

# SFI Products LED Light Overvoltage Protection



## We Supply the **Smallest Package** Surge/ESD Protection Components

The general LED lighting with AC input driver will configure a MOV (Varistor) for overvoltage protection, which can provide surge protection at minimum level. However, there has been a traditional degradation problem of MOV. Not only increase costs of maintenance, but also not assemble on LED board due to height limit. Therefore, it will cause loss for production and assembly.

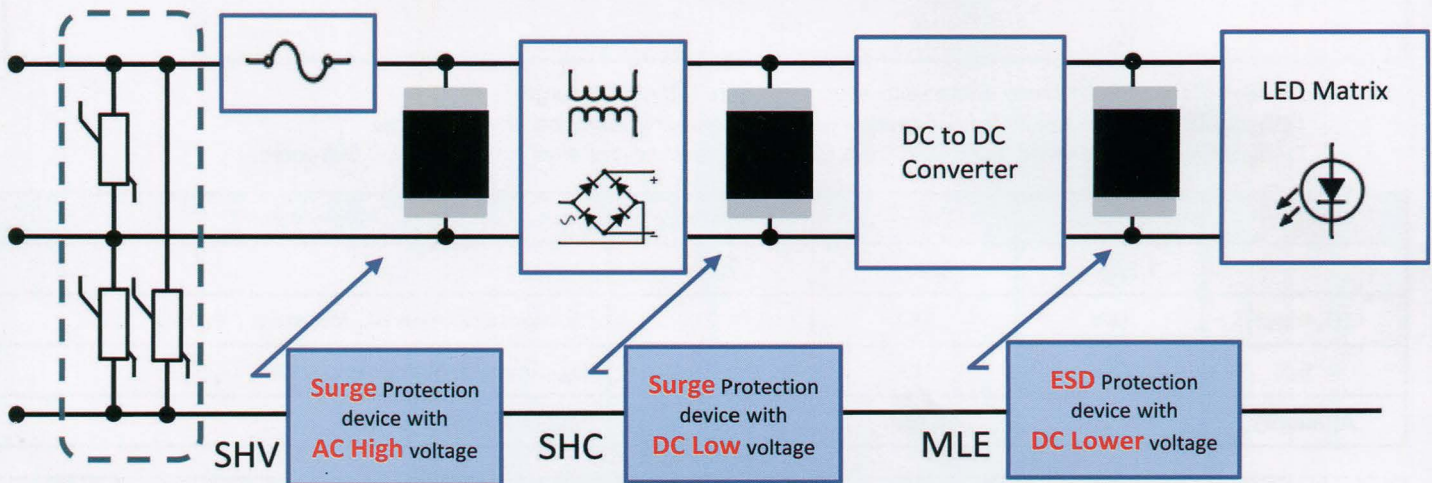
SFI provides excellent and total solution of overvoltage protection for LED light application. We suggest to use level one or multi-level surge protection components as further protection for sensitive LED driver. Also, we recommend to use ESD protection component in LED.

### Our advantage in UL Approval

1. Pass 500A 15 times 8\*20 us strikes  
(Pass UL requirements: surge strikes 15 times, keep the ability of 500A above)
2. Pass 6KV/ 500A 4 times 8\*20 us strikes  
(Pass UL requirements: surge 6KV/ 500A 4 times, keep function stable)



UL File No. E334409- VZCA



Type	Part Number	Working Voltage		Breakdown Voltage	Clamping Voltage	Surge Current (8/20 μs/1 time)	Surge Current (8/20 μs/ (15 times))
		AC	DC				
SHV	Symbol	AC	DC	V ( 1mA )	V	A	A
	SFI1210SV391-201A	250	320	390(±10%)	647	200	100
	SFI2220SV391-501A	250	320	390(±10%)	647	500	250
	SFI2220SV431-501A	275	350	430(±10%)	705	500	250
	SFI2220SV471-501A	300	385	470(±10%)	775	500	250
	SFI2220SV391-801A	250	320	390(±10%)	647	800	500
	SFI2220SV431-801A	275	350	430(±10%)	705	800	500
	SFI2220SV471-801A	300	385	470(±10%)	775	800	500
	SFI3220SV431-801A	275	350	430(±10%)	705	800	500
	SFI3220SV471-801A	300	385	470(±10%)	775	800	500
SHC	SFI1206SC240-501A	14	18	24(±10%)	45	500	ND
	SFI1210SC240-102A	14	18	24(±10%)	45	1000	ND
MLE	SFI0603-050E220NP	3.3	5	15~25	34	ND	ND
	SFI0603-120E100NP	8	12	27~42	60	ND	ND

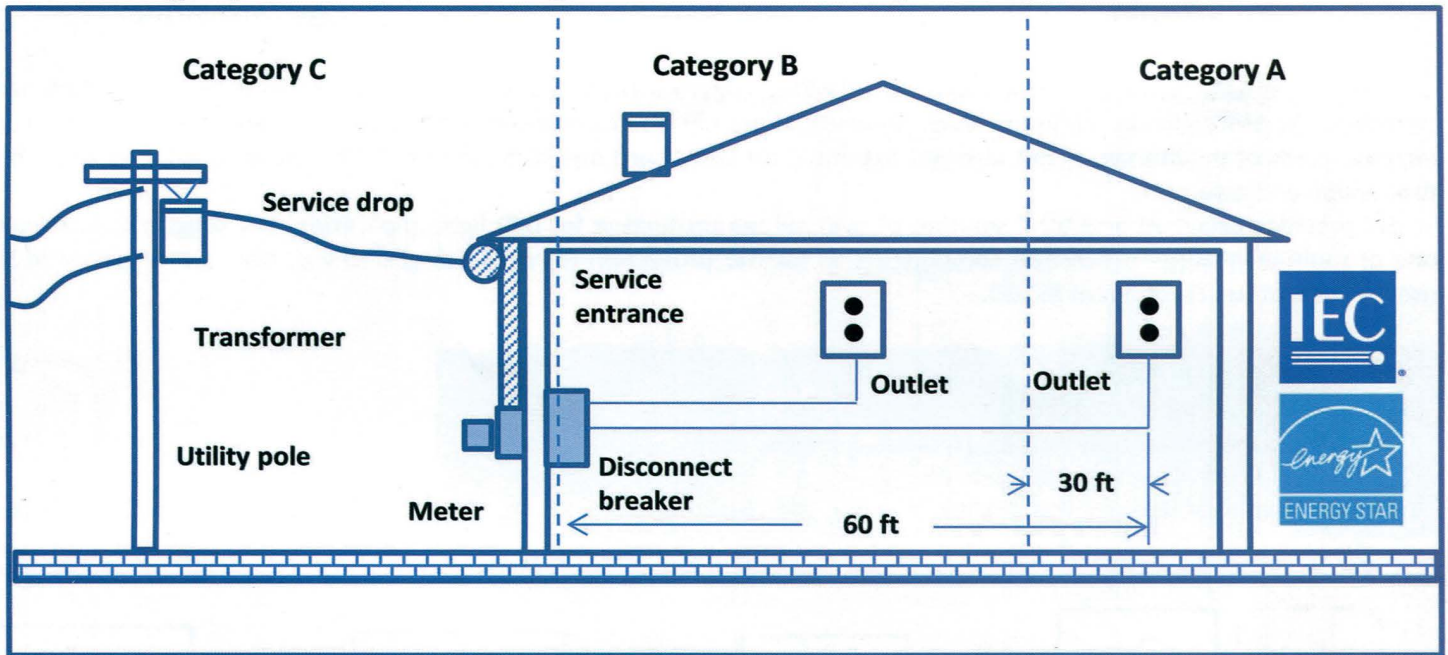


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# Understanding Surge Protective Device Ratings

## Surge protective categories defined by ANSI/IEEE C62.41



Category C: Service entrance, more severe environment: 10kV, 10kA surge.

Category B: Downstream, 30 ft from category C, less severe environment: 6kV, 3kA surge.

Category A: Further downstream, 60 ft from category C, least severe environment: 6kV, 0.5kA surge.

Category	Voltage	Current	Impedance	Application
	1.2/50 $\mu$ s	8/20 $\mu$ s	ohm	
C(Outdoor)	6KV	3KA	2	Outdoor Commercial , Industrial / Parking
B	6KV	3KA	2	Lighting near Service Entrance
A(Indoor)	6KV	0.5KA	12	Indoor /Offices/ Retail

	United States	Europe / America	Taiwan	China
Surge Immunity 1.2*50 $\mu$ s/ 8*20 $\mu$ s LED light bulbs inside	IEEE62.41.2 Ring wave 2.5KV 100Khz Class A	IEC/EN61547 (IEC61000-4-5) 500V/250A,1KV/500A	CNS14676-5 (IEC/EN61000-4-5) 500V/250A 1KV/500A	GB/T18595 (IEC/EN61547) 500V/250A 1KV/500A
Surge Immunity 1.2*50 $\mu$ s/ 8*20 $\mu$ s LED outdoor Luminaires	IEEE62.41.2(Category C) 6KV/3KA 20KV/10KA	IEC/EN61547 IEC/EN61000-4-5 4KV/2KA, 6KV/3KA,10KV/5KA	IEC/EN61000-4-5 4KV/2KA	IEC/EN61000-4-5 4KV/2KA
Safety	UL8750, UL1310 UL1993, UL1598	IEC/EN62560,IEC/EN60598 IEC/EN61347,IEC/EN62031	CNS STD.	GB24819-2009 IEC62031

Character	Test Level		
	Device		
	Self-ballasted Lamp & Semi-luminaries	Luminaries & independent auxiliaries	
		$\leq$ 25W	$>$ 25W
Surge waveform	1.2*50 $\mu$ s	1.2*50 $\mu$ s	1.2*50 $\mu$ s
Line to Line	1.0KV	1.0KV	1.0KV
Line to Ground	1.0KV	1.0KV	2.0KV

