

Compact SPD for Single Pair  
**RayDat SCH-2 Series**  
**D1 • C1 • C2 • C3**



IEC/EN Category: D1/C1/C2/C3  
 Mode of Protection: Longitudinal, Transverse  
 Coarse Protection: 3 Terminal GDT  
 Voltages: 5, 12, 15, 24, 30, 48, 60, 110V DC  
 Frequency Range: Up to 35MHz  
 Surge Discharge Ratings:  $I_n$ : 10kA,  $I_{max}$ : 20kA,  $I_{imp}$ : 2.5kA  
 Series Load Current: 1A  
 Enclosure: DIN 43880 2/3TE, DIN Rail Mount  
 Terminals: Stranded to 4 mm<sup>2</sup>  
 Housing: Compact Design  
 Compliance: IEC/EN 61643-21

These efficient overvoltage barriers contain both coarse and fine protection stages and provide longitudinal and a transverse surge protection.

The initial protection stage comprises a three-pole gas discharge tube and is designed to divert the primary surge energy. The subsequent fine protection stage is carried out using multiple metal oxide varistors or with fast bi-directional silicon avalanche diodes. Care is taken in the design of this fine protection stage to avoid

capacitive line loading and thereby ensuring a low insertion loss and wide operating frequency range.

Care is taken to ensure energy coordination between the coarse and a fine protection stages at all levels of the incident surge. When power frequency contact occurs between power and communication lines, the hazard of electric shock and fire is increased. To prevent such risk, a thermo-clip is included in the primary protection stage of this device to divert the power frequency current to ground.

**Technical Data**

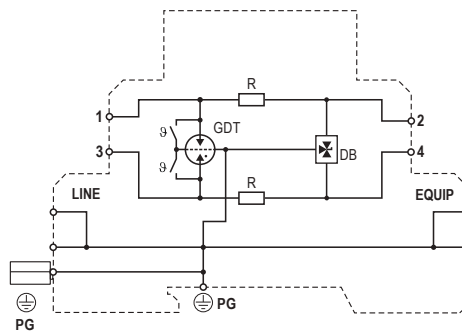
SCH-2 Series		5V	12V	15V	24V	30V	48V	60V	110V
<b>Electrical</b>									
Lines Protected		1 (2 Conductors)							
Nominal Operating Voltage (DC)	$U_n$	5V	12V	15V	24V	30V	48V	60V	110V
Maximum Continuous Operating Voltage (DC)	$U_c$	6V	15V	18V	28V	33V	52V	64V	170V
Rated Load Current at 25°C	$I_L$	1 A							
C2 Nominal Discharge Current (8/20µs)	$I_n$	10kA							
Maximum Discharge Current (8/20µs)	$I_{max}$	20kA							
D1 Impulse Current (10/350µs)	$I_{imp}$	2.5kA							
Residual Voltage at 5kA (8/20µs)	$U_{res}$	<22V	<42V	<48V	<70V	<80V	<140V	<160V	<450V
Rated Spark Overvoltage	(Line-Ground)	7-10V	16-21V	20-24V	30-36V	35-43V	55-68V	67-86V	184-264V
	(Line-Line)	7-10V	16-21V	20-24V	30-36V	35-43V	55-68V	67-86V	184-264V
Response Time Overvoltage Protection	$t_A$	<1 ns							<25 ns
Thermal Protection		Yes							
Insulation Resistance of the Protection	$R_{iso}$	≥ 6 KΩ	≥ 15 MΩ	≥ 18 MΩ	≥ 28 MΩ	≥ 33 MΩ	≥ 52 MΩ	≥ 64 MΩ	≥ 170 MΩ
Serial Resistance per Path	R	1cca. 1.0Ω							
Transverse Capacitance	C	30pF							150pF
Cut-off Frequency	$f_G$	35MHz							10MHz
<b>Mechanical</b>									
Temperature Range		-40 °C to +80 °C							
Terminal Cross Section Multi-strand		4 mm <sup>2</sup>							
Terminal Screw Torque		0.5Nm							
Degree of Protection IEC/EN 60529		IP20							
Housing Material		Thermoplastic; Grey; Extinguishing Degree V-0							
Mounting IEC/EN 60715		35mm DIN Rail							
<b>Order Information</b>									
Order Code		5V	12V	15V	24V	30V	48V	60V	110V
SCH-2-xxx		7070.09	7070.10	7070.11	7070.12	7070.13	7070.14	7070.15	7070.16

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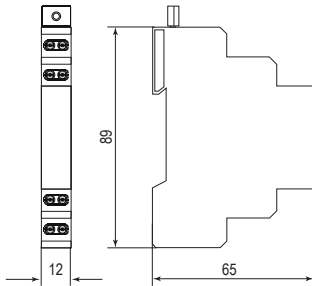
### Internal Configuration

#### Legend

- D* Diode
- DB* Diode Block
- GDT* Gas Discharge Tube
- PG* Protective Grounding
- R* Resistor
- TC* Thermo-clip



### Dimensions & Packaging



SCH-2 Series	5V	12V	15V	24V	30V	48V	60V	110V
<b>Dimensions</b>								
Weight per Unit	54 g							
Dimensions DIN 43880	2/3 TE							
Packaging Dimensions (Single Unit)	70 x 16 x 110 mm							
Minimum Package Quantity	15 pieces							