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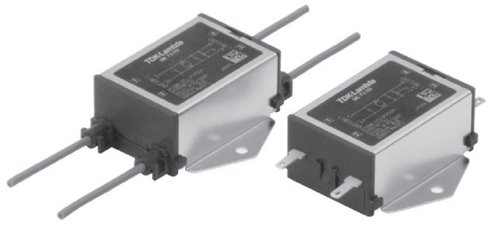
TDK·Lambda

RSAL Series

Single phase 250Vac 0.5 to 6A EMC Filters

https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rsal
https://www.emea.lambda.tdk.com/uk/products/r-series



Medical Industrial Test LED COMM Broadcast

The RSAL single-phase EMC filters are enclosed in a compact case and rated at 250Vac with current levels of 0.5 to 6A, enabling the best attenuation for low current requirements. The RSAL series utilize TDK's amorphous core material to provide both pulse and noise attenuation. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. A choice of models with either wire leads or Faston terminals #110 are available and low leakage current versions.

Features	Benefits
• Compact Size	• Less Space Utilized
• 0.5 to 6A Current Ratings	• Optimizes the Attenuation for Lower Current Requirements
• Lightweight	• Ideal for Portable Equipment
• Amorphous Core Technology	• Reduces High Voltage Pulse Core Saturation
• Safety Certified	• Global Use

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
				Common mode at 25dB	Differential mode at 25dB	
RSAL-20R5W	0.5	Y	700	0.3 to 8	0.4 to 30	58
RSAL-2001W	1	Y	600	0.3 to 8	0.5 to 30	58
RSAL-2002W	2	Y	250	0.5 to 8	0.7 to 30	61
RSAL-2003W	3	Y	150	1 to 7	0.8 to 30	61
RSAL-2006W	6	Y	80	3 to 7	1 to 30	61
RSAL-20R5A	0.5	Y	700	0.3 to 8	0.4 to 30	43
RSAL-2001A	1	Y	600	0.3 to 8	0.5 to 30	43
RSAL-2002A	2	Y	250	0.5 to 8	0.7 to 30	46
RSAL-2003A	3	Y	150	1 to 7	0.8 to 30	46
RSAL-2006A	6	Y	80	3 to 7	1 to 30	46

Model Selector

Model	Rated Current (A)	HV Pulse Protection	Maximum DC Resistance (mΩ)	Attenuation frequency range (MHz)		Weight (g)
				Common mode at 15dB	Differential mode at 25dB	
RSAL-20R5WL	0.5	Y	700	0.1 to 5	0.4 to 30	56
RSAL-2001WL	1	Y	600	0.1 to 5	0.5 to 30	56
RSAL-2002WL	2	Y	250	0.1 to 5	0.7 to 30	59
RSAL-2003WL	3	Y	150	0.2 to 5	0.8 to 30	59
RSAL-2006WL	6	Y	80	1 to 30	1 to 30	59
RSAL-20R5AL	0.5	Y	700	0.1 to 5	0.4 to 30	41
RSAL-2001AL	1	Y	600	0.1 to 5	0.5 to 30	41
RSAL-2002AL	2	Y	250	0.1 to 5	0.7 to 30	44
RSAL-2003AL	3	Y	150	0.2 to 5	0.8 to 30	44
RSAL-2006AL	6	Y	80	1 to 30	1 to 30	44

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RSAL	-	2	0R5	W	L
Series Name		Rated Voltage 2 = 250Vac	Rated Current 0R5 = 0.5A 001 = 1A 006 = 6A	W = Wire terminations A = Push-on terminals	Blank = Standard leakage current L = Low leakage current

Related Products

Type	Current Rating (A)	Series	Low Leakage	Faston on Terminals	Wire Leads	DIN Rail Mount	Fused	Discharge Resistor	Metal Case
General purpose with faston terminals	6	RSEC							
General purpose	0.5 - 6	RSEL	Y	Y	Y				Y
HV pulse protection	0.5 - 6	RSAL	Y	Y	Y				
Power Entry Module with line filter	3, 6, 10	RPE	Y				Y	Y	
Power Entry Module with line filter, HV Pulse	3, 6, 10	RPA	Y					Y	
Compact size with screw terminals	6 - 30	RSEV				DIN-RSEV*			
Multipurpose	3 - 300	RSEN	Y (Up to 30A)			Y (Up to 30A)			
Multipurpose with HV pulse protection	3 - 60	RSAN	Y (Up to 30A)			Y (Up to 30A)			
High attenuation	3 - 300	RSHN	Y (Up to 30A)			Y (Up to 30A)			
High attenuation with pulse protection	3 - 300	RSMN	Y (Up to 30A)			Y (Up to 30A)			
Wide band, high attenuation	6 - 30	RSKN							

* Separate mounting bracket
Click here for TDK-Lambda three phase filters.

Specification

Model		
Input		
Rated Voltage	Vac/Vdc	250 (Safety certified for AC input only)
Input Frequency	Hz	47 - 63
Leakage Current (250Vac, 60Hz)	mA	RSAL-20xxW or A suffix models: 1mA, RSAL-20xxWL or AL models: 0.01mA
Safety Certifications and Markings	-	UL1283, CSA C22.2 No.8, EN60939-1/-2 (ENEC14), conforms to RoHS Directive
Environmental		
Operating Temperature	°C	-25 to +85, derating above 55. See derating curve below
Storage Temperature	°C	-25 to +85
Humidity (non condensing)	%RH	Operating: 15 - 85, Storage 5 - 85
Cooling	-	Convection
Withstand Voltage	Vac	2,500 input to earth
Isolation Resistance (For 1 minute)	MΩ	>100 at 500Vdc
Vibration	-	10-55Hz Amplitude 1.5mm, Sweep for 1 min. X, Y and Z directions for 2 hours each
Other		
Weight (Typ)	g	See model selector
Size (LxWxH)	mm	See outline drawings
Size (LxWxH)	-	See outline drawings
Connectors		Faston or AWG20 wire. See outline drawing
Case Material	-	Metal / plastic
MTBF - MIL-HDBK-217F NOTICE2 GF	Hours	RSAL-2001A: 9,978,048, RSAL-2006AL: 26,441,036
Warranty	Years	5

Notes
See website for detailed specifications, test methods and installation manual
RSAL technical files

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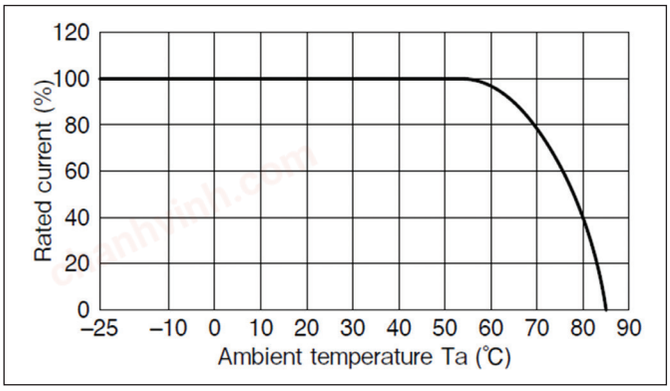
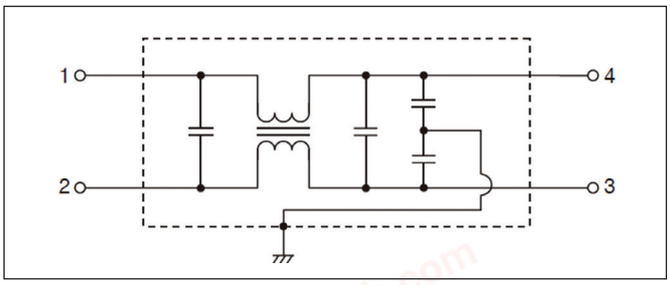
Mechanical Specification

Derating Curve (All models)



Schematic RSAL-2xxxW and RSAL-2xxxA



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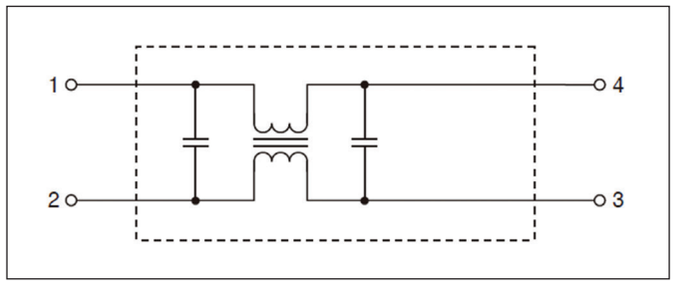
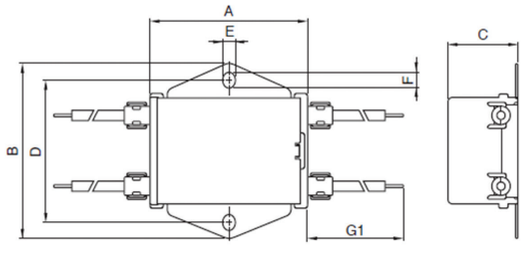
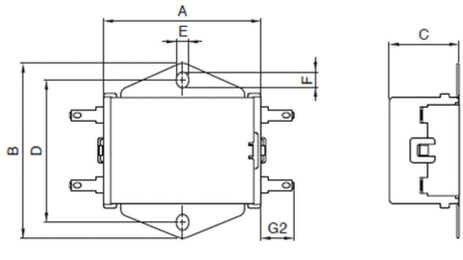


Outline Drawing

RSAL-20R5/2001/2002/2003/2006W(L)



RSAL-20R5/2001/2002/2003/2006A(L)



Dimensions in mm

Part No.	A	B	C	D	E	F	G1	G2
RSAL-20R5W(L)	45	50	20	40	3.5	4.5	300	-
RSAL-2001W(L)								
RSAL-2002W(L)								
RSAL-2003W(L)								
RSAL-2006W(L)								
RSAL-20R5A(L)	45	50	20	40	3.5	4.5	-	9
RSAL-2001A(L)								
RSAL-2002A(L)								
RSAL-2003A(L)								
RSAL-2006A(L)								

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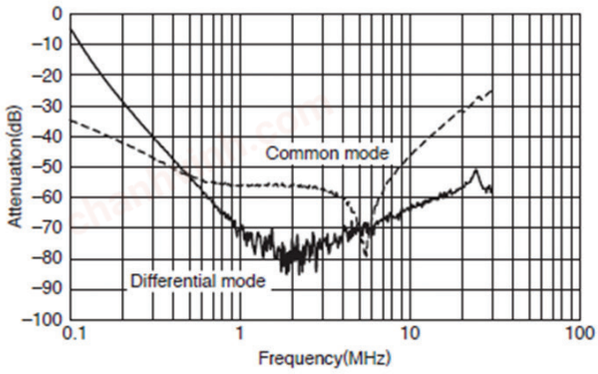
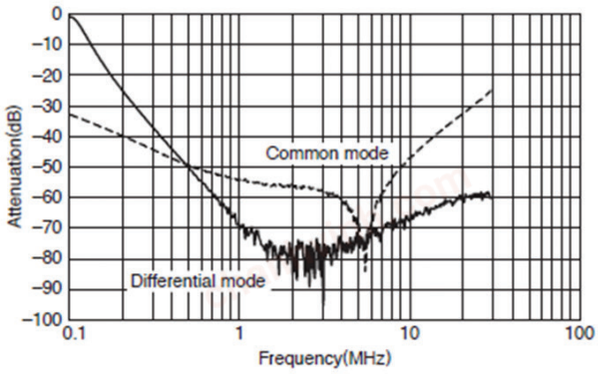
RSAL Attenuation vs. Frequency

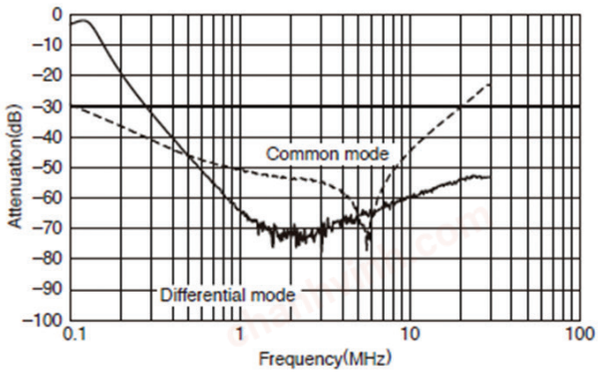
RSAL-20R5W/A



RSAL-2001W/A



RSAL-2002W/A



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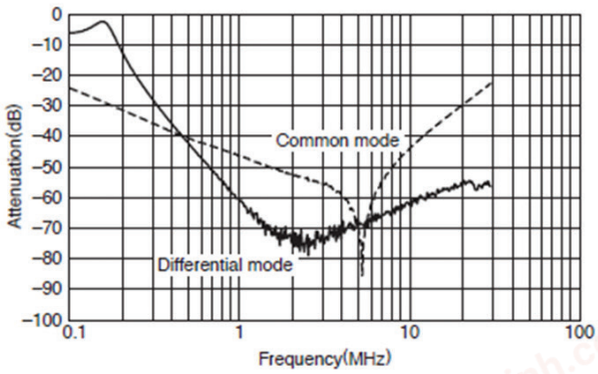
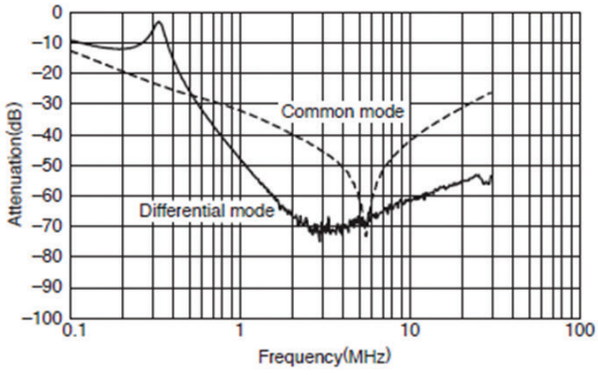


RSAL-2006W/A



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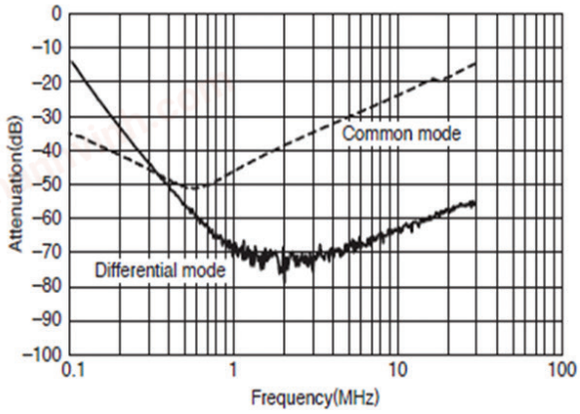
RSAL Attenuation vs. Frequency

RSAL-20R5WL/AL



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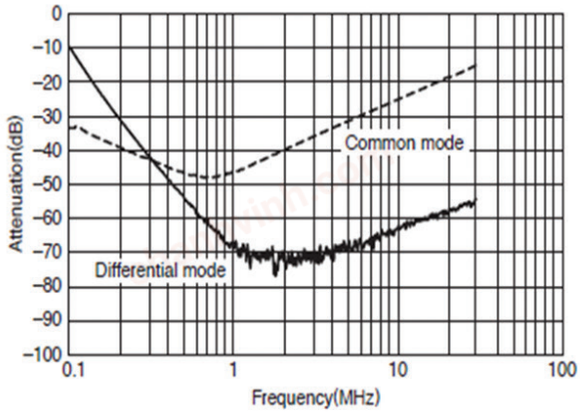

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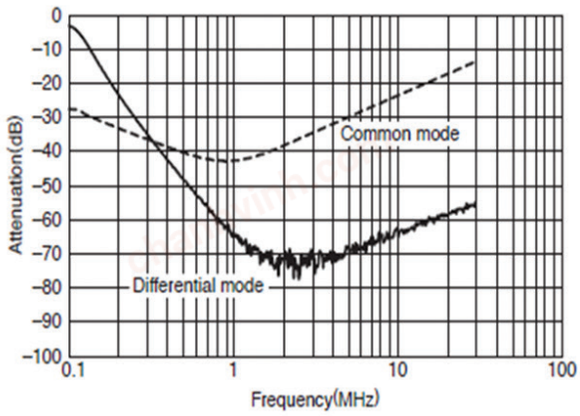

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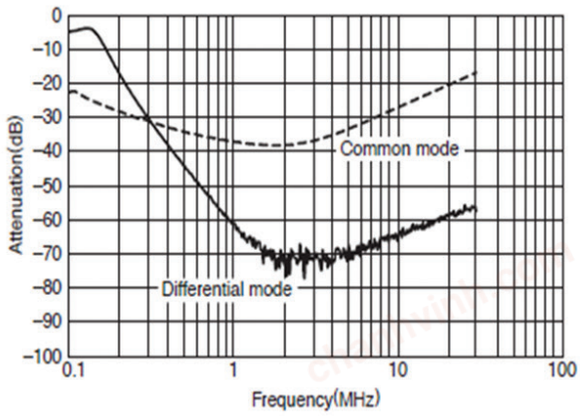

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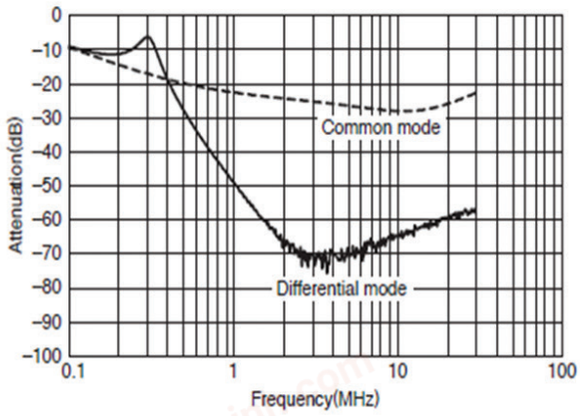

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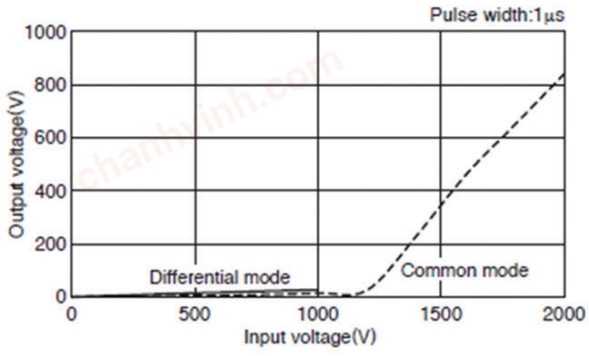
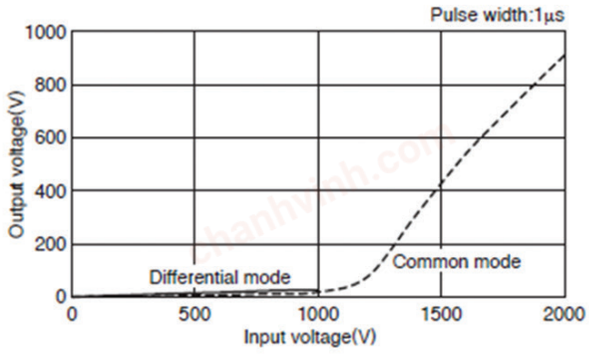
RSAL Pulse Attenuation Characteristics

RSAL-20R5W/A



RSAL-2001W/A



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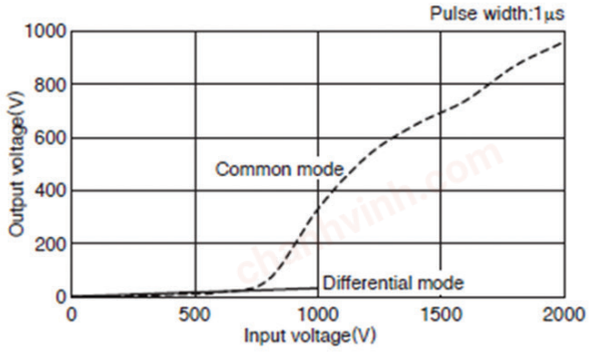

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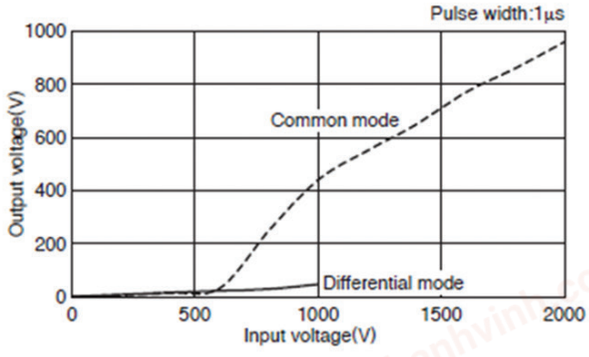

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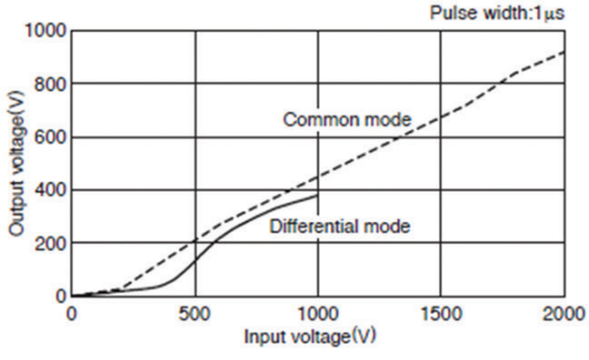

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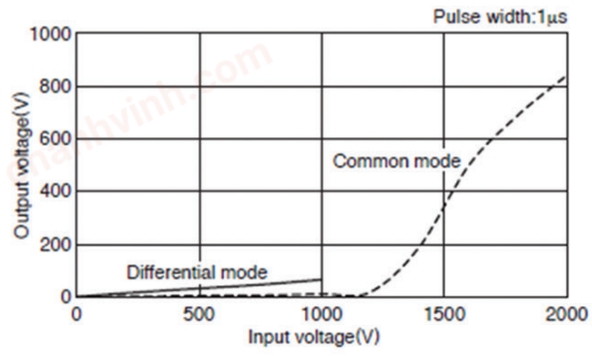
RSAL Pulse Attenuation Characteristics

RSAL-20R5WL/AL



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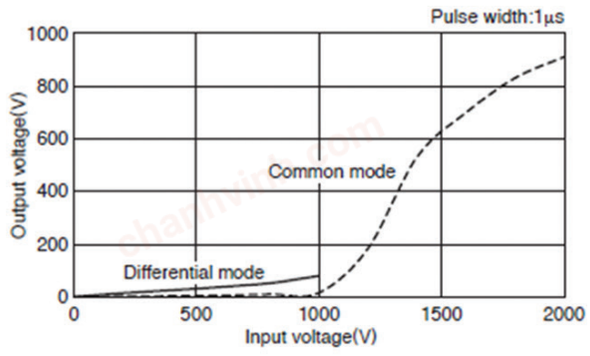

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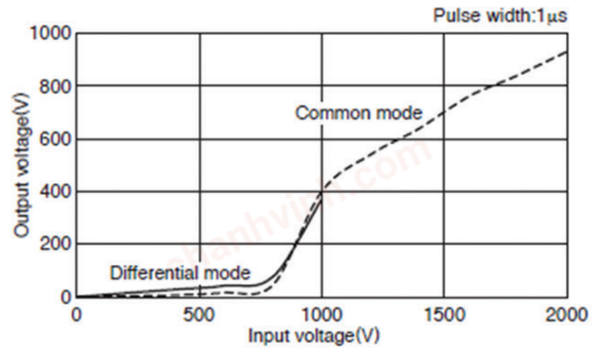

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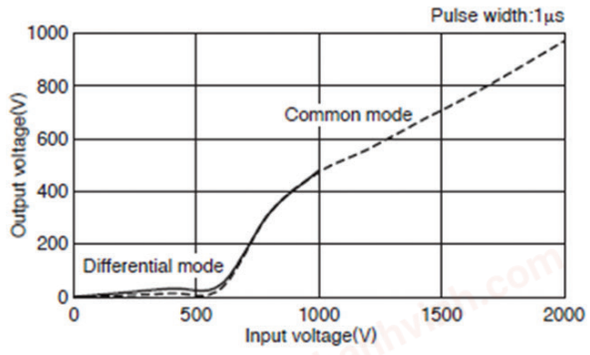

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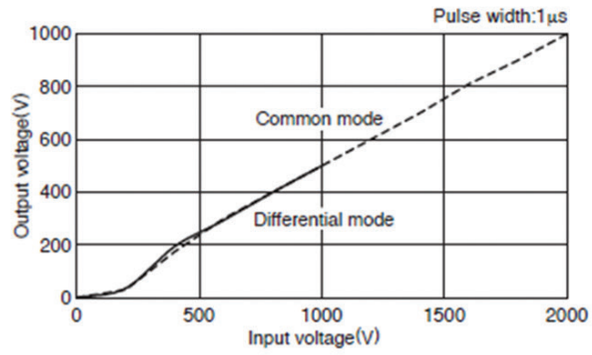

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