



POLYTRON DEVICES, Inc.

3 WATT SINGLE & DUAL OUTPUT

**Regulated,
Wide Input (2:1)
DC/DC Converters**



Specifications

All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

INPUT

	Voltage Range
5V nominal input	4.5 - 9 Vdc
12V nominal input	9 - 18 Vdc
24V nominal input	18 - 36 Vdc
48V nominal input	36 - 72 Vdc
Input Filter	Capacitor type
Input Surge Voltage	100mS max.
5V input	15 Vdc
12V input	36 Vdc
24V input	50 Vdc
48V input	100 Vdc
Reflected Ripple Current	There is an external capacitor at input (Note 2)
5V input	400mVp-p max
12V input	150mVp-p max
24V input	380mVp-p max
48V input	170mVp-p max

Start up time	Nominal Vin and constant resistor load	1mS typ.
Remote ON/OFF	DC-DC ON	Open or high impedance
	DC-DC OFF	Control pin applied current 4 ~ 8mA max. (via 1KΩ)
Remote OFF Input current	Nominal input	1mA max.

OUTPUT

Output Power		3 Watts max.
Voltage Accuracy	Full load and nominal Vin.....	±1%
Minimum Load		25% of FL
Line Regulation	LL to HL at Full load.....	±0.2%
Load Regulation	Min. load to 100% load.....	Single ±0.5%, Dual ±1%
Ripple and Noise	Balanced on all output.....	75mVp-p
Temperature Coefficient		±0.1%/°C max.
Transient Response Recovery Time	25% load step change.....	500µS, typ
Short Circuit Protection		Continuous, automatic recovery

GENERAL

Efficiency	See table
Isolation Voltage	1600 Vdc
Isolation Resistance	10 ⁹ Ohms
Isolation Capacitance	1000pF, max.
Switching Frequency	1000 KHz, min.

ENVIRONMENTAL

Operating Temperature Range	-40°C to +71°C (without derating)
Storage Temperature Range	-55°C to +125°C
Cooling	Free Air Convection
Thermal Shock	MIL-STD-810D
Vibration	10-55Hz, 10G, 30 minutes along X, Y, Z
Relative Humidity	5% to 95% RH

PHYSICAL

Case Material	Non-conductive black plastic
Base Material	None
Potting Material	Silicon
Dimensions	0.86" x 0.36" x 0.44" (21.8 x 9.2 x 11.1 mm)
Weight	4.8 g. (0.17 oz.)
MTBF (note①)	

EMC CHARACTERISTICS

Meet EN55022 classes B recommend circuit with external L-C at input (note②)

5V input	100μF & 10μH
12V input	100μF & 10μH
24V input	100μF & 120μH
48V input	10μF & 120μH

FEATURES

- **SIP Package**
0.86" x 0.36" x 0.44"
- **2:1 Wide Input Voltage Range**
- **Low Ripple and Noise**
- **Input to Output Isolation up to 1.6 kvdc**
- **Continuous Short Circuit Protection**
- **External On/Off Control**
- **RoHS Compliant**

SWA3 Series

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Selection Guide

(Continued)

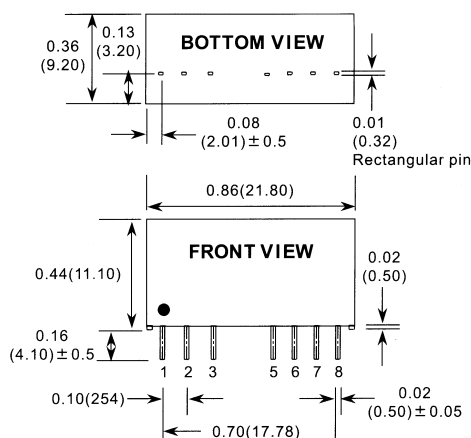
	Input Voltage Nominal (Range) (Vdc)	Output Voltage (Vdc)	Output Current		Efficiency ④	Model Number	Case
			Min. Load ③ (mA)	Full Load (mA)			
SINGLE OUTPUT VOLTAGE	5 (4.5-9)	3.3	35	700	73	SWA3-5S33	SIP3
	5 (4.5-9)	5	30	600	77	SWA3-5S5	SIP3
	5 (4.5-9)	9	20	333	78	SWA3-5S9	SIP3
	5 (4.5-9)	12	17	250	79	SWA3-5S12	SIP3
	5 (4.5-9)	15	14	200	80	SWA3-5S15	SIP3
	12 (9-18)	3.3	35	700	74	SWA3-12S33	SIP3
	12 (9-18)	5	30	600	78	SWA3-12S5	SIP3
	12 (9-18)	9	20	333	79	SWA3-12S9	SIP3
	12 (9-18)	12	17	250	80	SWA3-12S12	SIP3
	12 (9-18)	15	14	200	81	SWA3-12S15	SIP3
	24 (18-36)	3.3	35	700	74	SWA3-24S33	SIP3
	24 (18-36)	5	30	600	78	SWA3-24S5	SIP3
	24 (18-36)	9	20	333	79	SWA3-24S9	SIP3
	24 (18-36)	12	17	250	80	SWA3-24S12	SIP3
	24 (18-36)	15	14	200	81	SWA3-24S15	SIP3
	48 (36-72)	3.3	35	700	74	SWA3-48S33	SIP3
	48 (36-72)	5	30	600	79	SWA3-48S5	SIP3
	48 (36-72)	9	20	333	79	SWA3-48S9	SIP3
	48 (36-72)	12	17	250	80	SWA3-48S12	SIP3
	48 (36-72)	15	14	200	81	SWA3-48S15	SIP3
DUAL OUTPUT VOLTAGE	5 (4.5-9)	±5	15	±300	77	SWA3-5-5	SIP3
	5 (4.5-9)	±12	10	±125	79	SWA3-5-12	SIP3
	5 (4.5-9)	±15	10	±100	80	SWA3-5-15	SIP3
	12 (9-18)	±5	15	±300	80	SWA3-12-5	SIP3
	12 (9-18)	±12	10	±125	81	SWA3-12-12	SIP3
	12 (9-18)	±15	10	±100	81	SWA3-12-15	SIP3
	24 (18-36)	±5	15	±300	80	SWA3-24-5	SIP3
	24 (18-36)	±12	10	±125	81	SWA3-24-12	SIP3
	24 (18-36)	±15	10	±100	81	SWA3-24-15	SIP3
	48 (36-72)	±5	15	±300	80	SWA3-48-5	SIP3
	48 (36-72)	±12	10	±125	81	SWA3-48-12	SIP3
	48 (36-72)	±15	10	±100	81	SWA3-48-15	SIP3

Mechanical Specifications

PIN CONNECTION		
PIN	SINGLE	DUAL
1	-INPUT	-INPUT
2	+INPUT	+INPUT
3	CTRL	CTRL
5	NC	NC
6	+OUTPUT	+OUTPUT
7	-OUTPUT	COM
8	NC	-OUTPUT

NOTE:

- ① Bellcore TR-NWT-00032, Case: 50% Stress, Temperature at 40°C.
(Ground fixed and controlled environment).
MIL-STD-217F Notice 2 @ Ta = 25°C, Full load (Ground, Benign, controlled environment).
- ② The SWA3 Series requires (Not required) external filter to meet ENS022 class B.
- ③ The SWA3 series requires a minimum load at the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specifications.
- ④ Typical value at nominal input voltage and full load.



1. All Dimensions are in inches (mm)
2. Pin pitch tolerance ± 0.02 (0.5)



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