

MSTronic Co., Ltd.

2F, 12, Gongshang Rd., Wugu District, New Taipei City, 248, Taiwan

TEL:886-2-2293-0159 FAX:886-2-2292-8851

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MS-T405G

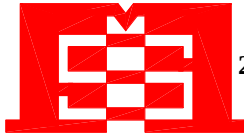
4 Ports Network Lightning/Surge Protector
5Gigabit 5KA PoE Compatible

Feature

- + **Shielded RJ45 jack and metal housing for EMI noise suppression**
- + **CAT5/CAT5e compatible**
- + **5Gigabit Ethernet available**
- + **Support 4 ports PoE Surge Protector**
- + **Integrated mounting brackets**
- + **DIN rail mount available (Option Kit)**
- + **802.3af/at/bt/PoH compliant**
- + **AC/DC, DC/DC PoE available**

Specification

1. Nominal voltage operating DC voltage: 56 V
2. Max. continuous operating DC voltage: 58V
3. Max. continuous DC voltage pair-pair (PoE): 58V
4. Nominal current: 1.25 A(Each pair of lines)
5. Nominal discharge current line-line: 15A (8/20 μ s)
6. Nominal discharge current line-FG: 100A (10/1000 μ s,300times with 3mins interval)
7. Total nominal discharge current line-FG: 5KA (8/20 μ s,10times with 3mins interval)
8. Voltage protection level line- FG for In DC Breakdown Voltage: 75V ~ 100V (@rising voltage 100V/s)
9. Voltage protection level line- line for In DC Breakdown Voltage: 26V ~ 550V (@rising voltage 100V/s)
10. Voltage protection level line-FG for In Surge Breakdown Voltage: 98V ~ 550V (@rising voltage 1000V/ μ S)
11. Voltage protection level line-line for POE In Maximum Breakdown Voltage : 6V ~ 13V @IPP = 1~10A(8/20 μ S)
12. Capacitance line-line $\leq$ 0.3 PF(SP3312T)
13. Capacitance line-FG $\leq$ 3 PF(BL075M-CA5)



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- 14. Operating temperature range -40°C to +85°C
- 15. Connection (input / output) RJ45 socket
- 16. Pinning 1 / 2, 3 / 6, 4 / 5, 7 / 8
- 17. Data Rate : 10/100/1000/5000 Mbps
- 18. Weight : 336g
- 19. Dimensions :110mmx110mmx25mm





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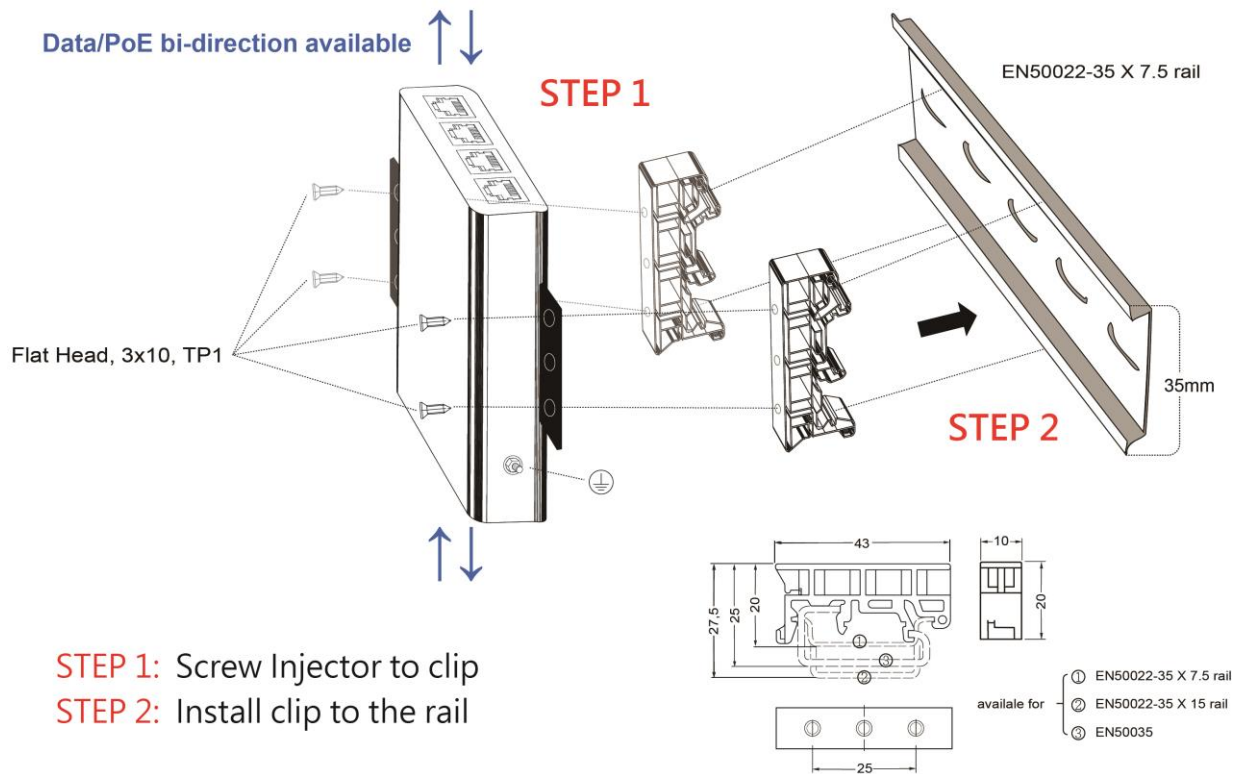
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Option: DIN rail mounting kit

Application





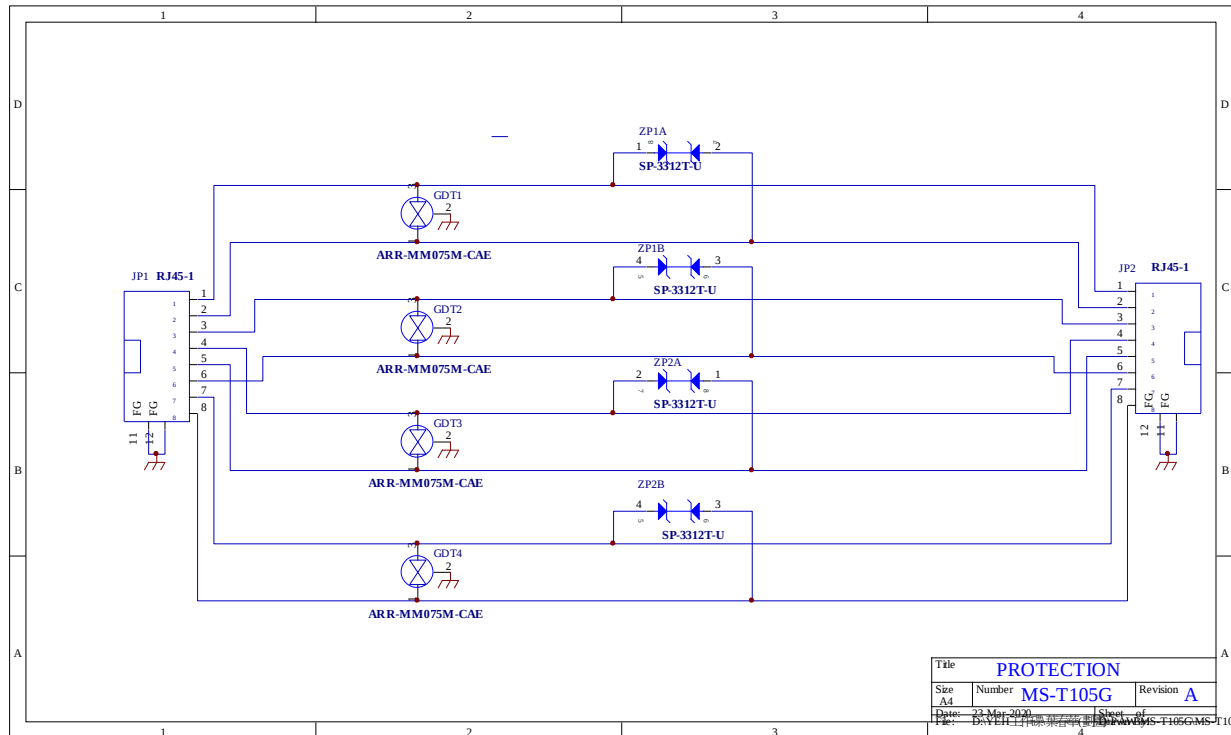
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TVS Diode Arrays (SPA®Diodes) Lightning Surge Protection- SP3312T Series



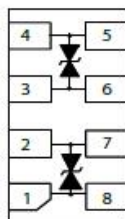
SP3312T Series 3.3V 15A Diode Array



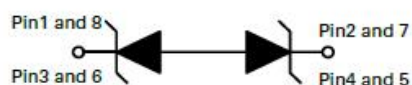
Description

The SP3312T integrates 4 channels (2 differential pair) of low capacitance diodes to protect sensitive I/O pins against lightning induced surge events and ESD. This robust device can safely absorb up to 15A per IEC 61000-4-5 2nd Edition ($t_p=8/20\mu s$) without performance degradation and a minimum $\pm 30kV$ ESD per IEC 61000-4-2 international standard. The low loading capacitance makes the SP3312T ideal for protecting high-speed signal pins.

Pinout



Functional Block Diagram



Features

- ESD, IEC 61000-4-2, $\pm 30kV$ contact, $\pm 30kV$ air
- EFT, IEC 61000-4-4, 40A ($t_p=5/50ns$)
- Lightning, IEC 61000-4-5 2nd Edition, 15A ($t_p=8/20\mu s$)
- Low capacitance of 1.3pF (TYP) per I/O
- Low leakage current of $0.01\mu A$ (TYP) at 3.3V
- Low variation in capacitance vs. bias voltage: 0.3pF Typical ($V_R=0$ to 2.5V)
- AEC-Q101 qualified
- Moisture Sensitivity Level (MSL-1)

Applications

- 10/100/1000 Ethernet
- Integrated magnetics/ RJ45 connectors
- LAN/WAN Equipment
- Security Cameras
- Industrial Controls
- Notebook & Desktop Computers



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Absolute Maximum Ratings

Symbol	Parameter	Value	Units
I_{PP}	Peak Current ($t_p=8/20\mu s$)	15.0	A
P_{PK}	Peak Pulse Power ($t_p=8/20\mu s$)	250	W
T_{OP}	Operating Temperature	-40 to 125	°C
T_{STOR}	Storage Temperature	-55 to 150	°C

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Thermal Information

Parameter	Rating	Units
Storage Temperature Range	-55 to 150	°C
Maximum Junction Temperature	150	°C
Maximum Lead Temperature (Soldering 20-40s)	260	°C

Electrical Characteristics ($T_{OP}=25^{\circ}C$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V_{RWM}				3.3	V
Snap Back Voltage	V_{SB}	$I_{SB}=50mA$	2.8			V
Reverse Leakage Current	I_{LEAK}	$V_R=3.3V$, I/O to GND		0.01	0.05	μA
Clamp Voltage ¹	V_C	$I_{PP}=1A$, $t_p=8/20\mu s$, Fwd		6.0		V
		$I_{PP}=2A$, $t_p=8/20\mu s$, Fwd		7.0		V
		$I_{PP}=10A$, $t_p=8/20\mu s$, Fwd		13.0		V
Dynamic Resistance ²	R_{DYN}	TLP, $t_p=100ns$, I/O to GND		0.40		Ω
ESD Withstand Voltage ¹	V_{ESD}	IEC61000-4-2 (Contact)	± 30			kV
		IEC61000-4-2 (Air)	± 30			kV
Variation in Capacitance with Reverse Bias		Pins 1, 8 to 2, 7 and pins 3, 6 to 4, 5 $V_R=0$ to 2.5V, $f=1MHz$		0.3		pF
Diode Capacitance ¹	C_{VO-GND}	Reverse Bias=0V		1.3		pF

Note:

¹ Parameter is guaranteed by design and/or device characterization.

² Transmission Line Pulse (TLP) with 100ns width and 200ps rise time.