

DC/DC Converters – SD - S/D3 series

3 WATT (available also 1 and 2 WATT series)
Single / Dual Output

FEATURES

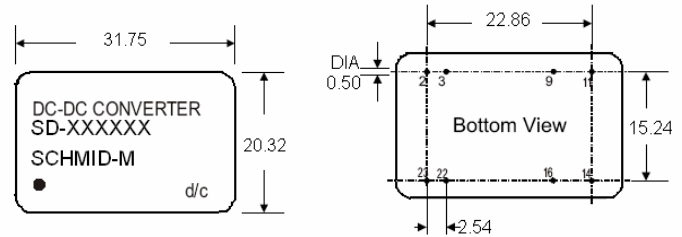
- Wide 2:1 Input Range
- Full SMD Technology
- 1500 Vdc Isolation, Up to 3500 VDC
- Operating Temperature Range - 40°C ~ 85°C
- Continuous Short Circuit Protection
- Efficiency up to 82 %
- Metal Case Standard, optional Plastic Case

Input specifications:	
Input Reflected Ripple Current	35mA pk-pk, typ
Filter:	Pi Type
Output specifications:	
Voltage accuracy	±1%
Ripple & noise (at 20MHz BW)	75mV pk-pk
Short Circuit Protection	Indefinite
Line regulation	±0.5%
Load regulation	±0.5% (10-100% load)
	(±)3.3V models ±0.7% (10-100% load)
Temperature coefficient	±0.02%/°C
General Specifications:	
Switching Frequency	330 kHz, typ
I/O isolation voltage (3 sec)	1500Vdc
	Metal Case 1000Vdc
Safety standard	IEC 60950
Environmental specifications:	
Operating Temperature	-40°C ~ +85°C
Case temperature	100°C Max.
Storage Temperature	-40°C ~ +125°C
Cooling	Nature Convection
Humidity	95% rel H

Model Number	Input Vdc	Output Vdc	Output Current (mA)	Efficiency @FL (%)
SD-123R3S3	9-18	3.3	900	72
SD-1205S3		5	600	76
SD-1209S3		9	333	78
SD-1212S3		12	250	80
SD-1215S3		15	200	80
SD-1224S3		24	125	80
SD-123R3D3	9-18	±3.3	±450	72
SD-1205D3		±5	±300	76
SD-1209D3		±9	±167	80
SD-1212D3		±12	±125	80
SD-1215D3		±15	±100	80
SD-1224D3		±24	±63	80
SD-243R3S3	18-36	3.3	900	72
SD-2405S3		5	600	76
SD-2409S3		9	333	78
SD-2412S3		12	250	80
SD-2415S3		15	200	82
SD-2424S3		24	125	82
SD-243R3D3	18-36	±3.3	±450	72
SD-2405D3		±5	±300	78
SD-2409D3		±9	±167	80
SD-2412D3		±12	±125	82
SD-2415D3		±15	±100	82
SD-2424D3		±24	±63	82
SD-483R3S3	36-72	3.3	900	72
SD-4805S3		5	600	76
SD-4809S3		9	333	78
SD-4812S3		12	250	80
SD-4815S3		15	200	80
SD-4824S3		24	125	80
SD-483R3D3	36-72	±3.3	±450	72
SD-4805D3		±5	±300	76
SD-4809D3		±9	±167	78
SD-4812D3		±12	±125	80
SD-4815D3		±15	±100	80
SD-4824D3		±24	±63	80

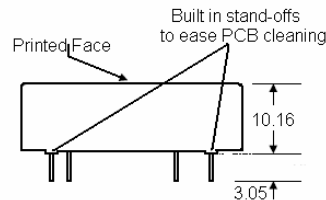
MECHANICAL DIMENSIONS & PIN CONNECTIONS

PIN #	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input



Notes : All dimensions are typical in millimeters (inches).

1. Pin diameter: 0.5±0.05 (0.02±0.002)
2. Pin pitch tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)



DC/DC Converters – SD - S/D5 series

5 WATT (available also 4 WATT series)
Single / Dual Output

FEATURES

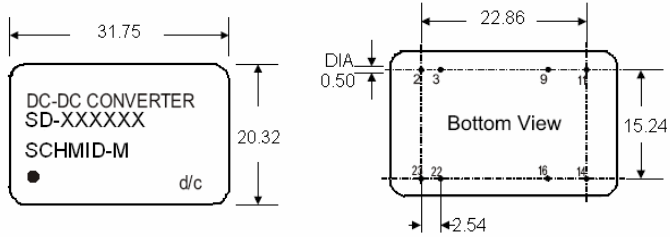
- Wide 2:1 Input Range
- Full SMD Technology
- 1500 Vdc Isolation, Up to 3500VDC
- Continuous Short Circuit Protection
- Efficiency up to 83%
- Metal case Standard, Optional Plastic Case - P

Input specifications:	
Filter:	π (Pi) Type
Isolation specification:	
Rated Voltage	1500 Vdc, Standard
Resistance	1000M Ω Min.
Capacitance	390 pF, Typ.
Output specifications:	
Voltage accuracy	$\pm 1\%$, Max
Voltage Balance	$\pm 1\%$
Ripple & noise (at 20MHz BW)	60 mVp-p, Max
Short Circuit Protection	Indefinite
Line regulation	$\pm 0.5\%$, Max
Load regulation	$\pm 0.5\%$, Max
Temperature coefficient	$\pm 0.02\%/^{\circ}\text{C}$
General Specifications:	
Switching Frequency	266 kHz, Typ.
Capacitance	470 pF, Typ.
Resistance	1000 M Ω
Environmental specifications:	
Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Case temperature	100°C Max.
Storage Temperature	$-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
Cooling	Nature Convection

Model Number	Input Vdc	Output Vdc	Output Current (mA)	Efficiency @FL (%)
SD-123R3S5	9-18	3.3	1300	73
SD-1205S5		5	1000	77
SD-1209S5		9	555	78
SD-1212S5		12	417	81
SD-1215S5		15	333	80
SD-1224S5		24	208	80
SD-123R3D5	9-18	± 3.3	± 750	73
SD-1205D5		± 5	± 500	77
SD-1209D5		± 9	± 278	80
SD-1212D5		± 12	± 208	80
SD-1215D5		± 15	± 167	79
SD-1224D5		± 24	± 104	80
SD-243R3S5	18-36	3.3	1300	75
SD-2405S5		5	1000	80
SD-2409S5		9	555	82
SD-2412S5		12	417	80
SD-2415S5		15	333	82
SD-2424S5		24	208	82
SD-243R3D5	18-36	± 3.3	± 750	75
SD-2405D5		± 5	± 500	78
SD-2409D5		± 9	± 278	83
SD-2412D5		± 12	± 208	80
SD-2415D5		± 15	± 167	80
SD-2424D5		± 24	± 104	80
SD-483R3S5	36-72	3.3	1300	75
SD-4805S5		5	1000	80
SD-4809S5		9	555	82
SD-4812S5		12	417	80
SD-4815S5		15	333	83
SD-4824S5		24	208	83
SD-483R3D5	36-72	± 3.3	± 750	73
SD-4805D5		± 5	± 500	79
SD-4809D5		± 9	± 278	79
SD-4812D5		± 12	± 208	80
SD-4815D5		± 15	± 167	80
SD-4824D5		± 24	± 104	80

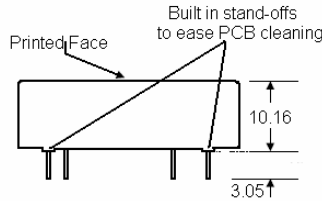
MECHANICAL DIMENSIONS & PIN CONNECTIONS

PIN #	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input



Notes : All dimensions are typical in millimeters (inches).

1. Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
2. Pin pitch tolerance: ± 0.35 (± 0.014)
3. Case Tolerance: ± 0.5 (± 0.02)



DC/DC Converters – SD - S/D6 series

6 WATT

Single / Dual Output

FEATURES

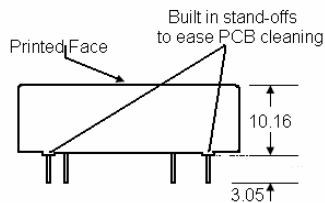
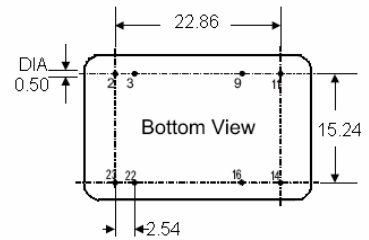
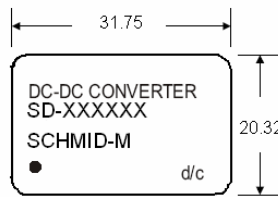
- Wide 2:1 Input Range
- Full SMD Technology
- 1500 Vdc Isolation, Up to 3500VDC
- Continuous Short Circuit Protection
- Efficiency up to 75%
- Metal case Standard, Optional Plastic Case - P

Input specifications:	
Filter:	π (Pi) Type
Isolation specification:	
Rated Voltage	1500 Vdc, Standard
Resistance	1000M Ω Min.
Capacitance	390 pF, Typ.
Output specifications:	
Voltage accuracy	$\pm 1\%$, Max
Voltage Balance	$\pm 1\%$
Ripple & noise (at 20MHz BW)	60 mVp-p, Max
Short Circuit Protection	Indefinite
Line regulation	$\pm 0.5\%$, Max
Load regulation	$\pm 0.5\%$, Max
Temperature coefficient	$\pm 0.02\%/^{\circ}\text{C}$
General Specifications:	
Switching Frequency	266 kHz, Typ.
Capacitance	470 pF, Typ.
Resistance	1000 M Ω
Environmental specifications:	
Operating Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Case temperature	100 $^{\circ}\text{C}$ Max.
Storage Temperature	$-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
Cooling	Nature Convection

Model Number	Input Vdc	Output Vdc	Output Current (mA)	Efficiency @FL (%)
SD-123R3S6	9-18	3.3	1400	73
SD-1205S6		5	1200	77
SD-1209S6		9	666	78
SD-1212S6		12	500	81
SD-1215S6		15	400	80
SD-1224S6		24	250	80
SD-123R3D6	9-18	± 3.3	± 909	73
SD-1205D6		± 5	± 600	77
SD-1209D6		± 9	± 333	80
SD-1212D6		± 12	± 250	80
SD-1215D6		± 15	± 200	79
SD-1224D6		± 24	± 125	80
SD-243R3S6	18-36	3.3	1400	75
SD-2405S6		5	1200	80
SD-2409S6		9	666	82
SD-2412S6		12	500	80
SD-2415S6		15	400	82
SD-2424S6		24	250	82
SD-243R3D6	18-36	± 3.3	± 909	75
SD-2405D6		± 5	± 600	78
SD-2409D6		± 9	± 333	83
SD-2412D6		± 12	± 250	80
SD-2415D6		± 15	± 200	80
SD-2424D6		± 24	± 125	80
SD-483R3S6	36-72	3.3	1400	75
SD-4805S6		5	1200	80
SD-4809S6		9	666	82
SD-4812S6		12	500	80
SD-4815S6		15	400	83
SD-4824S6		24	250	83
SD-483R3D6	36-72	± 3.3	± 909	73
SD-4805D6		± 5	± 600	79
SD-4809D6		± 9	± 333	79
SD-4812D6		± 12	± 250	80
SD-4815D6		± 15	± 200	80
SD-4824D6		± 24	± 125	80

MECHANICAL DIMENSIONS & PIN CONNECTIONS

PIN #	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input



Notes : All dimensions are typical in millimeters (inches).

1. Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
2. Pin pitch tolerance: ± 0.35 (± 0.014)
3. Case Tolerance: ± 0.5 (± 0.02)

DC/DC Converters – SD- S/D8 series

8 WATT (available also 10 WATT series)
Single / Dual Output

FEATURES

- Wide 2:1 Input Range
- Full SMD Technology
- 1500 Vdc Isolation
- Operating Temperature Range - 40°C ~ 85°C
- Continuous Short Circuit Protection
- Efficiency up to 85 %
- Metal Case Standard, Optional Plastic Case – suffix P
- High Power Density: 8W in 24-DIL Package

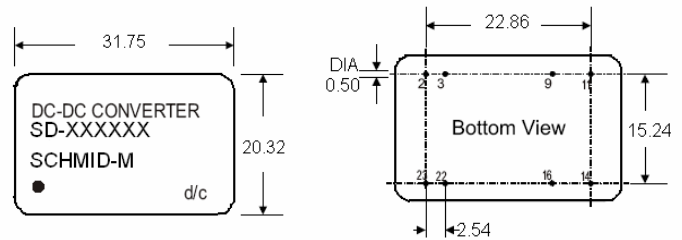


Input specifications:	
Input Reflected Ripple Current Filter:	35mA pk-pk, typ Pi Type
Output specifications:	
Voltage accuracy	±1%
Ripple & noise (at 20MHz BW)	75mV pk-pk
Short Circuit Protection	Indefinite
Line regulation	±0.5%
Load regulation	±0.5% (10-100% load)
(±)3.3V models	±0.7% (10-100% load)
Temperature coefficient	±0.02%/°C
General Specifications:	
Switching Frequency	330 kHz, typ
I/O isolation voltage (3 sec)	1500Vdc
Metal Case	1000Vdc
Safety standard	IEC 60950
Environmental specifications:	
Operating Temperature	-40°C ~ +85°C
Case temperature	100°C Max.
Storage Temperature	-40°C ~ +125°C
Cooling	Nature Convection
Humidity	95% rel H
EMC Characteristics	
Radiated Emissions	EN55022 CLASS A
Conducted Emissions	EN55022 CLASS A
ESD, EFT, Surge	EN61000-2,4,5 Perf. Criteria B
RS, CS, PFMF	EN61000-3,6,8 Perf. Criteria A

Model Number	Input Vdc	Output Vdc	Output Current (mA)	Efficiency @FL (%)
SD-123R3S8	9-18	3.3	2000	80
SD-1205S8		5	1500	82
SD-1212S8		12	665	85
SD-1215S8		15	535	83
SD-1205D8		±5	±800	82
SD-1212D8		±12	±335	84
SD-1215D8		±15	±265	84
SD-2243R3S8	18-36	3.3	2000	80
SD-2405S8		5	1500	82
SD-2412S8		12	665	85
SD-2415S8		15	535	84
SD-2405D8		±5	±800	82
SD-2412D8		±12	±335	83
SD-2415D8		±15	±265	85
SD-483R3S8	36-72	3.3	2000	80
SD-4805S8		5	1500	82
SD-4812S8		12	665	84
SD-4815S8		15	535	84
SD-4805D8		±5	±800	82
SD-4812D8		±12	±335	85
SD-4815D8		±15	±265	85

MECHANICAL DIMENSIONS & PIN CONNECTIONS

PIN #	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input



Notes : All dimensions are typical in millimeters (inches).

1. Pin diameter: 0.5±0.05 (0.02±0.002)
2. Pin pitch tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

