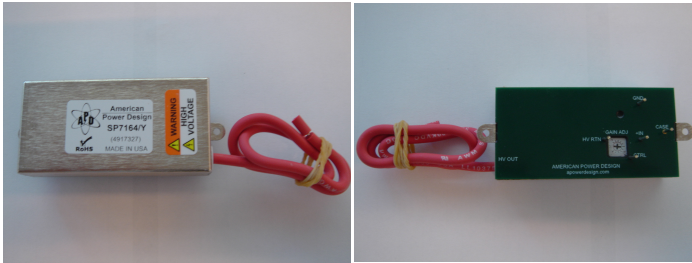


"The best high voltage design solution"

SP7164, 1W, CE, UL, TÜV, SPECIFICATION SHEET



Certifications IEC/UL/CSA/EN 62368 & CE

Standard Model Number : SP7164

RoHS Model Number : SP7164/Y

ELECTRICAL SPECIFICATIONS

Standard Model is NOT RoHS Compliant

Input Voltage	11.5V - 16Vdc	Programming Voltage	0 - 5Vdc
Input Current	<150mA (No Load)	Programming Voltage Shutdown	> 5.2Vdc
Input Current	<250mA (Full Load)	Programming Current	< 100uA
Output Voltage	0V to -8kVdc (Programmable)	Programming Linearity	<1% (5% to 100% Vout)
Output Current	0.125mA	Input Filter	Low ESR Capacitor
Voltage Accuracy	+/- 1%	Reverse Input Protection	50Vdc
Line Regulation	< 0.05%	Short Circuit Protection	Continuous
Load Regulation	<0.05%	Switching Frequency	180 kHz
Output Ripple	< 0.15% P-P	Gain Adjustment	5 to 10%
		Response Time	<200 ms (Full Load, full scale response)

GENERAL SPECIFICATIONS

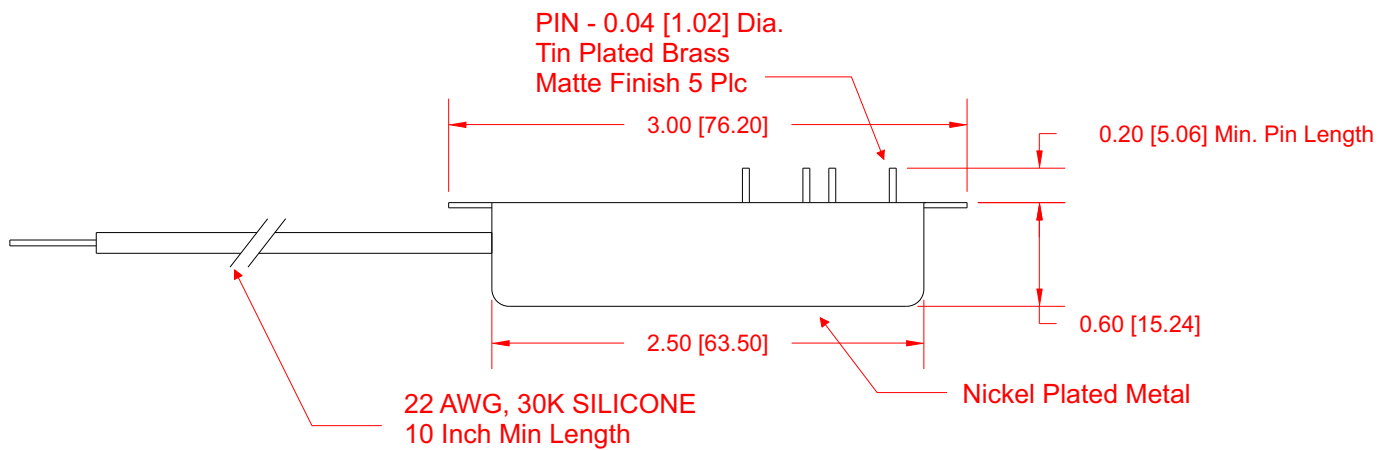
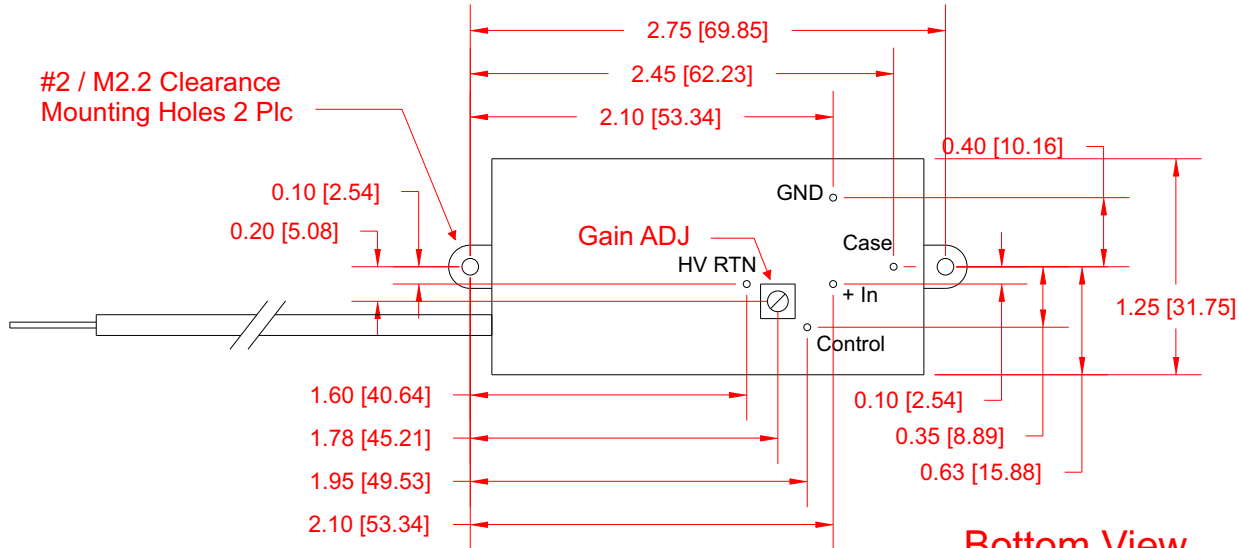
Stability	< 0.01% / Hr.	EMI/RFI	Five-Sided Shield
Temp. Stability	+/- 0.005%/°C	Derating	None
Temp. (Operating, Case)	-10 to +60°C	Cooling	Free-Air Convection
Temp. (Storage)	-40 to +125°C	Certifications	IEC/UL/CSA/EN 62368 & CE
Humidity	0 to 95% (Non-Condensing)		
Thermal Shock Limit	1°C / 10 Seconds		

PHYSICAL SPECIFICATIONS

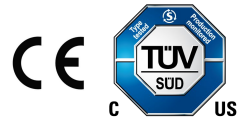
Dimensions	1.25 x 3.0 x 0.60 inches	Case Material	Nickel Plated Metal
Weight	2.0 Oz		



SP7164, 1W, CE, UL, TÜV, SPECIFICATION SHEET



*Dimensions are in Inches
[Metric equivalents in brackets]*



"The best high voltage design solution"

SP7164, 1W, CE, UL, TÜV, SPECIFICATION SHEET

APPLICATION NOTES

CLEANING AGENTS

In order to avoid possible damage, any penetration of cleaning fluids must be prevented, since the power supplies are not hermetically sealed.

NUCLEAR AND MEDICAL APPLICATIONS

American Power Design products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of American Power Design, Inc.

SAFETY REQUIREMENTS

The converter meet North American and International safety regulatory requirements per CAN/CSA C22.2 No 62368-1:2014 / UL 62368-1:2014 / EN62368-1:2014/A11:2017. Basic Insulation is provided between input and output. To comply with safety agencies requirements, an input line fuse 1A (fast-acting) must be used external to the converter.

If one input fuse is used for a group of modules, the maximum fuse rating should not exceed 20A.

WARRANTY

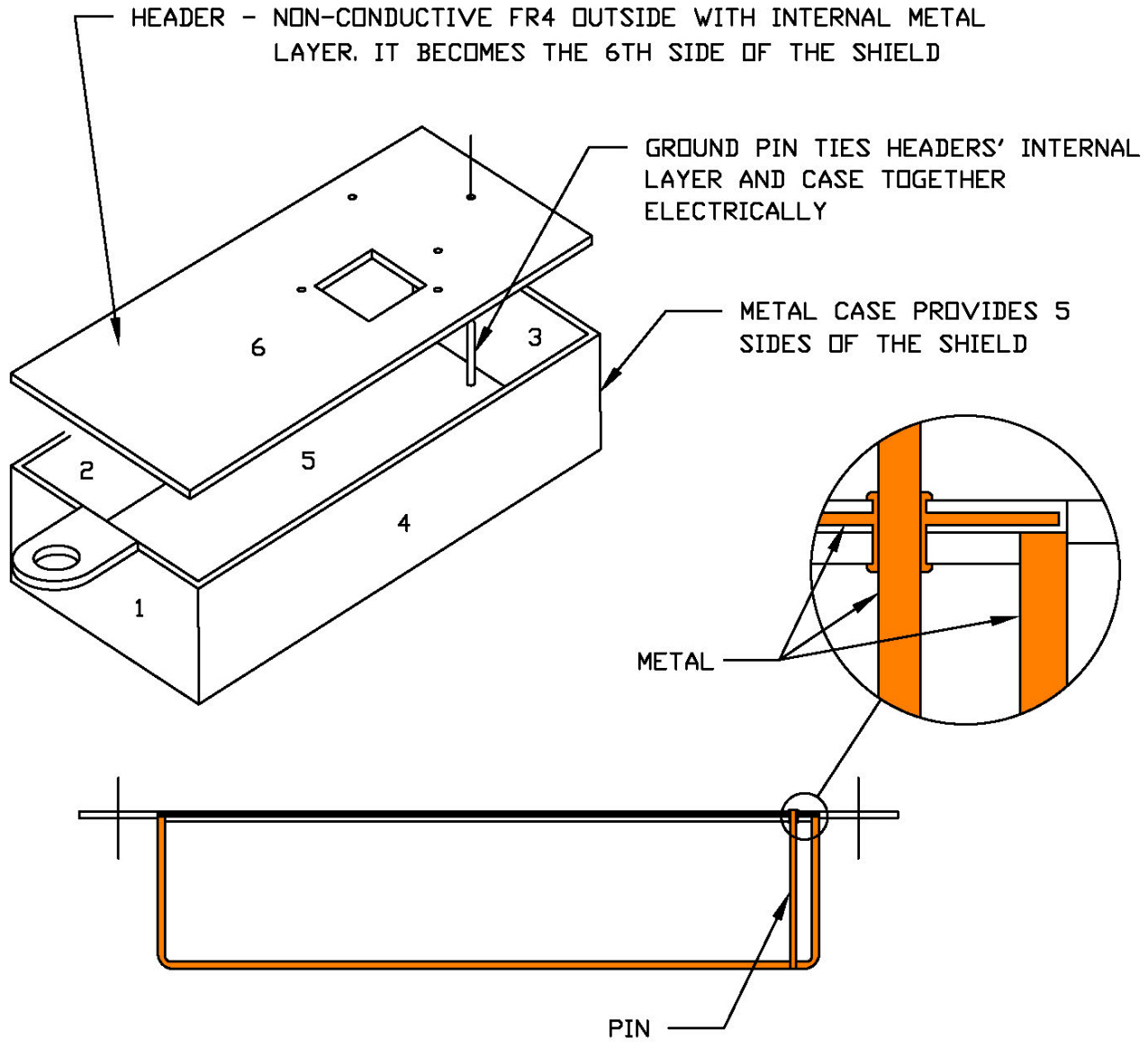
All products manufactured by American Power Design, Inc. (APD) are warranted to be free of defects due to material or workmanship for a period of one year from date of shipment. At our option, APD will repair or replace any non-conforming product.

APD expressly disclaims any liability for consequential or incidental damages resulting from the use or misuse of its products by the purchaser or others.

This warranty is in lieu of all warranties expressed or implied, including the warranties of merchantability. No other warranties, obligations, or liabilities are expressed or implied.

All products being returned for repair require a return material authorization(RMA) assigned by APD prior to return shipment.

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	RELEASED	ON FILE	ON FILE



High Voltage (HVPS) Condatas AG		
CONCEPT, 6 SIDED SHIELD		
SIZE A	CODE IDENT NO.	S-SLD-SHLDCPT
SCALE:	REV. A	SHEET 1 OF 1

REGISTRATION CERTIFICATE

This document certifies that the administration systems of

American Power Design

3 Industrial Drive, Suite 7 & 8, Windham, NH 03087, USA

have been assessed and approved by QAS International to the following management systems, standards and guidelines:


ISO 9001:2015

The approved administration systems apply to the following:

American Power Design, located in Windham, NH, is a supplier of High Voltage DC to DC Converters.

Original Approval	30th September 2020
Current Certificate	30th September 2020
Certificate Expiry	30th September 2021
Certificate Number	US4487

Signed: Certification Officer



On behalf of QAS International

This certificate remains valid while the holder maintains their administration systems in accordance with the standards and guidelines stated above, which will be audited annually by QAS International. The holder is entitled to display the above registration mark for the duration of this certificate, which should be returned to QAS International upon reasonable request.
Issuing Office: QAS International, 5 Technology Park, Colindeep Lane, London, NW9 6BX, UK



American Power Design, Inc.



Declaration of Conformity

DIR 2014/35/EU, Low Voltage Directive

August 7, 2020

We hereby declare under our sole responsibility that the E1 & E3 Series Is in compliance with the following:

CAN/CSA C22.2 No 62368-1:2014
UL62368-1:2014
EN 62368-1:2014/A11:2017
IEC 62368-1:2014

American Power Design power supplies are to be used exclusively in accordance with the published data sheets provided on our website.

Randy Normandin
President
American Power Design, Inc.



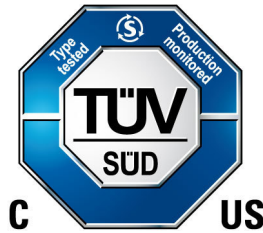
America

CERTIFICATE

No. U8V 107546 0002 Rev. 00

Holder of Certificate: **American Power Design, Inc.**
 3 Industrial Dr. Unit 8
 Windham NH 03087
 USA

Certification Mark:



Product: Audio/Video, Information and Communication technology equipment
 HV DC-DC Converter

This product was voluntarily tested to the relevant safety requirements referenced on this certificate. It can be marked with the certification mark above. The mark must not be altered in any way. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC 17067. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited Certification body.

Test report no.: 72155858-000

Date, 2020-08-07

(Glenn H. McLaughlin)

CERTIFICATE

No. U8V 107546 0002 Rev. 00

Model(s): E1, E3 Series;
 SP7164

Brand Name: APD

Tested according to: CAN/CSA C22.2 No 62368-1:2014
 UL 62368-1:2014
 EN 62368-1:2014/A11:2017

Production Facility(ies): 107546

Parameters:
 Rated Input Voltage: 11.5 – 16.0 VDC
 Rated Input Current: <420mA
 Rated Output Voltage: 0 to +8000 V DC
 Rated Output Current: 0 to 0.375 A max
 Protection Class: III
 Degree of Protection: IPX0

Model Matrix

E	1 or 3	-P	XXX	/Y
Product Family	Total Output Power	Positive/ Negative Output	Customer Selects Output Voltage XXX = 10, 20, 30, 50, 60, 100, 125, 150, 200, 250, 300, 400, 500, 600, 800	ROHS Compliance

CERTIFICATE

No. U8V 107546 0002 Rev. 00

E1-P100/Y

E1 Series: HV DC/DC Converters
1 WATT Total Output Power
Dimensions: 27.9 x 35.6 x 12.7 mm, 0.03 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 100V to 2000 VDC

Model Number		Input Current		Output Specifications		Switching Frequency kHz
Non-RoHS	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
E1-P10	E1-P10/Y	<50	<160	0V to +100	0-10	250
E1-N10	E1-N10/Y	<50	<160	0V to +100	0-10	250
E1-P20	E1-P20/Y	<50	<160	0V to +200	0-5	250
E1-N20	E1-N20/Y	<50	<160	0V to -200	0-5	250
E1-P30	E1-P30/Y	<50	<160	0V to +300	0-3.3	250
E1-N30	E1-N30/Y	<50	<160	0V to -300	0-3.3	250
E1-P50	E1-P50/Y	<50	<160	0V to +500	0-2	250
E1-N50	E1-N50/Y	<50	<160	0V to -500	0-2	250
E1-P60	E1-P60/Y	<90	<200	0V to +600	0-1.67	200
E1-N60	E1-N60/Y	<90	<200	0V to -600	0-1.67	200
E1-P100	E1-P100/Y	<90	<200	0V to +1000	0-1	190
E1-N100	E1-N100/Y	<90	<200	0V to -1000	0-1	190
E1-P125	E1-P125/Y	<100	<250	0V to +1250	0-1	180
E1-N125	E1-N125/Y	<100	<250	0V to -1250	0-1	180
E1-P150	E1-P150/Y	<100	<220	0V to +1500	0-0.67	180
E1-N150	E1-N150/Y	<100	<220	0V to -1500	0-0.67	180
E1-P200	E1-P200/Y	<100	<220	0V to +2000	0-0.5	180
E1-N200	E1-N200/Y	<100	<220	0V to -2000	0-0.5	180

CERTIFICATE

No. U8V 107546 0002 Rev. 00

E1-P250/Y

E1 Series: HV DC/DC Converters
1 WATT Total Output Power
Dimensions 27.9 x 44.5 x 12.7 mm, 0.04 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 2100 V to 4000 VDC

Model Number		Input Current		Output Specifications		Switching Frequency KHZ
Non-RoHs	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
E1-P250	E1-P250/Y	<100	<250	0V to +2500	0-0.4	190
E1-N250	E1-N250/Y	<100	<250	0V to -2500	0-0.4	190
E1-P300	E1-P300/Y	<100	<250	0V to +3000	0-0.33	190
E1-N300	E1-N300/Y	<100	<250	0V to -3000	0-0.33	190
E1-P400	E1-P400/Y	<100	<250	0V to +4000	0-0.25	190
E1-N400	E1-N400/Y	<100	<250	0V to -4000	0-0.25	190

E1-P800/Y

E1 Series: HV DC/DC Converters
1 WATT Total Output Power
Dimensions 27.9 x 66.0 x 12.7 mm, 0.05 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 4100 V to 8000 VDC

Model Number		Input Current		Output Specifications		Switching Frequency KHZ
Non-RoHs	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
E1-P500	E1-P500/Y	<100	<230	0V to +5000	0-0.2	180
E1-N500	E1-N500/Y	<100	<230	0V to +5000	0-0.2	180
E1-P600	E1-P600/Y	<100	<230	0V to +6000	0-0.166	180
E1-N600	E1-N600/Y	<100	<230	0V to +6000	0-0.166	180
E1-P800	E1-P800/Y	<150	<230	0V to +8000	0-0.125	180
E1-N800	E1-N800/Y	<150	<230	0V to +8000	0-0.125	180

CERTIFICATE

No. U8V 107546 0002 Rev. 00

E3-P100/Y

E1 Series: HV DC/DC Converters
3 WATT Total Output Power
Dimensions 27.9 x 35.6 x 12.7 mm, 0.03 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 100V to 2000 VDC

Model Number		Input Current		Output Specifications		Switching Frequency KHZ
Non-RoHs	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
E3-P10	E3-P10/Y	<60	<360	0V to +100	0-30	250
E3-N10	E3-N10/Y	<60	<360	0V to +100	0-30	250
E3-P20	E3-P20/Y	<60	<360	0V to +200	0-15	250
E3-N20	E3-N20/Y	<60	<360	0V to +200	0-15	250
E3-P30	E3-P30/Y	<60	<360	0V to +300	0-9.9	250
E3-N30	E3-N30/Y	<60	<360	0V to +300	0-9.9	250
E3-P50	E3-P50/Y	<60	<360	0V to +500	0-6	250
E3-N50	E3-N50/Y	<60	<360	0V to -500	0-6	250
E3-P60	E3-P60/Y	<105	<380	0V to +600	0-5	200
E3-N60	E3-N60/Y	<105	<380	0V to +600	0-5	200
E3-P100	E3-P100/Y	<105	<380	0V to +1000	0-3	190
E3-N100	E3-N100/Y	<105	<380	0V to +1000	0-3	190
E3-P125	E3-P125/Y	<110	<390	0V to +1250	0-2.4	180
E3-N125	E3-N125/Y	<110	<390	0V to +1250	0-2.4	180
E3-P150	E3-P150/Y	<110	<400	0V to +1500	0-2	180
E3-N150	E3-N150/Y	<110	<400	0V to -1500	0-2	180
E3-P200	E3-P200/Y	<110	<400	0V to +2000	0-1.5	180
E3-N200	E3-N200/Y	<110	<400	0V to +2000	0-1.5	180

CERTIFICATE

No. U8V 107546 0002 Rev. 00

E3-P250/Y

E3 Series: HV DC/DC Converters
3 WATT Total Output Power
Dimensions 27.9 x 44.5 x 12.7 mm, 0.04 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 2100V to 4000 V DC

Model Number		Input Current		Output Specifications		Switching Frequency kHz
Non-RoHS	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
E3-P250	E3-P250/Y	<140	<410	0V to +2500	0-1.2	190
E3-N250	E3-N250/Y	<140	<410	0V to +2500	0-1.2	190
E3-P300	E3-P300/Y	<140	<410	0V to +3000	0-1	190
E3-N300	E3-N300/Y	<140	<410	0V to +3000	0-1	190
E3-P400	E3-P400/Y	<140	<410	0V to +4000	0-0.75	190
E3-N400	E3-N400/Y	<140	<410	0V to +4000	0-0.75	190

E3-P800/Y

E3 Series: HV DC/DC Converters
3 WATT Total Output Power
Dimensions 27.9 x 66 x 12.7 mm, 0.05 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 4100V to 8000 V DC

Model Number		Input Current		Output Specifications		Switching Frequency kHz
Non-RoHS	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
E3-P500	E3-P500/Y	<150	<420	0V to +5000	0-0.6	180
E3-N500	E3-N500/Y	<150	<420	0V to +5000	0-0.6	180
E3-P600	E3-P600/Y	<150	<420	0V to +6000	0-0.5	180
E3-N600	E3-N600/Y	<150	<420	0V to +6000	0-0.5	180
E3-P800	E3-P800/Y	<150	<420	0V to +8000	0-0.375	180
E3-N800	E3-N800/Y	<150	<420	0V to +8000	0-0.375	180



America

CERTIFICATE

No. U8V 107546 0002 Rev. 00

SP7164

SP7164: HV DC/DC Converters
3 WATT Total Output Power
Dimensions 31.8 x 76.2 x 15.2 mm, 0.06 kg
Input Voltage Range 11.5 – 16 Vdc
Output Voltages from 0V to 8000 V DC

Model Number		Input Current		Output Specifications		Switching Frequency KHZ
Non-RoHS	RoHS	No Load mA	Full Load mA	Voltage Vdc	Current mA	
SP7164	SP7164/Y	<150	<250	0V to -8000	0-0.125	180



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