



Automotive Electronics Over Voltage Protection---LangTuo

-- 20180821



V 1804

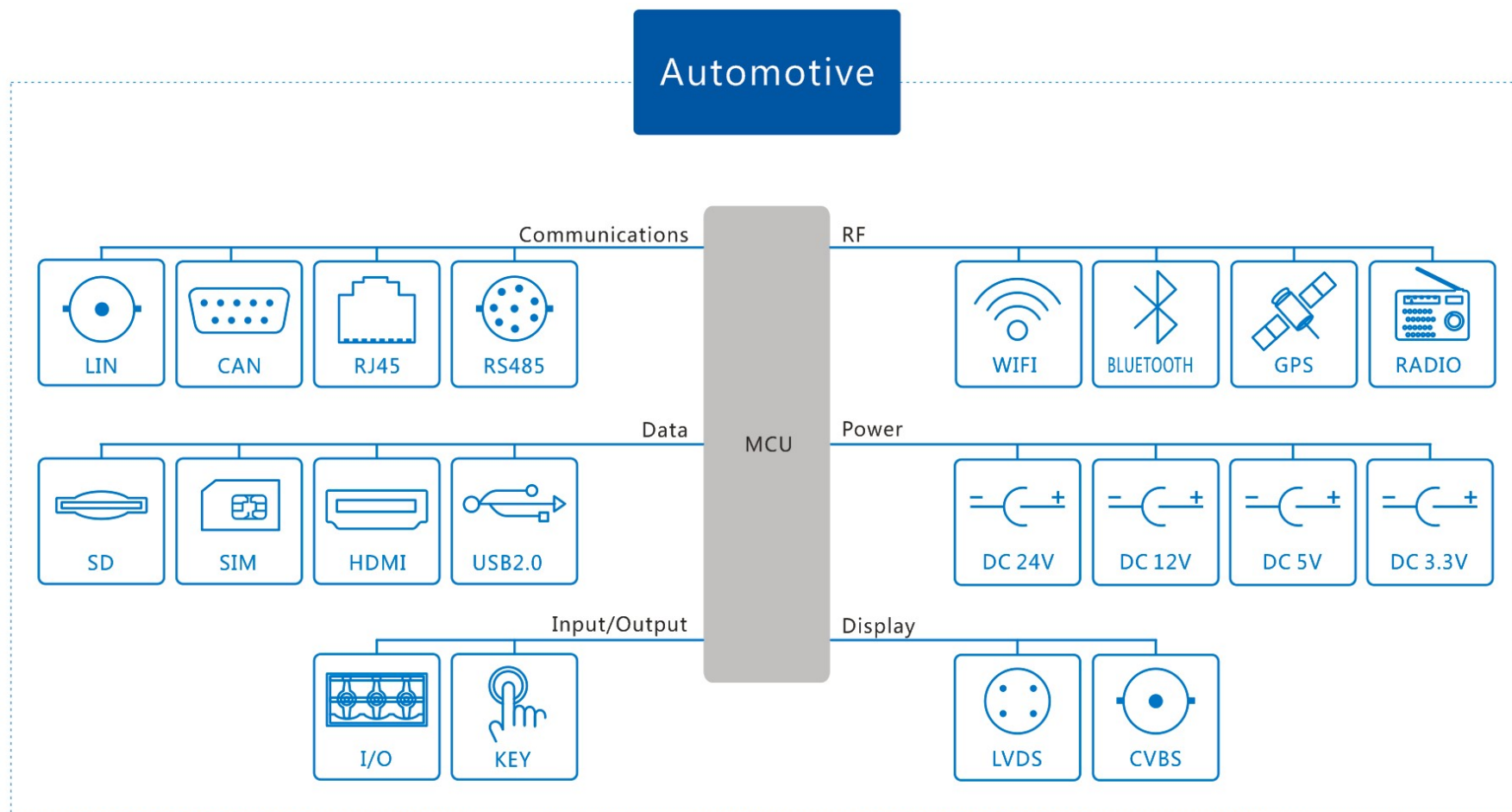
二，汽车电子实验要求

深圳浪拓电子 (LangTuo) 向业界提供最广泛且最尖端的电路保护产品及解决方案产品组合。

类别	标准	标准号	标准名称
静电放电 抗扰度	ISO标准	ISO 10605	Road vehicles-Test methods for electrical disturbances form electrostatic discharge
	GB标准	GB/T 19951	道路车辆 静电放电产生的电干扰试验方法
沿电源线的 瞬态干扰/电 器负荷	ISO标准	ISO7637-2	Road vehicles-Electronic disturbances form conduction and coupling-parts2: Electronical transient conduction along supply lines only
	GB标准	GB/T 21437-2	道路车辆由传导和耦合引起的点干扰-第二部分：沿电源线的瞬态传导
	ISO标准	ISO16750-2	Road vehicles-Environment conditions and testing for electrical and electronic equipment -Parts2: Electrical loads
	GB标准	GB/T 28046-2	道路车辆 电气及电子设备的环境条件和试验-第二部分：电气负荷
	ISO标准	ISO21848	Road vehicles--Electrical and electronic equipment for a supply voltage of 42V-- Electronic loads
	GB标准	GB/T 28045	道路车辆 42V 供电电压的电气和电子设备 电气负荷
除电源线外的 瞬态干扰	ISO标准	ISO7637-3	Road vehicles-Electrical disturbances for conduction and coupling-Parts 3: Electrical transient transmission by capacitive and inductive coupling via line other than supply lines

三，汽车电子过电压解决方案

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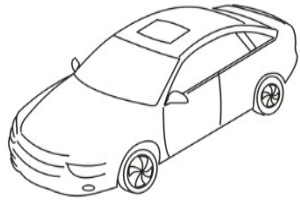
用料汇总

深圳浪拓电子 (LangTuo) 向业界提供最广泛且最尖端的电路保护产品及解决方案产品组合。

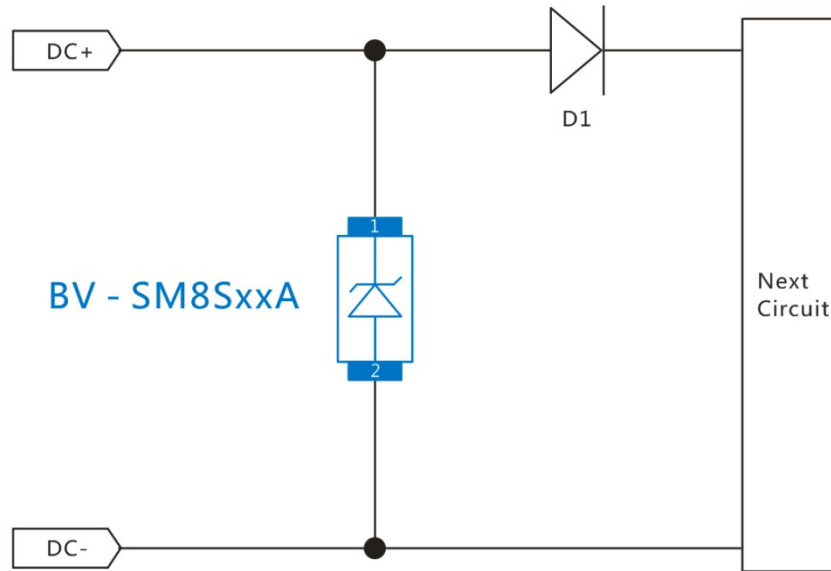
应用	防护电路图	测试标准及波形	器件选型
12V DC电源	page6	ISO7637-2波形1、2a、2b、3a、3b、5b	BV-SMBJ33CA/BV-SMCJ33CA
	page5	ISO7637-2波形5a	BV-SM8S24A
24V DC电源	page7	ISO7637-2波形1、2a、2b、3a、3b、5b	BV-SMBJ36CA/BV-SMCJ36CA
		ISO7637-2波形5a、5b	BV-SM8S36A
CAN	Page10 Page11	ISO10605: 2010 Contact 25KV Air 25KV	BV-T324Z2CB/BV-T305ZCB
LIN	page12	ISO10605: 2010 Contact 25KV Air 25KV	BV-D324ZCB
RF	page20	ISO10605: 2010 Contact 30KV Air 30KV	BV-FA05UC
KEY	Page8 Page9	ISO10605: 2010 Contact 30KV Air 30KV	BV-D505ZC/BVF-D505ZA
SD	Page13	ISO10605: 2010 Contact 12KV Air 18KV	BV-SRV05-4
HDMI	Page19	ISO10605: 2010 Contact 15KV Air 15KV	BV-FK05U4CA+BV-SRV05-4
SIM	Page14	ISO10605: 2010 Contact 15KV Air 15KV	BV-FK05U4CA
USB2.0	Page15 Page16	ISO10605: 2010 Contact 15KV Air 15KV	BV-SR05/BV-FE05ZA+BV-FA05UCA
LVDS	Page23	ISO10605: 2010 Contact 15KV Air 15KV	BV-FK05U4CA+BV-FE05ZA
USB3.0	Page17 Page18	ISO10605: 2010 Contact 15KV Air 15KV	BV-FK05U4CA+BV05C
RJ45	Page24	ISO10605: 2010 Contact 12KV Air 18KV	BV-SRV05-4
5V	Page21	ISO10605: 2010 Contact 30KV Air 30KV	BV-D505ZC
3.3V	Page22	ISO10605: 2010 Contact 30KV Air 30KV	BV-D303ZCB
RS485	Page25	ISO10605: 2010 Contact 30KV Air 30KV	BV_SM712
CVBS	Page26	ISO10605: 2010 Contact 30KV Air 30KV	BS0060M-3

DC power----P5a (12V system)

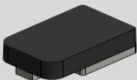
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ISO7637: 2004
P5a: 120V



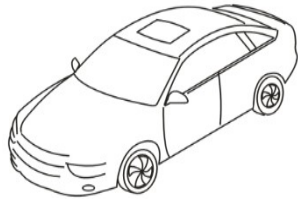
System	12V
Us	120V
Rj	2Ω
Td	400ms

	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Level@system
	BV-SM8S24A	10×15.5×4.9	10μA@24V	29.5V@5mA	38.9V@170A	120V (2Ω/400ms) @12V system

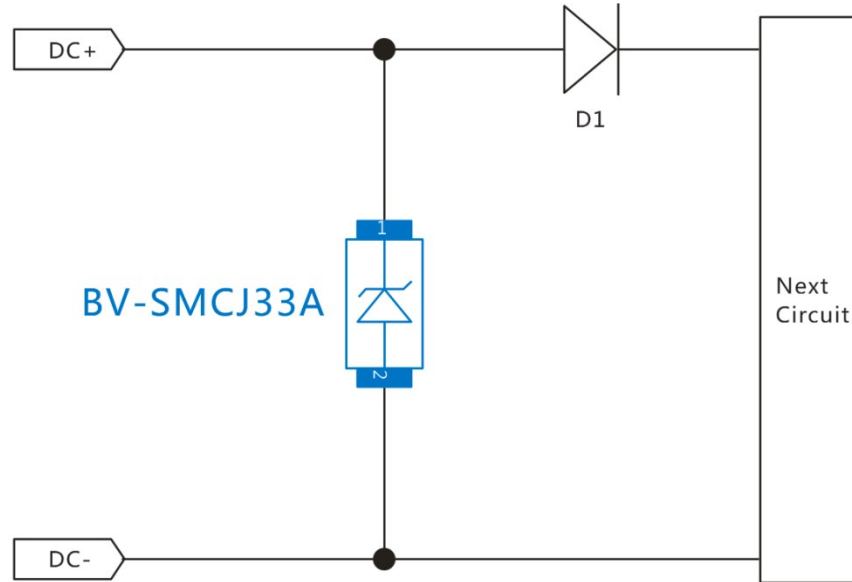


DC power----P5b (12V system)

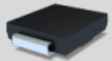
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ISO7637: 2004
P5b : 35V



System	12V
Us	35V

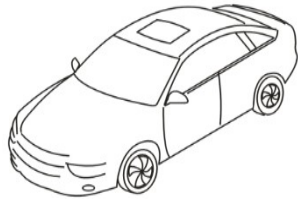


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Level@system
BV-SMCJ33A	8×6×42.7	10μA@33V	36.7V@1mA	53.3V@28.2A	35V@12V system



DC power----P5a、 P5b (24V system)

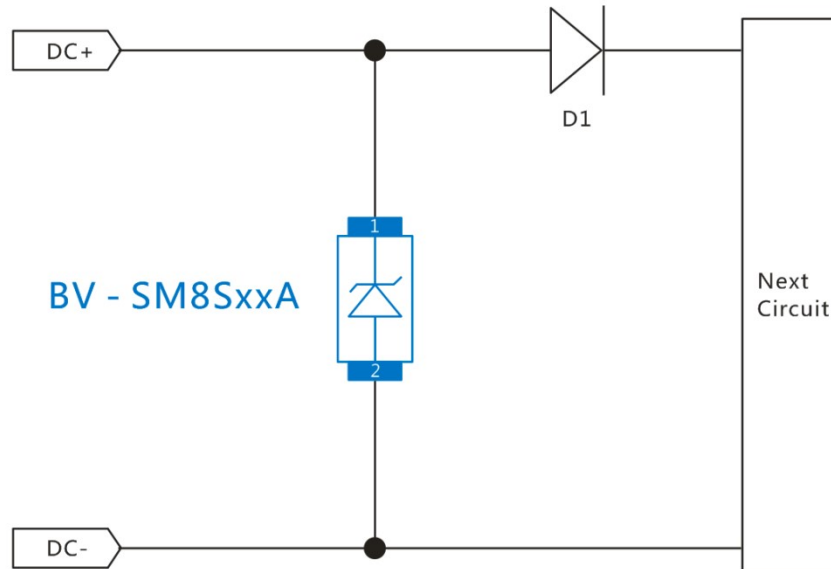
浪拓电子——领先的电路保护元件&防护解决方案提供



ISO7637: 2004

P5a: 210V

P5b: 65V



P5a

System	24V
Us	210V
Rj	4Ω
Td	400ms

P5b

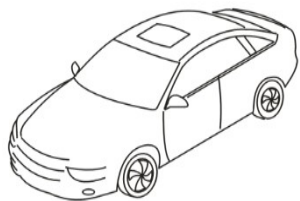
System	24V
Us	65V



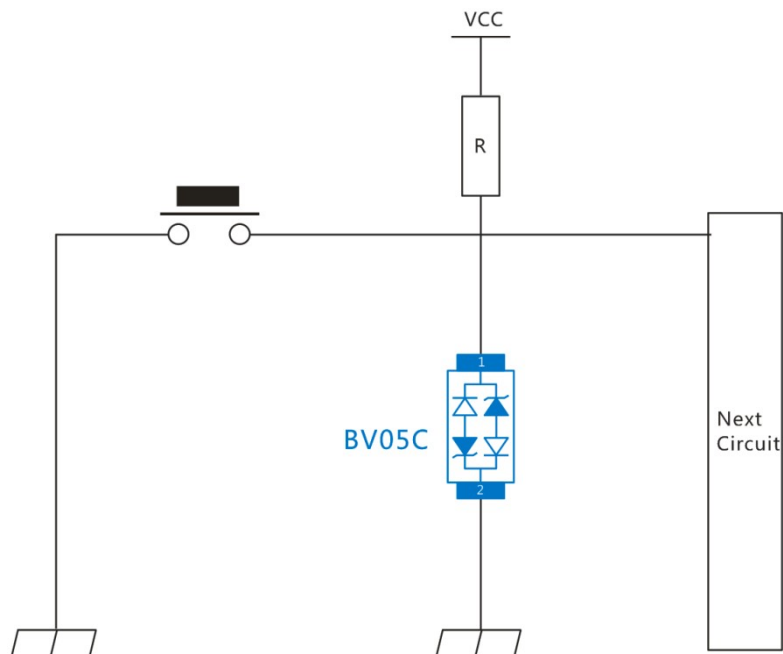
Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Level@system
BV-SM8S36A	10×15.5×4.9	10μA@36V	44.2V@5mA	58.1V@114A	65V@24V system



Key



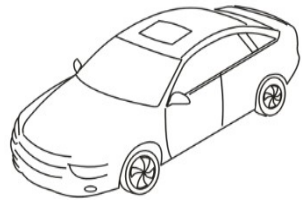
ISO10605: 2010
 Contact : 30KV
 Air : 30KV



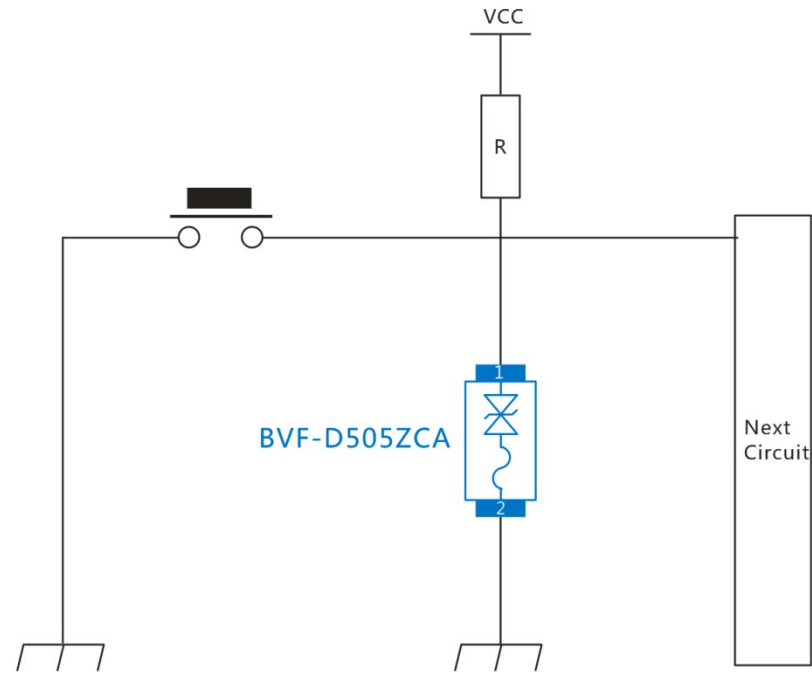
	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV05C	2.5x1.28x1.1mm	5uA@5V	6V@1mA	18.3V@8A	≤1.5pF



Key (Open failure)



ISO10605: 2010
 Contact : 30KV
 Air : 30KV

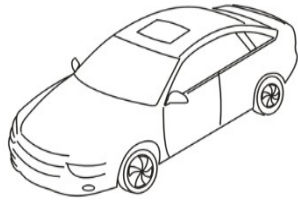


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BVF-D505ZCA	1.6x0.8x0.6mm	1uA@5V	6V@1mA	13V@12A	≤50pF

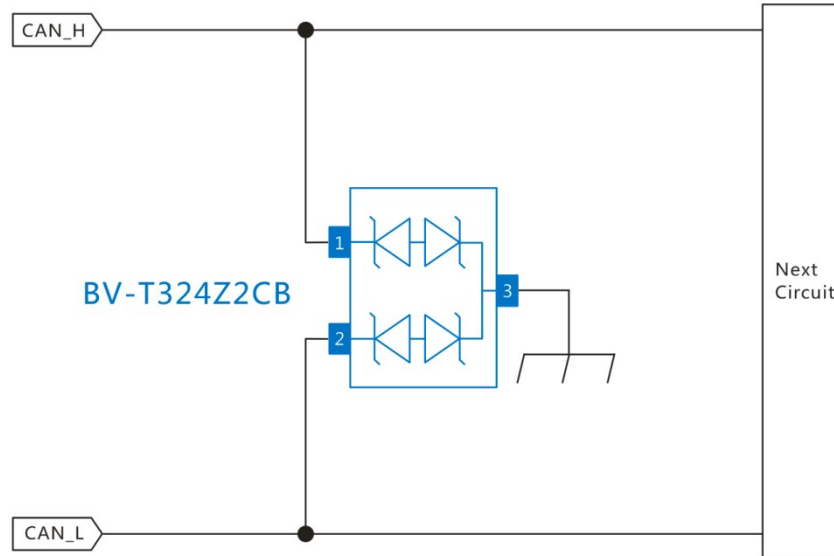


CAN (24V)

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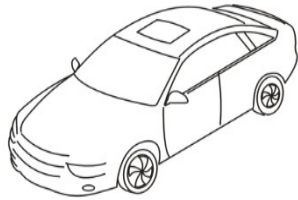
ISO10605: 2010
 Contact: 25KV
 Air: 25KV



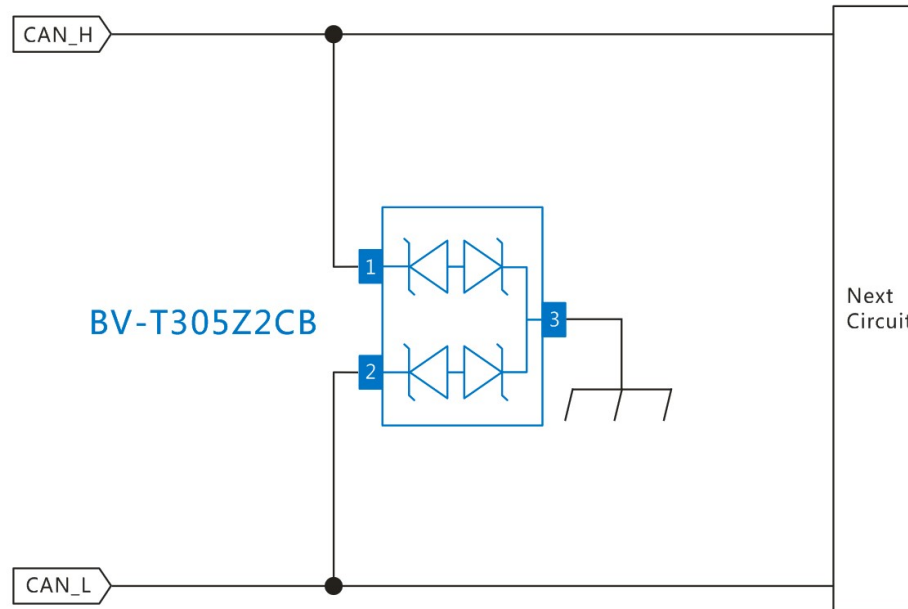
	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-T324Z2CB	2.9X2.4X1.0mm	1uA@24V	26.7V@1mA	52V@5.5A	≤50pF

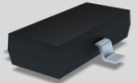


CAN (5V)

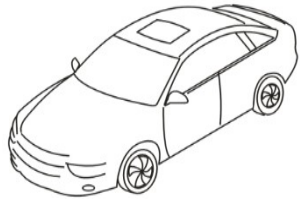


ISO10605: 2010
Contact: 25KV
Air: 25KV

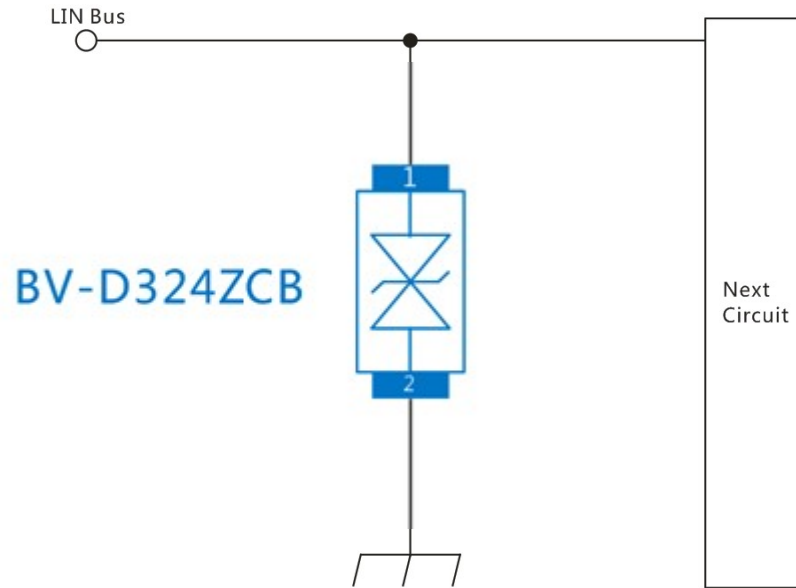


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-T305Z2CB	2.9X2.4X1.0mm	10uA@5V	6V@1mA	18V@17A	≤200pF





ISO10605: 2010
 Contact: 25KV
 Air: 25KV

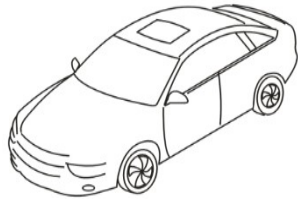


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV-D324ZCB	2.5X1.28X1.0mm	1uA@24V	26.7V@1mA	50V@5.5A	≤50pF

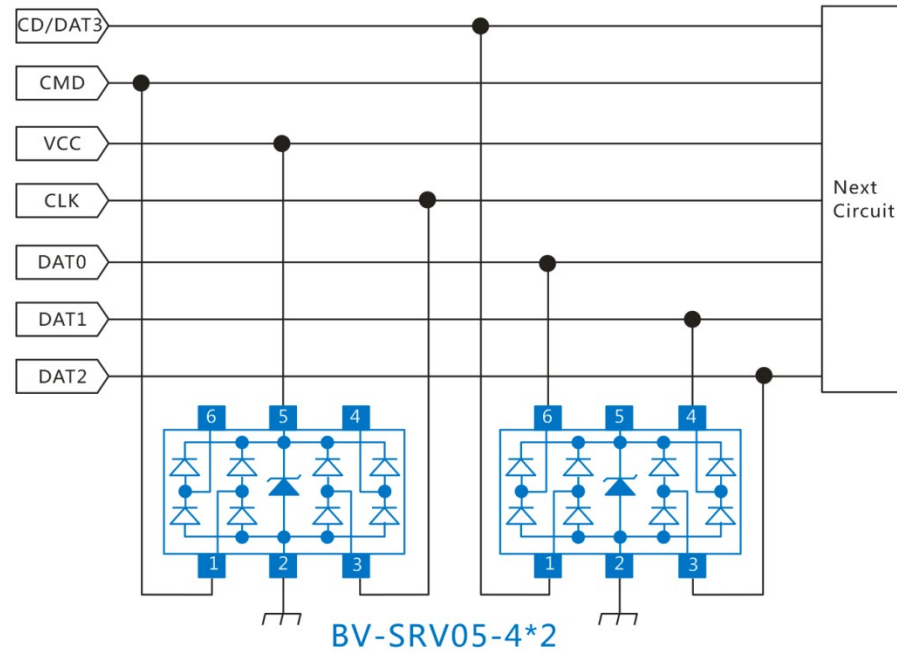


Micro SD card

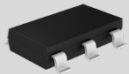
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ISO10605: 2010
 Contact: 12KV
 Air: 18KV

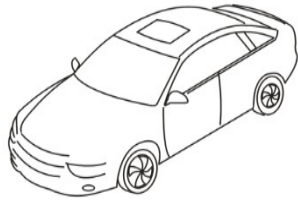


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV-SRV05-4	2.9x2.8x1.1mm	0.5uA@5V	6V@1mA	15V@5A	≤1.8pF

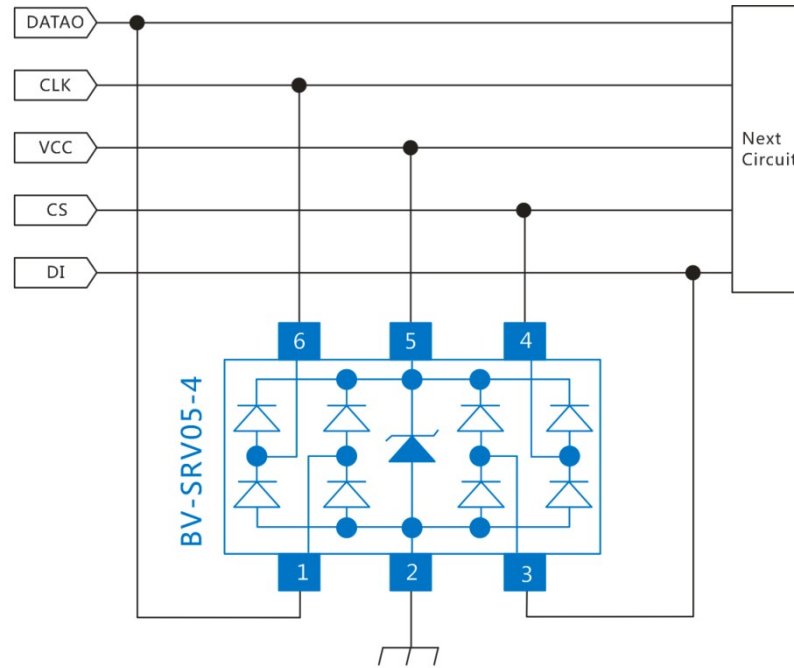


SIM Card

浪拓电子——领先的电路保护元件&防护解决方案提供



ISO10605: 2010
 Contact: 12KV
 Air: 18KV

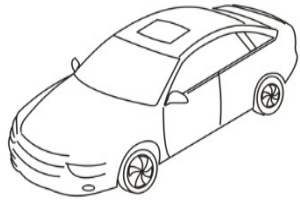


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV-SRV05-4	2.9x2.8x1.1mm	0.5uA@5V	6V@1mA	15V@5A	≤1.8pF

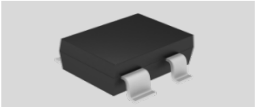
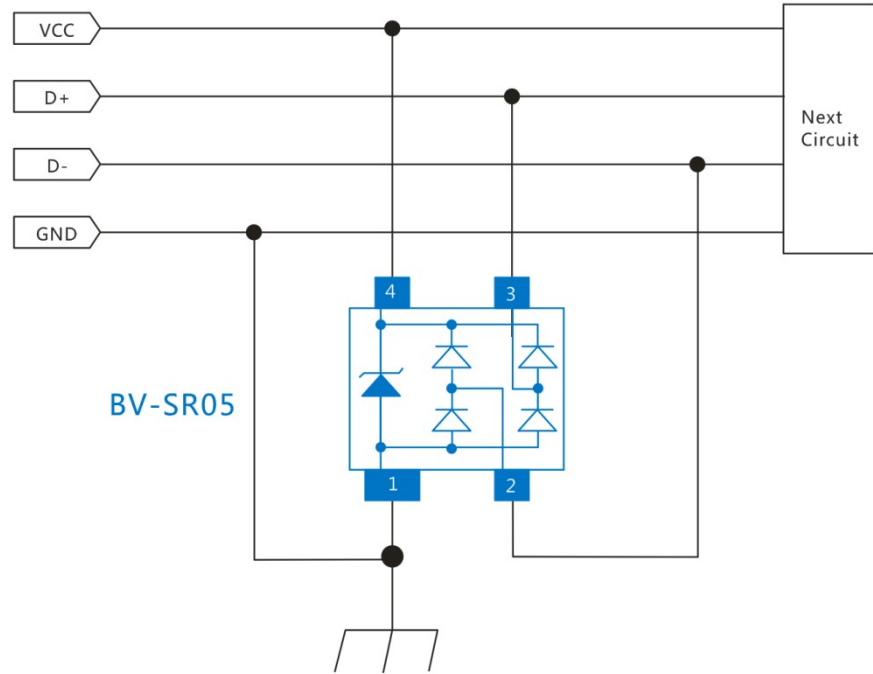


USB2.0

浪拓电子——领先的电路保护元件&防护解决方案提供



ISO10605: 2010
 Contact: 25KV
 Air: 25KV

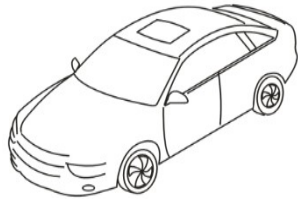


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV-SRV05	2.9x2.4x1.0mm	1uA@5V	6V@1mA	25V@5A	≤1.2pF

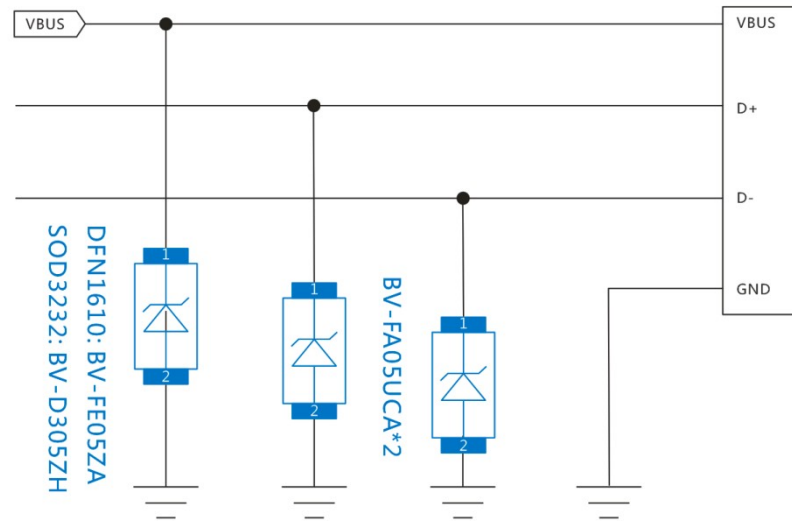


USB2.0

浪拓电子——领先的电路保护元件&防护解决方案提供



ISO10605: 2010
Contact: 18KV
Air: 22KV

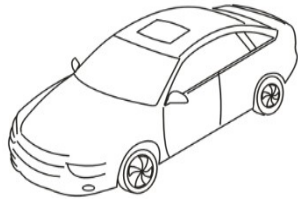


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-FE05ZA	1.6x1.0x0.5mm	1uA@5V	6V@1mA	13V@140A	≤2000pF
	Part No.	Size L*W*H(mm)	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance(1MHz)
	BV-FA05UCA	1.0x0.6x0.5mm	1uA@5V	6V@1mA	24V@4A	Typ=0.25pF

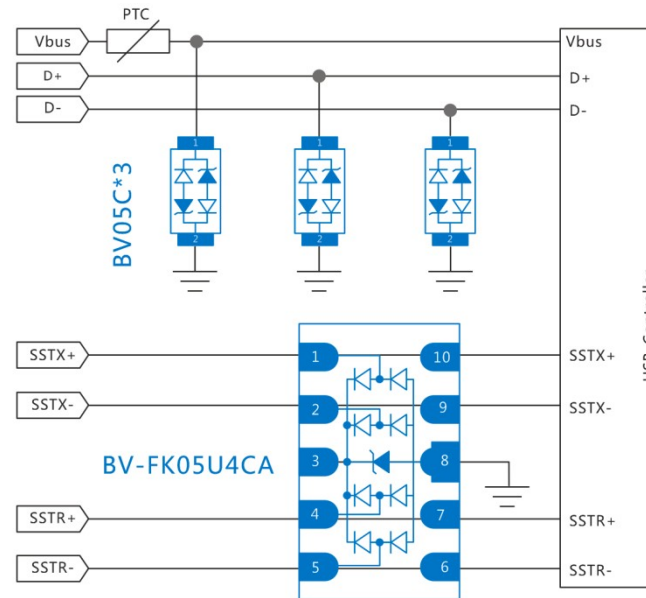


USB3.0

浪拓电子——领先的电路保护元件&防护解决方案提供



IEC61000-4-2
Contact: 15KV
Air: 15KV

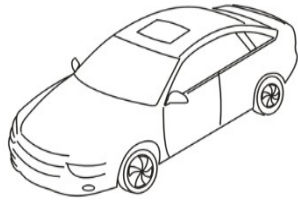


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-FK05U4CA	2.5x1.0x0.5mm	0.5uA@5V	6V@1mA	13V@3A	Typ=0.35pF
	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV05C	2.5x1.28x1.0mm	5uA@5V	6V@1mA	18.3V@8A	≤1.5pF

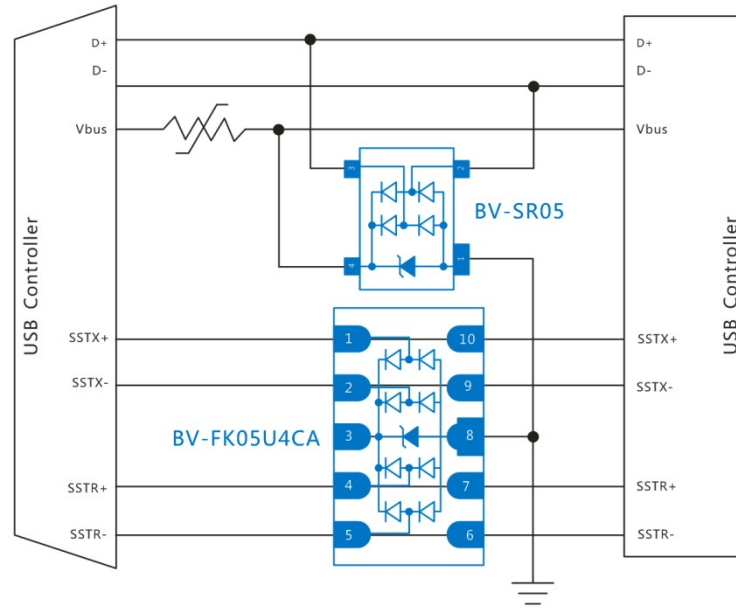


USB3.0

浪拓电子——领先的电路保护元件&防护解决方案提供



IEC61000-4-2
Contact: 15KV
Air: 15KV

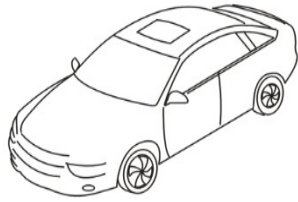


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-FK05U4CA	2.5x1.0x0.5mm	0.5uA@5V	6V@1mA	13V@3A	Typ=0.35pF
	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-SR05	2.9x2.4x1.0mm	1uA@5V	6V@1mA	25V@5A	≤1.2pF

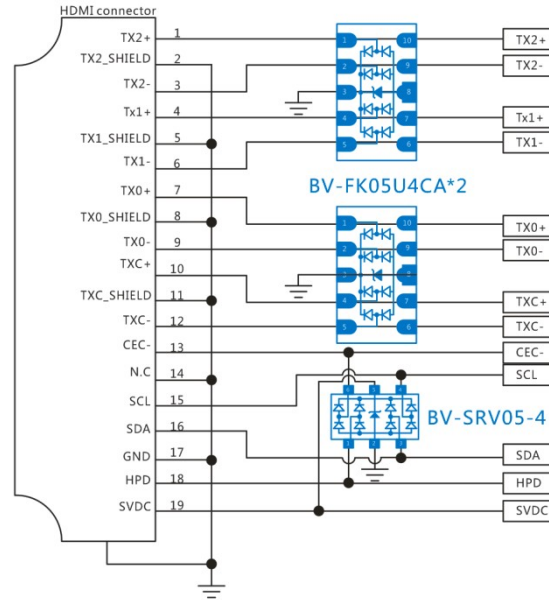


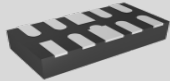
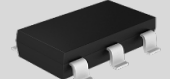
HDMI

浪拓电子——领先的电路保护元件&防护解决方案提供者



IEC61000-4-2
Contact: 15KV
Air: 15KV

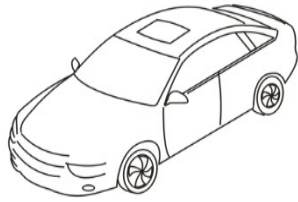


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-FK05U4CA	2.5x1.0x0.5mm	0.5uA@5V	6V@1mA	13V@3A	Typ=0.35pF
	BV-SRV05-4	2.9x2.8x1.1mm	0.5uA@5V	6V@1mA	15V@5A	≤1.8pF

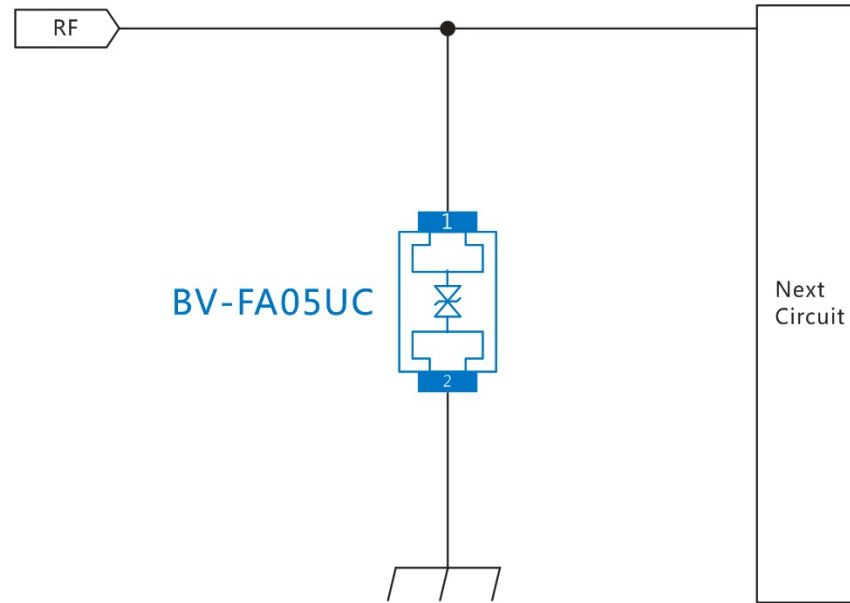


RF (WiFi/Bluetooth/FM)

浪拓电子——领先的电路保护元件&防护解决方案提供



IEC61000-4-2
Contact: 30KV
Air: 30KV

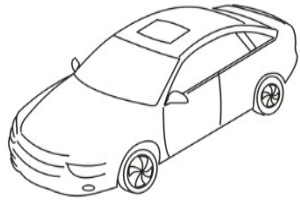


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV-FA05UC	1.0x0.6x0.5mm	1uA@5V	6V@1mA	14V@2A	Typ=0.35pF

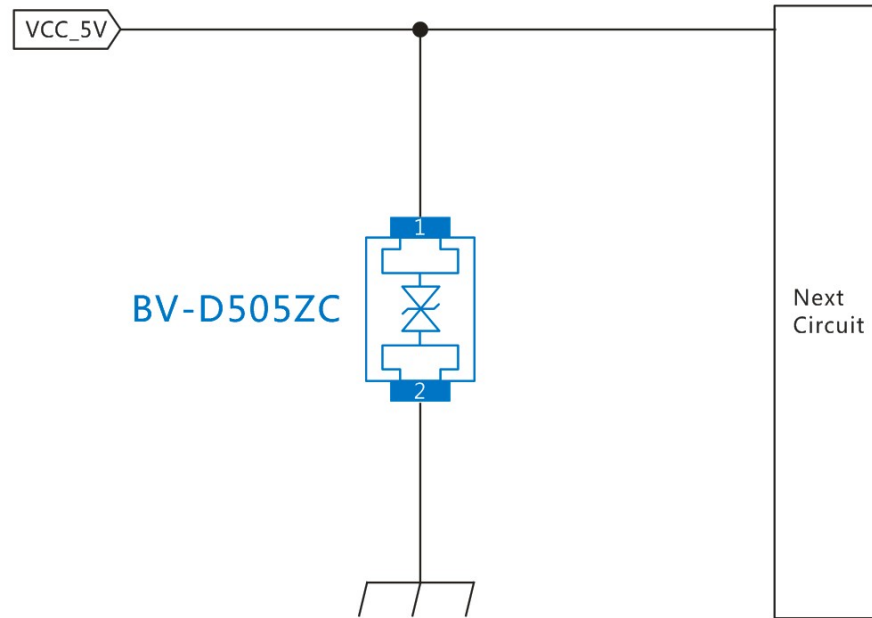


DC5V

浪拓电子——领先的电路保护元件&防护解决方案提供



IEC61000-4-2
Contact: 30KV
Air: 30KV

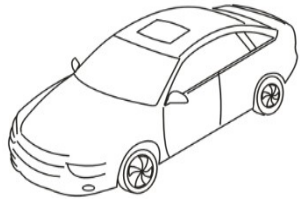


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-D505ZC	1.6x0.8x0.6mm	1uA@5V	5.6V@1mA	19V@8A	≤15pF

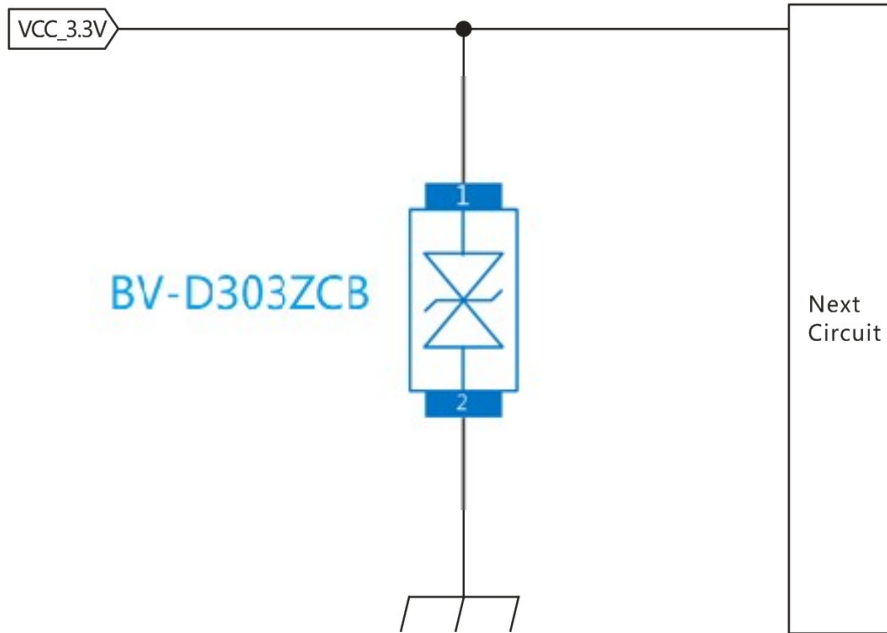


DC3.3V

浪拓电子——领先的电路保护元件&防护解决方案提供者



IEC61000-4-2
Contact: 25KV
Air: 25KV

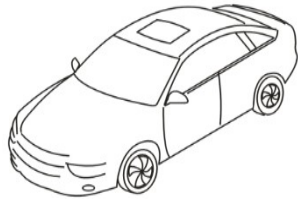


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-D303ZCB	2.5x1.28x1.0mm	40uA@3.3V	4V@1mA	15V@20A	≤450pF

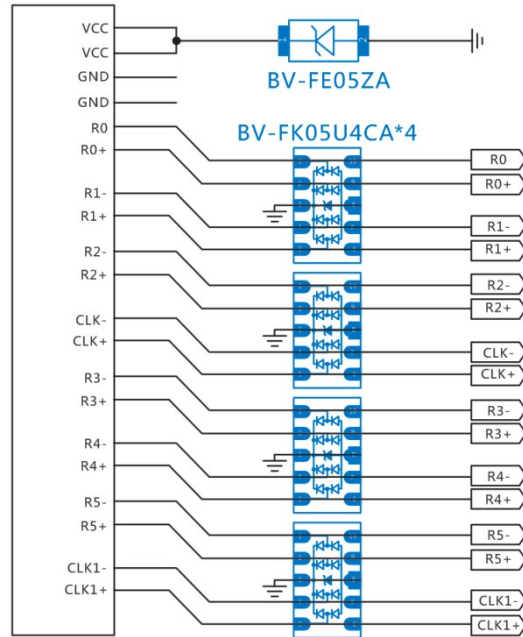


LVDS/TTL

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IEC61000-4-2
Contact: 15KV
Air: 15KV

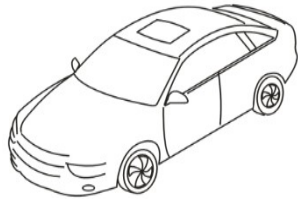


	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-FK05U4CA	2.5x1.0x0.5mm	0.5uA@5V	6V@1mA	13V@3A	Typ=0.35pF
	Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
	BV-FE05ZA	1.6x1.0x0.5mm	1uA@5V	6V@1mA	13V@140A	≤2000pF

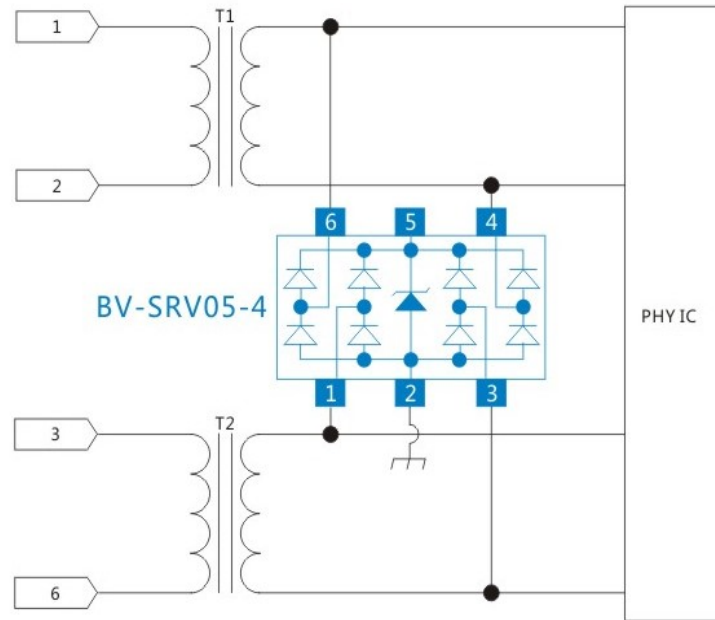


10/100M Ethernet

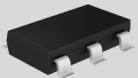
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ISO10605: 2010
 Contact: 12KV
 Air: 18KV

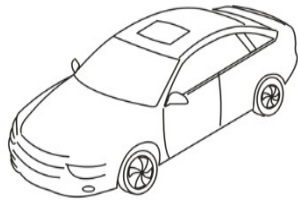


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV-SRV05-4	2.9x2.8x1.1mm	0.5uA@5V	6V@1mA	15V@5A	≤1.8pF

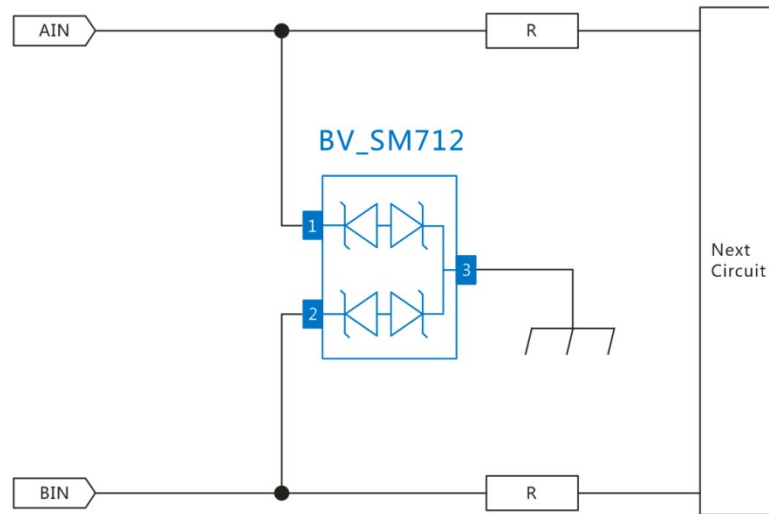


RS485

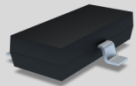
浪拓电子——领先的电路保护元件&防护解决方案提供



ISO10605: 2010
 Contact: 12KV
 Air: 18KV

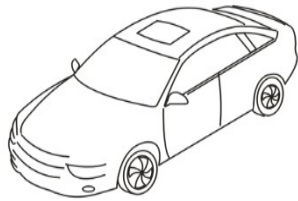


Part No.	Size L*W*H	IDRM@ VDRM	VBR@ IR	Vc@Ipp	Capacitance @1MHz
BV_SM712	2.9X2.4X1.0mm	7V/12V	7.5V/13.3V	22V/26V	≤55pF

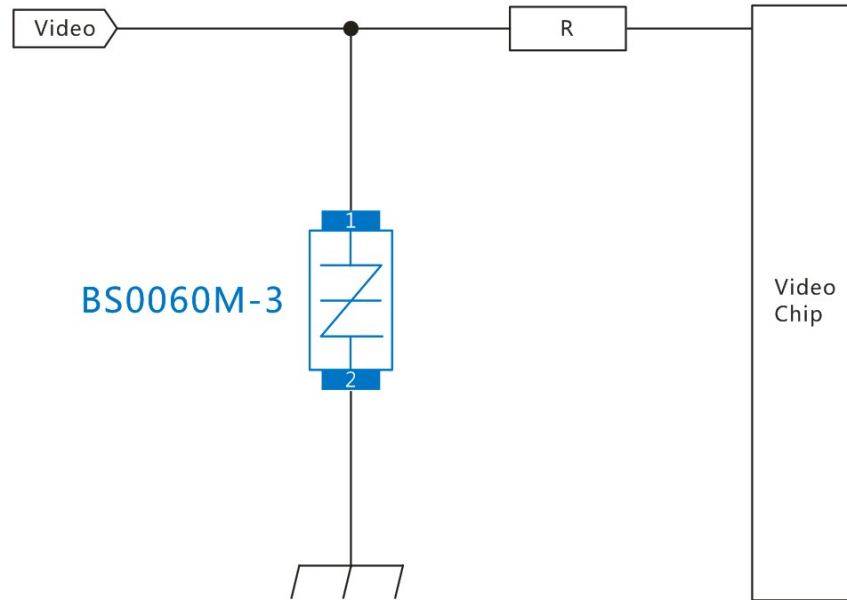


CVBS

浪拓电子——领先的电路保护元件&防护解决方案提供

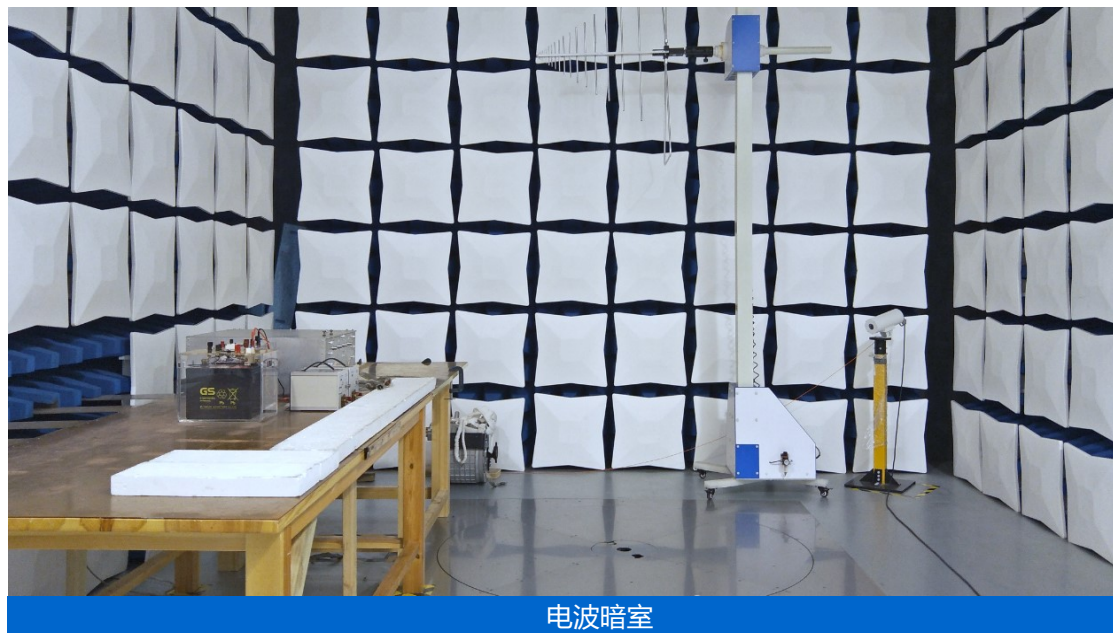


ISO10605: 2010
 Contact: 12KV
 Air: 18KV



Part No.	Size L*W*H	I _{DRM} @V _{DRM}	V _S @I _S	I _H	Capacitance
BS0060M-3	5.0X2.5X2.0mm	5μA@6V	25V@800mA	10mA (Min)	100pF





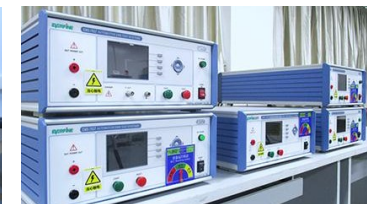
电波暗室



传导室



BCI



汽车电子测试仪



深圳市浪拓电子有限公司

- 瞬态抑制二极管
- 半导体放电管
- 陶瓷气体放电管
- 压敏电阻
- 玻璃放电管



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