

# DATA SHEET

## SPD for Shielded Cable RayDat SSH-3 Series D1 • C1 • C2 • C3

\*UL Listed



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: 30 MHz  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA,  $I_{imp}$ : 2.5 kA  
 Series Load Current: 1 A  
 Enclosure: DIN 43880 2/3 TE, DIN Rail Mount  
 Terminals: Stranded to 4 mm<sup>2</sup>  
 Housing: Modular Design  
 Compliance: IEC/EN 61643-21  
 UL 497B 4th Edition

The RayDAT SSH-3 Series of surge protective devices has been developed to protect against the effects of induced voltages onto data, signal and communication circuits.

The circuit topology consists of a multi-stage protector providing both common (longitudinal) mode and differential (transverse) mode protection.

Coarse protection is provided by a three terminal gas discharge tube while fine protection is provided using a high speed silicon

avalanche diode or metal oxide varistor stage. Care is taken to ensure coordination between these two stages without voltage or surge current blind spots occurring.

Thermal protection is provided to reduce the hazards of thermal runaway should there be an inadvertent mains incursion fault. Both common (longitudinal) mode and differential (transverse) mode protection is provided.

If the module is unplugged out of the base, the connection lines remain enabled.

### Technical Data

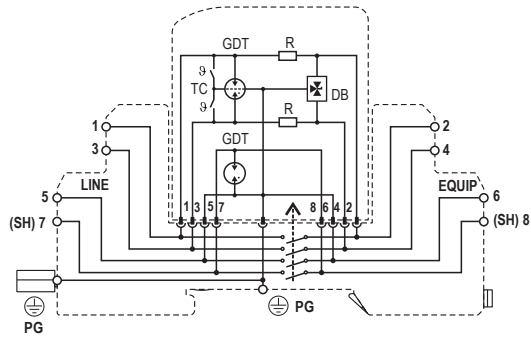
SSH-3 Series		5*	12*	15	24	30*	48	60	110
<b>Electrical</b>									
Lines Protected		1 (2 Conductors)							
Nominal Operating Voltage (DC)	$U_n$	5V	12V	15V	24V	30V	48V	60V	110V
Maximum Continuous Operating Voltage (DC)	$U_c$	6V	15V	18V	28V	33V	52V	64V	170V
Rated Load Current at 25°C	$I_L$	1 A							
C2 Nominal Discharge Current (8/20µs)	$I_n$	10 kA							
Maximum Discharge Current (8/20µs)	$I_{max}$	20 kA							
D1 Impulse Current (10/350µs)	$I_{imp}$	2.5 kA							
Residual Voltage at 5kA (8/20µs)	(Line-Line) $U_{res}$	<22V	<42V	<48V	<70V	<80V	<140V	<160V	<450V
Rated Spark Overvoltage	(Shield-Ground)	184-276V							
	(Line-Line), (Line-Ground)	7-10V	16-21V	20-24V	30-36V	35-43V	55-68V	67-85V	184-264V
Response Time Overvoltage Protection (Shield-Ground)	$t_A$	< 100 ns							
	(Line-Line), (Line-Ground)	< 1 ns							
Insulation Resistance of the Protection (Shield-Ground)	$R_{iso}$	> 1 GΩ / 100V							
	(Line-Line), (Line-Ground)	≥ 6 KΩ	≥ 15 MΩ	≥ 18 MΩ	≥ 28 MΩ	≥ 33 MΩ	≥ 52 MΩ	≥ 64 MΩ	≥ 170 MΩ
Serial Resistance per Path	R	1.6-2.0 Ω							
Transverse Capacitance	(Shield-Ground)	5 pF							
	(Line-Line), (Line-Ground)	50 pF							
Cut-off Frequency	$f_G$	30 MHz							
<b>Mechanical</b>									
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]							
Terminal Cross Section Multi-strand (max.)		12 AWG [4 mm <sup>2</sup> , 2.5 mm <sup>2</sup> Q Version]							
Terminal Screw Torque		4.5 lbf-in [0.5 Nm]							
Degree of Protection IEC/EN 60529		IP 20 (built-in)							
Housing Material		Thermoplastic; Grey; Extinguishing Degree V-0							
Mounting IEC/EN 60715		35mm DIN Rail							
<b>Order Information</b>									
Order Code		5*	12*	15	24	30*	48	60	110
SSH-3-xxx		7086.01	7086.02	7086.03	7086.04	7086.05	7086.06	7086.07	7086.08
SSH-3-xxxQ (Quick Connect Terminals)		7086.90	7086.91	7086.92	7086.93	7086.94	7086.95	7086.96	7086.97
SSH-3-xxxM (module)		7086.09	7086.10	7086.11	7086.12	7086.13	7086.14	7086.15	7086.16

# RayDat SSH-3 Series

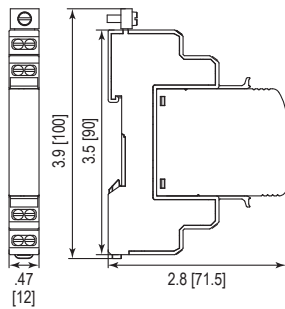
## Internal Configuration

### Legend

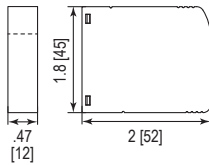
- DB Diode Block
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor
- SH Shielded
- TC Thermo-clip



## Dimensions & Packaging

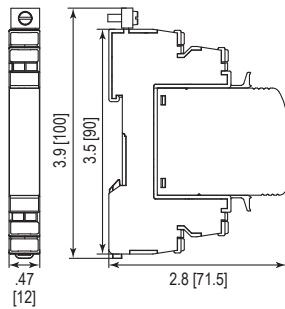


SSH-3 Series	5	12	15	24	30	48	60	110
<b>Dimensions</b>								
Weight per Unit	2.11 oz [60 g]							
Dimensions DIN 43880	2/3 TE							
Packaging Dimensions (Single Unit)	3.4 x .59 x 4" [87 x 15 x 102 mm]							
Minimum Package Quantity	15 pieces							



SSH-3-xxxM Series	5	12	15	24	30	48	60	110
<b>Dimensions</b>								
Weight per Unit	.91 oz [26 g]							
Packaging Dimensions (Single Unit)	3.4 x .59 x 4" [87 x 15 x 102 mm]							
Minimum Package Quantity	15 pieces							

## Quick Connect Terminals



SSH-3-xxxQ Series	5	12	15	24	30	48	60	110
<b>Dimensions</b>								
Weight per Unit	2.18 oz [62 g]							
Dimensions DIN 43880	2/3 TE							
Packaging Dimensions (Single Unit)	3.4 x .59 x 4" [87 x 15 x 102 mm]							
Minimum Package Quantity	15 pieces							



Bases with Quick Connect Terminals enable faster installation and have built-in contacts to enhance vibration resistance.

inches  
[mm]

Information contained in this document is subject to change at any time without notice.

