency Vs Load (Nominal Vin)

RS3-xxxxD

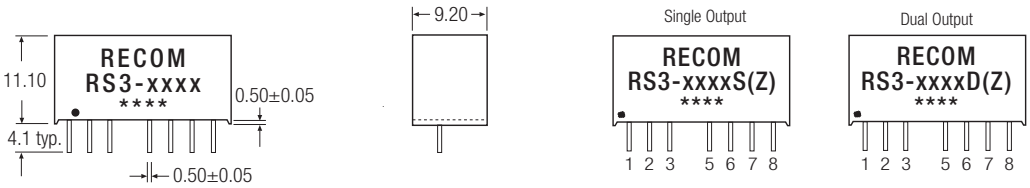


Efficiency Vs Load (Nominal Vin)

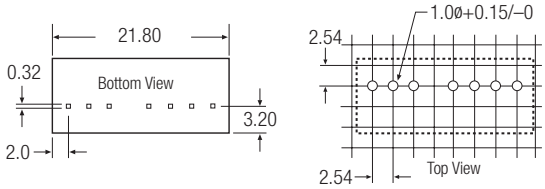
RS3

Package Style and Pinning (mm)

3rd angle projection



Recommended Footprint Details



Pin Connections

Pin #	Single	Dual
1	–Vin	–Vin
2	+Vin	+Vin
3	CTRL	CTRL
5	NC	NC
6	+Vout	+Vout
7	–Vout	Com
8	NC	–Vout

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

Notes

Pin 8 (NC*)
This pin is used internally and must have no external connection.

Pin 5 (NC) Not connected internally..

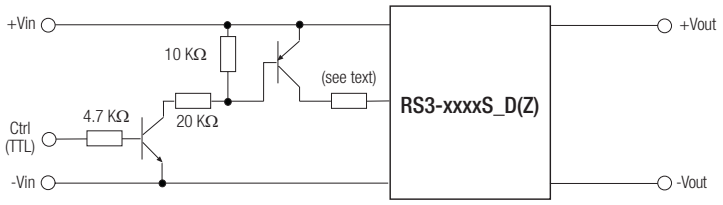
Pin 3 (CTRL)
This pin provides an Off function which puts the converter into a low power mode. When the pin is 'high' the converter is OFF and when the pin is high 'Z' the converter is ON. There is no allowed low state for this pin.

RS3

Application Example

TTL Remote CTRL Circuit

Control Pin Input Current:	10mA
Voltage Set Point Accuracy with external input/output capacitors refer to recommended test circuit:	typ. ± 1% max. ±2%
Control Pin (CTRL) Input Current, control voltage applied via 1K resistor, output voltage must reduce to 0V:	typ. 3mA max. 6mA



Voltage to be applied via a limiting resistor with a recommended value of 1K for RS3-05xx; 3.3K for RS3-12xx; RS3-24xx and 10K for RS3-48xx.