

Y1 Safety Capacitors Require Up to 40 % Less Board Space, Enable Product Miniaturization; Devices Comply With IEC 60384-14, Combine Y1 Rating of 300 V_{AC} and 1500 V_{DC} With Insulation Resistance $\geq 10\,000\text{ M}\Omega$ in SMD Casing

Product Benefits:

- Comply with IEC 60384-14
- Y1 rating of 300 V_{AC} and 1500 V_{DC}
- Insulation resistance $\geq 10\,000\text{ M}\Omega$
- Available in A (10 pF to 680 pF) and B (1000 pF to 1500 pF) case sizes
- Surface-mount casing
- Certified by UL, CSA, VDE, ENEC, and CQC
- RoHS-compliant and halogen-free



Market Applications:

- Industrial motor drives, welding equipment, inverters, UPS, rail power supplies, HVAC systems, and LED drivers
- Smart home automation systems
- Computer switch mode power supplies and AC/DC converters
- Consumer appliances including washing machines and refrigerators
- Automotive charging stations

The News:

Vishay Intertechnology introduces a new series of AC line rated ceramic disc safety capacitors with a Y1 rating of 300 V_{AC} and 1500 V_{DC} in a surface-mount casing. Designed for EMI / RFI suppression and filtering in industrial environments, the Vishay BCcomponents SMDY1...S series reduces board space requirements by up to 40 % compared to previous-generation devices, enabling product miniaturization.

- The devices' Y1 rating enables them to bridge double or reinforced insulation, while supporting use in DC networks up to 1500 V_{DC} in accordance with IEC standard Annex H
- While the industry standards for insulation resistance and operating temperature range are 6000 M Ω and -40 °C to +125 °C, respectively, SMDY1...S series capacitors offer enhanced performance with insulation resistance $\geq 10\,000\text{ M}\Omega$ and an operating temperature range from -55 °C to +125 °C
- To ensure the highest reliability, the devices undergo rigorous 100 % production testing. Every component is subjected to comprehensive end of line testing, including a five-point verification protocol covering AC voltage, capacitance, dissipation factor, insulation resistance, and final visual inspection
- The surface-mount design of the SMDY1...S series supports pick and place assembly with a reflow soldering process, eliminating the manual soldering steps required for through-hole components to simplify manufacturing and reduce production costs
- The capacitors consist of a copper- / silver-plated ceramic disc and feature encapsulation made of flame-resistant epoxy resin in accordance with UL 94 V-0



The Key Specifications:

Series	SMDY1...S					
Ceramic class	1			2		
Ceramic dielectric	U2J			Y5S		Y5U
Voltage (V _{AC})	Y1: 300 (1500 V _{DC})	X1: 440		Y1: 300 (1500 V _{DC})	X1: 440	Y1: 300 (1500 V _{DC}) X1: 440
Min. capacitance (pF)	10					
Max. capacitance (pF)	1500					
Capacitance tolerance (%)	± 10, ± 20					
Mounting	Surface-mount					

Availability:

Samples and production quantities of the SMDY1...S series are available now, with lead times of 12 weeks.

To access the product datasheet on the Vishay Website, go to <http://www.vishay.com/ppg?28586> (SMDY1...S)

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