

**APD Series Gen3****Ultra compact PCB mount, regulated, high voltage DC-DC converter**

Nominal Power : 100mW  
 64 models  
 Vout: 0 to 200, 300, 400 or 500Vdc  
 Vin: 5 or 12Vdc  
 Polarity: fixed  
 Gen3 : high frequency switching noise free

**Features :**

Micro-size and lightweight	Tight line & load regulation	Low ripple
PCB flat mounting	Arc and short circuit protected	Low Temperature coefficient
Voltage monitor	Inhibition mode	Optional flying lead

Parameters	Specifications (at Tamb=25°C unless otherwise specified)	
Model	APD5	APD12
Input voltage range Vin	4.5 to 5.5 Vdc	11.5 to 15.5Vdc
Absolute maximum input voltage Vin	24Vdc	
Input current at full load	Typical: 50mA	Typical: 20mA @12V
Input current at no load	<10mA	<10mA
Output voltage	Programmable from 0 to 100%, accuracy +/--1%. Refer to the Selection Guide for voltage range.	
Polarity	Fixed positive or negative	
Full load output ripple	7mVp-p	
Switching frequency	30 to 50 kHz, Vin-dependent.	
Output voltage setting (pin 3)	Via external analog voltage 0 to 2.5V (Zin=1MΩ)	
Load voltage regulation	+/-0.01% no load to full load	
Output voltage monitor (pin 6)	Analog signal 0 to 2.5V, accuracy +/--1%, output impedance :1kΩ	
Output reference voltage (pin 4) (optional)	2.5V +/-0.5%, TC 50ppm/°C, max output current 0.5mA	
Output ON/OFF (pin 5)	ON : 0Volt or connected to ground OFF: not connected Open collector compatible	
Line voltage regulation	+/-0.01% over the specified input voltage range	
Nominal output power	100mW	
Output short circuit protection	Yes, for permanent short circuit	
Input reverse voltage protection	<b>None</b> for Vin < -0.2V	
Temperature coefficient	50ppm/°C over the operating temperature range	
Operating temperature range	-40°C to +85°C ambient	
Storage temperature range	-55°C to +125°C ambient	

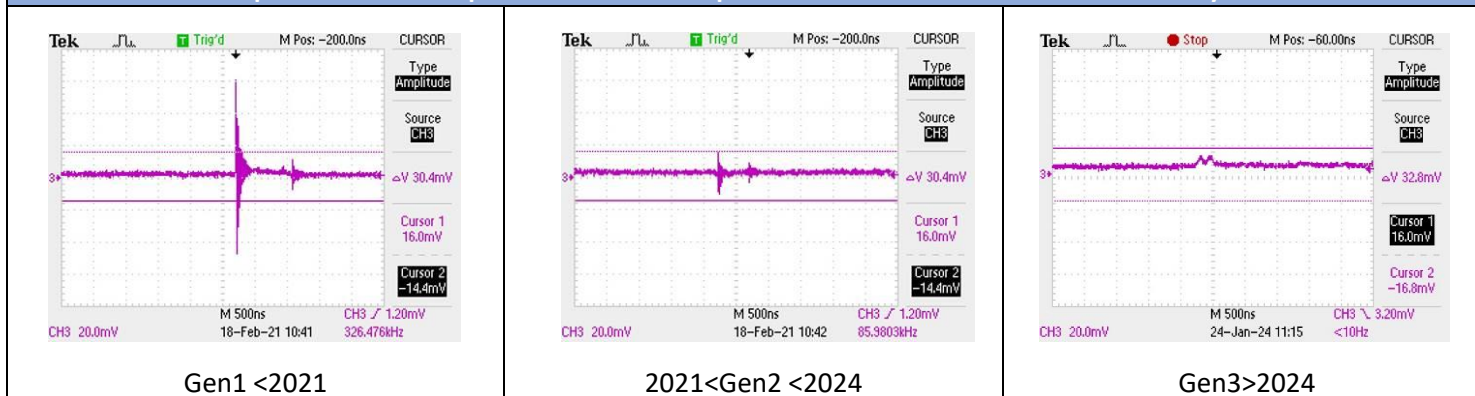


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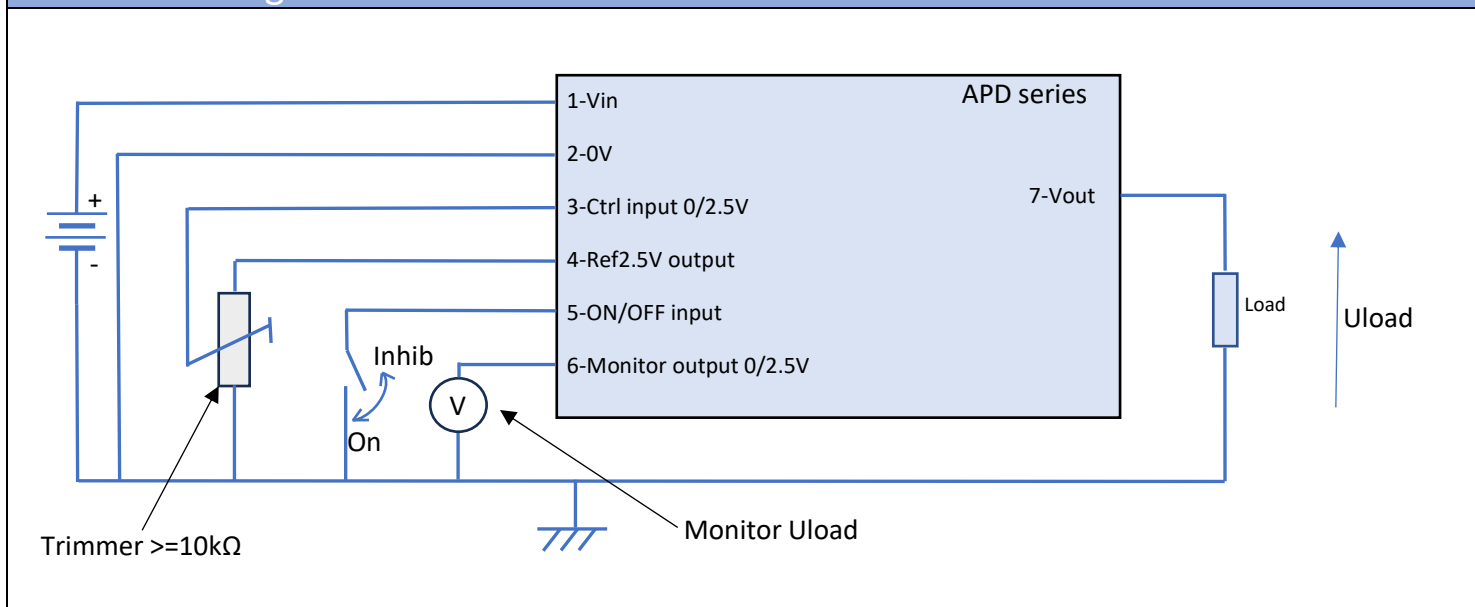
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## Output noise improvement vs product evolutions over the years.

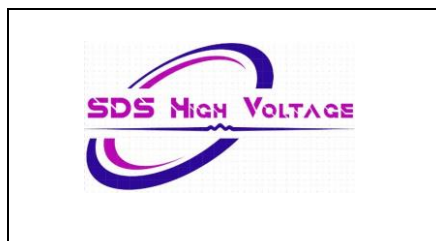


## Functional diagram:



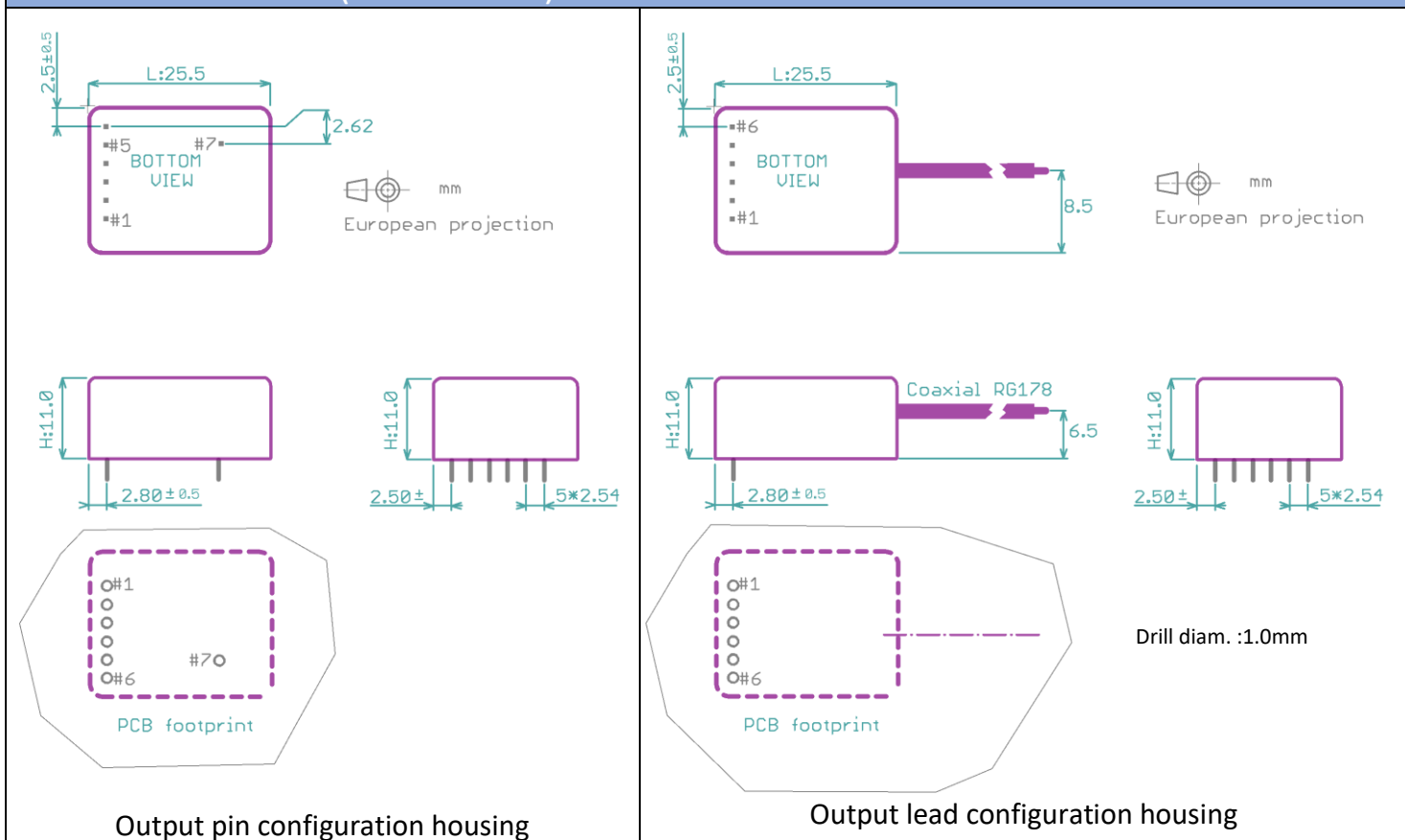
## Package Configuration:

Case material	Tin steel plate internally grounded to
Case dimensions	L 25.5 x W 20 x H 11mm (see mechanical drawing)
Pins	0.63mm square pins
Lead (optional)	Coaxial cable RG178B/U Diam:2mm, length : 50cm
Weight	~13g
Insulation	Fully potted with an UL epoxy resin



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Mechanical details (not to scale):



Pins' function:

Line input	#1: Supply (IN+) #2: 0V supply (IN-)
Output Voltage setting	#3: Control input 0/2.5Vdc (Zin=1MΩ) #4: reference voltage 2.5V (optional), for biasing an external trimmer or ADC
Enable input	#5: ON/OFF (low level active = short to ground to activate the HV output)
Output voltage monitor	#6: 0/2.5Vdc full scall
Output	#2: Output return #7/Lead: Vout

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AP series selection chart							
Vout / Iout	Vin	Polarity	Output style	REF 2.5V	#	Ordering references	
200Vdc / 500µA	12Vdc	-	Pin	No	#1	APD12N0.2-0.1-C0-P	
				Yes	#2	APD12N0.2-0.1-C2.5-P	
			Coaxial cable	No	#3	APD12N0.2-0.1-C0-L	
				Yes	#4	APD12N0.2-0.1-C2.5-L	
		+	Pin	No	#5	APD12P0.2-0.1-C0-P	
				Yes	#6	APD12P0.2-0.1-C2.5-P	
			Coaxial cable	No	#7	APD12P0.2-0.1-C0-L	
				Yes	#8	APD12P0.2-0.1-C2.5-L	
	5Vdc	-	Pin	No	#9	APD5N0.2-0.1-C0-P	
				Yes	#10	APD5N0.2-0.1-C2.5-P	
			Coaxial cable	No	#11	APD5N0.2-0.1-C0-L	
				Yes	#12	APD5N0.2-0.1-C2.5-L	
		+	Pin	No	#13	APD5P0.2-0.1-C0-P	
				Yes	#14	APD5P0.2-0.1-C2.5-P	
			Coaxial cable	No	#15	APD5P0.2-0.1-C0-L	
				Yes	#16	APD5P0.2-0.1-C2.5-L	
300Vdc / 330µA	12Vdc	-	Pin	No	#17	APD12N0.3-0.1-C0-P	
				Yes	#18	APD12N0.3-0.1-C2.5-P	
			Coaxial cable	No	#19	APD12N0.3-0.1-C0-L	
				Yes	#20	APD12N0.3-0.1-C2.5-L	
		+	Pin	No	#21	APD12P0.3-0.1-C0-P	
				Yes	#22	APD12P0.3-0.1-C2.5-P	
			Coaxial cable	No	#23	APD12P0.3-0.1-C0-L	
				Yes	#24	APD12P0.3-0.1-C2.5-L	
	5Vdc	-	Pin	No	#25	APD5N0.3-0.1-C0-P	
				Yes	#26	APD5N0.3-0.1-C2.5-P	
			Coaxial cable	No	#27	APD5N0.3-0.1-C0-L	
				Yes	#28	APD5N0.3-0.1-C2.5-L	
		+	Pin	No	#29	APD5P0.3-0.1-C0-P	
				Yes	#30	APD5P0.3-0.1-C2.5-P	
			Coaxial cable	No	#31	APD5P0.3-0.1-C0-L	
				Yes	#32	APD5P0.3-0.1-C2.5-L	
400Vdc / 250µA	12Vdc	-	Pin	No	#33	APD12N0.4-0.1-C0-P	
				Yes	#34	APD12N0.4-0.1-C2.5-P	
			Coaxial cable	No	#35	APD12N0.4-0.1-C0-L	
				Yes	#36	APD12N0.4-0.1-C2.5-L	
				Pin	No	#37	APD12P0.4-0.1-C0-P

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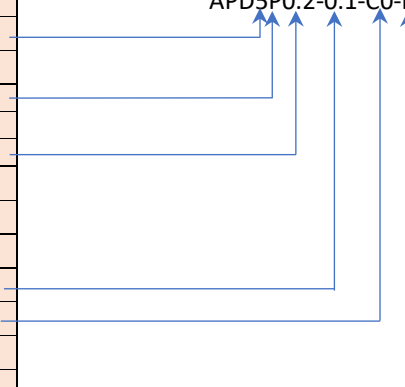
## Ultra compact PCB mount, regulated, high voltage DC-DC converter

	5Vdc	+	Coaxial cable	Yes	#38	APD12P0.4-0.1-C2.5-P
				No	#39	APD12P0.4-0.1-C0-L
			Yes	#40	APD12P0.4-0.1-C2.5-L	
		-	Pin	No	#41	APD5N0.4-0.1-C0-P
				Yes	#42	APD5N0.4-0.1-2.5-P
			Coaxial cable	No	#43	APD5N0.4-0.1-C0-L
	5Vdc	+	Pin	No	#45	APD5P0.4-0.1-C0-P
				Yes	#46	APD5P0.4-0.1-C2.5-P
			Coaxial cable	No	#47	APD5P0.4-0.1-C0-L
		-	Pin	No	#49	APD12N0.5-0.1-C0-P
				Yes	#50	APD12N0.5-0.1-C2.5-P
			Coaxial cable	No	#51	APD12N0.5-0.1-C0-L
500Vdc / 200µA	12Vdc	-	Pin	No	#53	APD12P0.5-0.1-C0-P
				Yes	#54	APD12P0.5-0.1-C2.5-P
			Coaxial cable	No	#55	APD12P0.5-0.1-C0-L
		+	Pin	No	#57	APD5N0.5-0.1-C0-P
				Yes	#58	APD5N0.5-0.1-C2.5-P
			Coaxial cable	No	#59	APD5N0.5-0.1-C0-L
	5Vdc	-	Pin	No	#61	APD5P0.5-0.1-C0-P
				Yes	#62	APD5P0.5-0.1-C2.5-P
			Coaxial cable	No	#63	APD5P0.5-0.1-C0-L
		+	Pin	No	#61	APD5P0.5-0.1-C0-P
				Yes	#62	APD5P0.5-0.1-C2.5-P
			Coaxial cable	No	#63	APD5P0.5-0.1-C0-L

Ordering information		
Series	APD series	APD
Input Voltage	5VDC nominal	5
	12-15VDC nominal	12
Output Polarity	Positive	P
	Negative	N
Output Voltage	0 to 200VDC (0.2kV)	0.2
	0 to 300VDC (0.3kV)	0.3
	0 to 200VDC (0.4kV)	0.4
	0 to 200VDC (0.5kV)	0.5
Output Power	100mW (0.1W)	0.1
REF2.5V	No	C0
	Yes	C2.5
Output Style	Pin	P
	Coaxial cable RG178B/U	L

Example of reference to order:

APD5P0.2-0.1-C0-P



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