



PRODUCT CATALOG

Array ESD

2025

Preface



ESD / EOS

隨著電子產品的發展需求，微型電子器件的集成度越來越高，其功能也越來越複雜，且本身對靜電的耐受程度更脆弱。

為了在有限的空間保證電子產品能正常運作，往往設計者會為了節省空間而簡化EMC相關設計，這不僅影響產品本身抗干擾功能，讓產品更容易受外部靜電干擾的風險。

在上述提及的狀況，如何在有限的空間解決ESD(IEC 61000-4-2)、EFT開關突波(IEC61000-4-4)、雷擊浪湧(IEC 61000-4-5)及汽車附載突降突波ISO7637-2等狀況，將是重點目標。

典琦科技提出多通道ESD保護元件可以同時保護多條信號線，這對於現代電子設備中常見的多通道介面（如USB、HDMI、以太網等）非常重要；使用單個多通道ESD保護元件可以簡化PCB佈局，減少設計複雜性和潛在的佈線錯誤。

Contents

Perface

4	Package Technology
5	Package Outlines
7	Bi-Directional VS Uni-Directional ESD

Multi-Channel ESD Protection

9	2 Channel Circuit Protection
15	4 Channel Circuit Protection
18	5 Channel Circuit Protection

Power ESD Protection

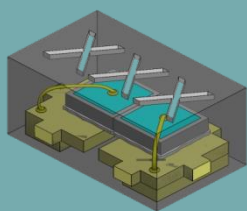
20	Difference between TVS and ESD
21	1 Channel Circuit Protection

ESD Prodection Diode for Signal

22	Low Capacitance (0.5 – 1 pf)
25	Ultra Low Capacitance (< 0.5 pf)
28	Low Work Voltage (VRWM < 2.5 V)

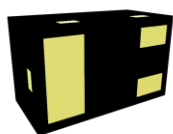
Automotive ESD Protection

30	SOT-883 / SOT-523 / SOT-23
----	----------------------------



典琦科技開發的DFN封裝產品主要分為兩種不同封裝形式，包含更小的尺寸及更易於電路板布線的設計。

Leadless ultra small package

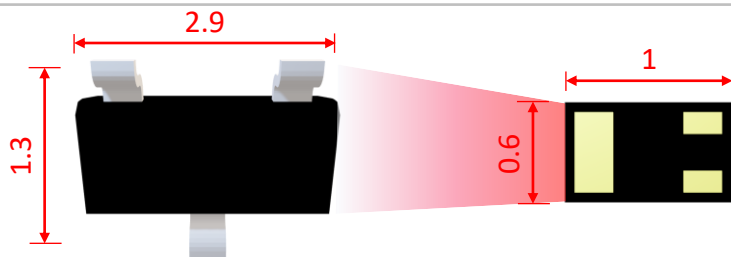


料號：
CPD**Q03C**XX-HF

Gold-plate



- 不會產生錫鬚。
- 不會因為金屬表面氧化而拒焊。

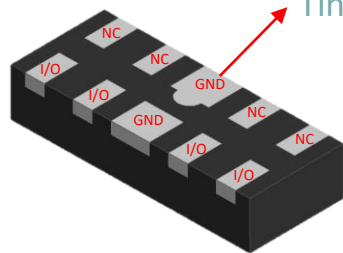


SOT-23

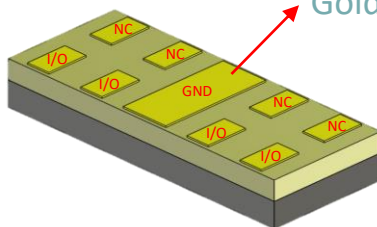
0402-03C / SOT-883

- 面積減少84%。
- 不會因為金屬表面氧化而拒焊。

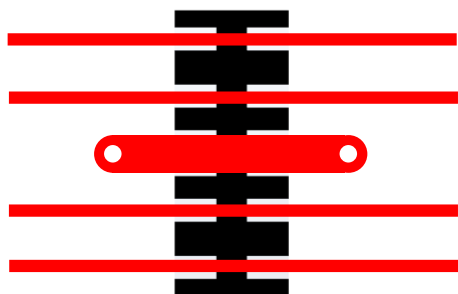
Easy to Layout



Tin-plate



Gold-plate



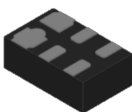
- 可實現直通式的佈線。
- 4通道設計

DFN1006-3L/0402-3C



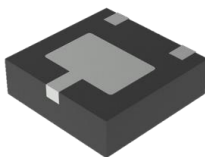
L : 1.00
W : 0.60
H : 0.50

DFN1610-6L



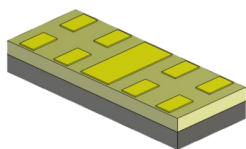
L : 1.60
W : 1.00
H : 0.50

DFN2020-3L



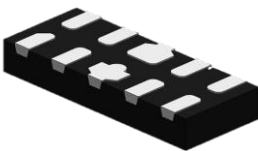
L : 2.00
W : 2.00
H : 0.575

DFN2510-10P



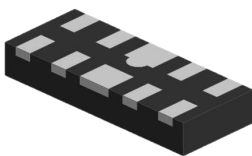
L : 2.50
W : 1.00
H : 0.50

DFN2510-10L



L : 2.50
W : 1.00
H : 0.50

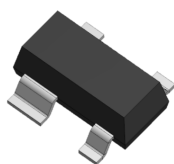
DFN2510-10



L : 2.50
W : 1.00
H : 0.50

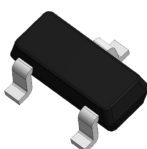
Unit : mm

SOT-143



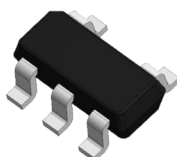
L : 2.90
W : 2.40
H : 0.975

SOT-23



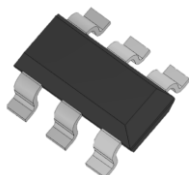
L : 2.92
W : 2.37
H : 1.0

SOT-23-5



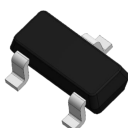
L : 2.92
W : 2.80
H : 1.10

SOT-23-6



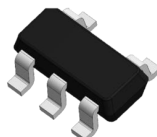
L : 2.92
W : 2.80
H : 1.125

SOT-323



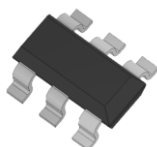
L : 2.10
W : 2.30
H : 0.95

SOT-353



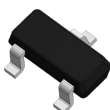
L : 2.10
W : 2.30
H : 0.95

SOT-363



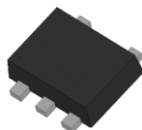
L : 2.1
W : 1.25
H : 0.95

SOT-523



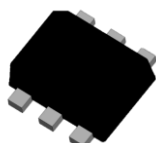
L : 1.60
W : 1.60
H : 0.7

SOT-553



L : 1.60
W : 1.60
H : 0.565

SOT-563



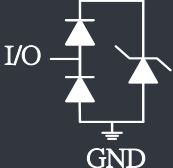
L : 1.60
W : 1.20
H : 0.55

SOT-723



L : 1.20
W : 1.20
H : 0.465

Unit : mm

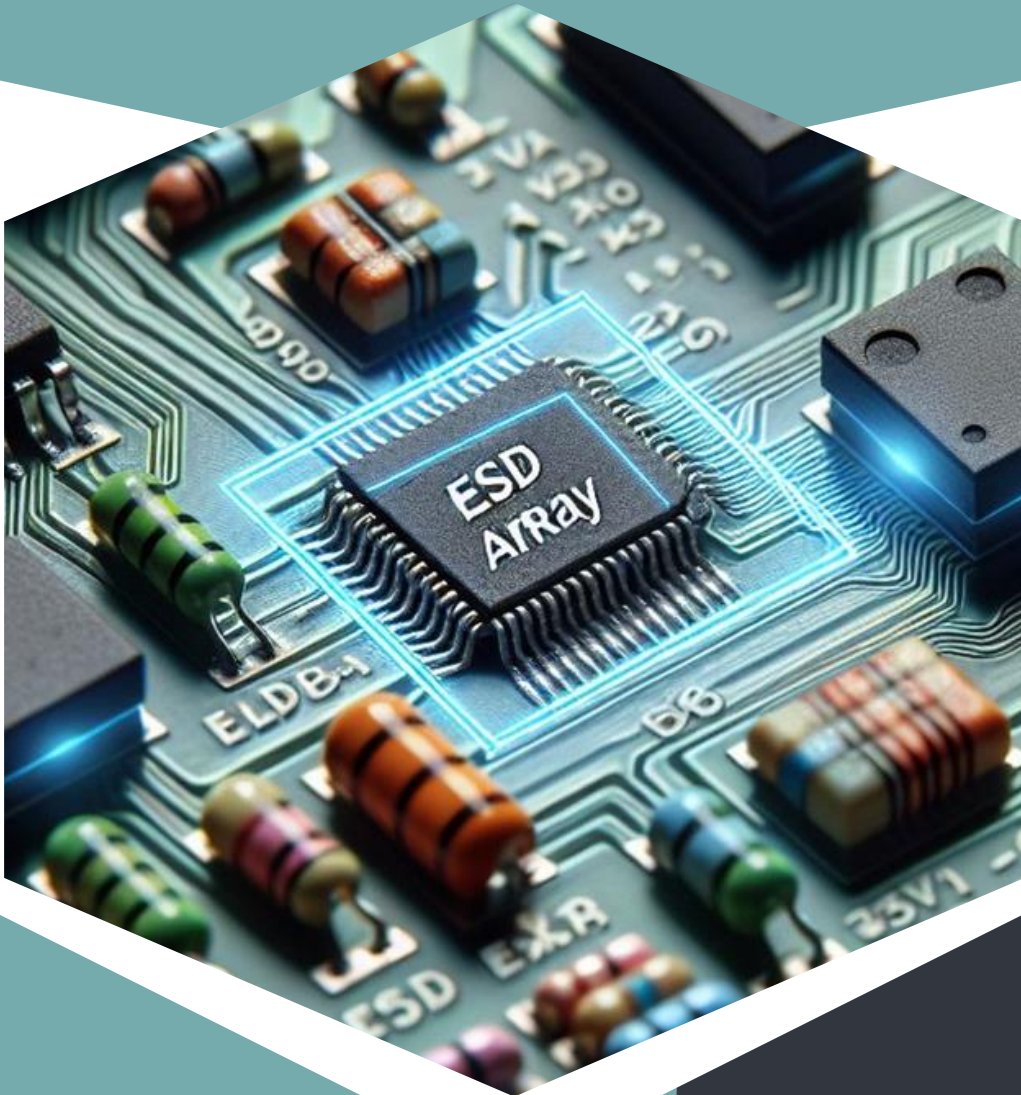
Comchip P/N	單向 	雙向 
定義	有反向崩潰電壓，有負壓時立刻導通	具有正反崩潰電壓
應用介面	可用於正向電壓範圍正向電壓端口如Vbus...等	可用於正負電壓範圍
優勢	應用於負電壓時，箝位電壓遠低於雙向ESD器件	便於正負電壓端口靈活使用

Considerations

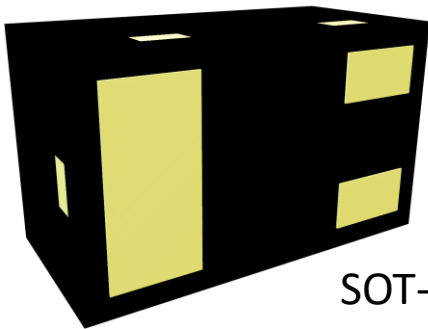
- 單向TVS不適用於操作電壓同時存在正電壓及負電壓的訊號線，但於負電壓突波保護更優於雙向TVS，故多數DC電源及單向訊號時單向TVS更適用。

Multi-Channel ESD Protection

2 Channel
4 Channel
5 Channel



2 Channel Circuit Protection



SOT-883 / 0402C-03

Power Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDQ03C3V3HT-HF	3.3	15	10	30 / 30	36	Bi	0402C-03

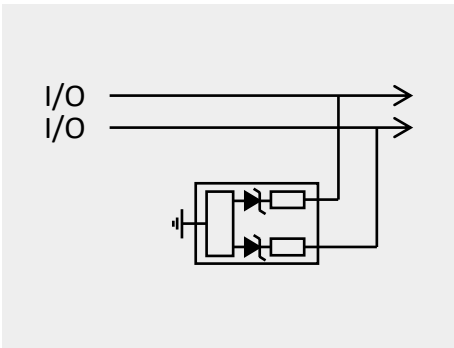
Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDQ03C5V0USP-HF	5	3	16	10 / 15	0.45	Uni	0402C-03
CPDQ03C5V0AU-HF	5	4	15	18 / 18	0.45	Uni	0402C-03

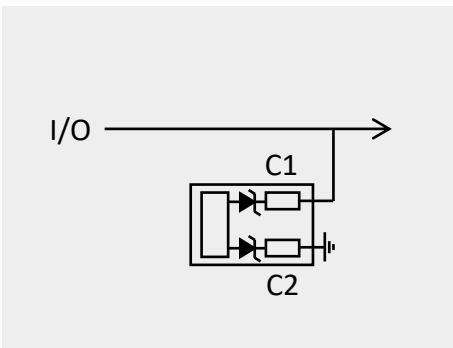
Power / Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDQ03C3V3U-HF	3.3	5	11	20 / 20	6	Uni	0402C-03
CPDQ03C5V0UP-HF	5	2	15	8 / 15	8.5	Uni	0402C-03
CPDQ03C5V0HP-HF	5	3	15	30 / 30	6	Bi	0402C-03

Design Flexibility

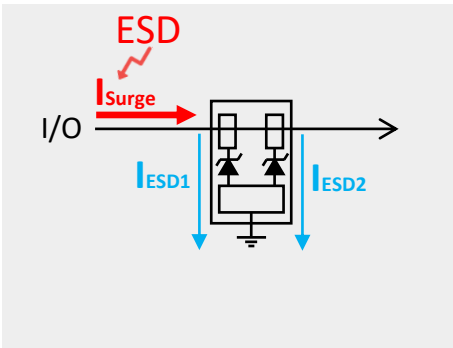


•雙通道保護。



•有效降低容值，適合在高頻應用。

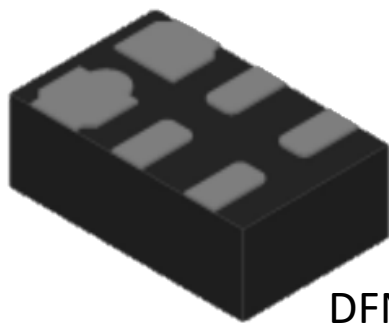
$$C_j = C1/2 = C2/2$$



•有效降低箝制電壓，易於保護元件。

$$I_{surge} = I_{ESD1} + I_{ESD2} \approx I_{ESD1}/2 \approx I_{ESD2}/2$$

2 Channel Circuit Protection

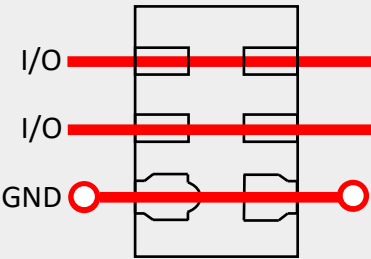


DFN1610-6L

Signal Line

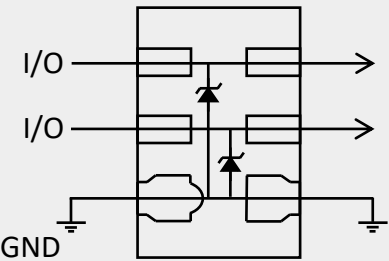
Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDU06R5V0UP-HF	5	3	12	20 / 20	0.5	Uni	DFN1610-6L

Easy to Layout



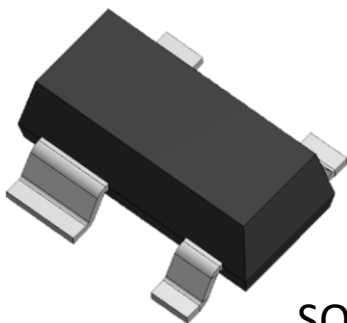
- 可實現直通式的佈線。
- 雙通道設計。
- 小尺寸封裝1.6 x 1.0 mm。

Application



- 適合介面資料傳輸速率<5Gbps。
- 適合用於單一正或負電壓訊號線。

2 Channel Circuit Protection



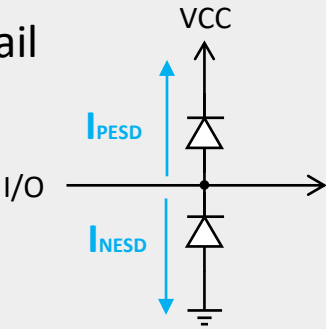
SOT-143

Power / Signal Line

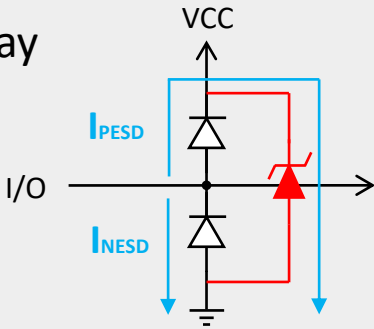
Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT4-5V0MUSBP-HF	5	5	20	20 / 20	0.8	Uni	SOT-143
CPDT4-5V0U-HF	5	25	20	30 / 30	3	Uni	SOT-143

Design Considerations

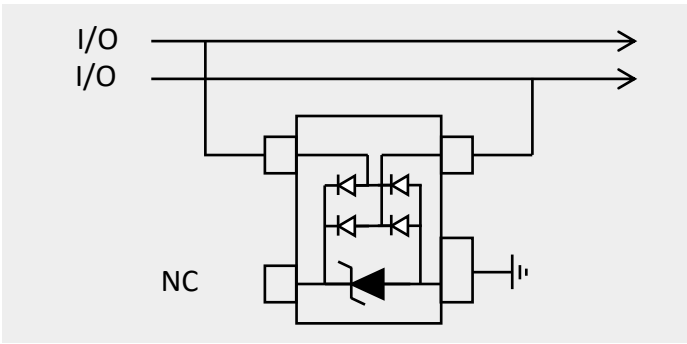
Rail to Rail



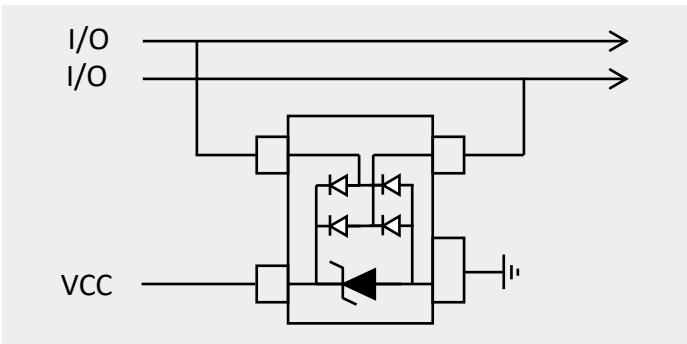
ESD Array



Application

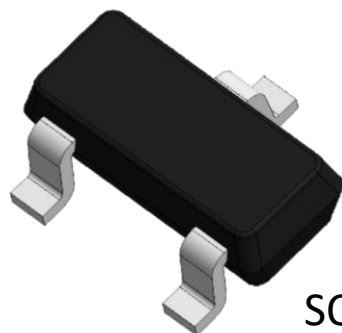


•單獨保護訊號線。



•連接Pin4，可同時保護電源線，如USB2.0(V_{BUS}、D+和D-)。

2 Channel Circuit Protection



SOT-23

3.3 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-3V3UB-HF	3.3	20	14	30 / 30	310	Uni	SOT-23
CPDT-3V3UA-HF	3.3	4	15	20 / 20	0.46	Uni	SOT-23
CPDT-3V3A-HF	3.3	4	23	20 / 20	0.22	Bi	SOT-23

5 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-5V0UB-HF	5	17	18	30 / 30	306	Uni	SOT-23
CPDT-5V0LPC-HF	5	10	15	30 / 30	1.5	Bi	SOT-23
CPDT-5V0SR	5	8	10	8 / 15	60	Rail to Rail	SOT-23
CPDT-5V0U-HF	5	8	10	8 / 15	60	Uni	SOT-23
CPDT-5V0P-HF	5	6	17	30 / 30	6.5	Bi	SOT-23
CPDT-5V0C-HF	5	5	12	8 / 16	25	Bi	SOT-23
CPDT-5V0-HF	5	5	15	8 / 16	15	Bi	SOT-23
CPDT-5V0USP-HF	5	4	19	8 / 15	0.6	Uni	SOT-23

8 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-8V0UB-HF	8	15	24	30 / 30	160	Uni	SOT-23

12 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
SM712-HF	12	13	18 / 27	30 / 30	50	Bi	SOT-23
CPDT-12VUB-HF	12	11	32	30 / 30	70	Uni	SOT-23
CPDT-12VEU-HF	12	5	22	30 / 30	60	Uni	SOT-23
CPDT-12V-HF	12	1	25	8 / 16	12	Bi	SOT-23

15 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-15VUB-HF	15	10	38	30 / 30	60	Uni	SOT-23

18 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-18VUB-HF	18	9	45	30 / 30	60	Uni	SOT-23

20 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-20VUB-HF	20	8	50	30 / 30	55	Uni	SOT-23

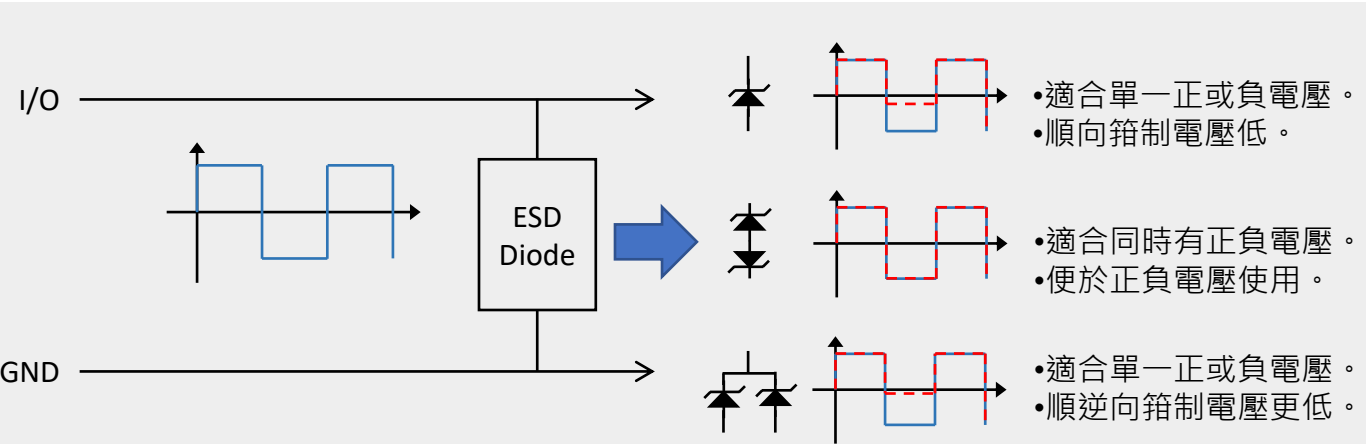
24 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-24VOUCHT-HF	24	8	39	30 / 30	45	Uni/Rev	SOT-23
CPDT-24VOUHT-HF	24	8	39	30 / 30	45	Uni	SOT-23
CPDT-24VOHT-HF	24	8	40	30 / 30	22	Bi	SOT-23
CPDT-24VUB-HF	24	7	52	30 / 30	40	Uni	SOT-23
CPDT-24VE-HF	24	3	46	30 / 30	13	Bi	SOT-23
CPDT-24V-HF	24	1	47	8 / 16	10	Bi	SOT-23
CPDT-24V0SPU-HF	24	1	40	8 / 15	0.5	Uni	SOT-23
CPDT-24V0SP-HF	24	1	42	8 / 15	0.3	Uni	SOT-23

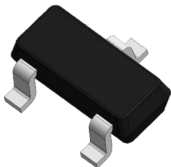
36 V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-36VUB-HF	36	5	75	30 / 30	40	Uni	SOT-23
CPDT-36VEU-HF	36	1.5	59	30 / 30	20	Uni	SOT-23

Application



2 Channel Circuit Protection



SOT-323

Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV3-3V3A-HF	3.3	4	24	20 / 20	0.25	Bi	SOT-323

Power Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV3-5V0U-HF	5	8	10	8 / 15	60	Uni	SOT-323



SOT-523

Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDH3-5V0UB-HF	5	5	25	8 / 15	0.6	Uni	SOT-523

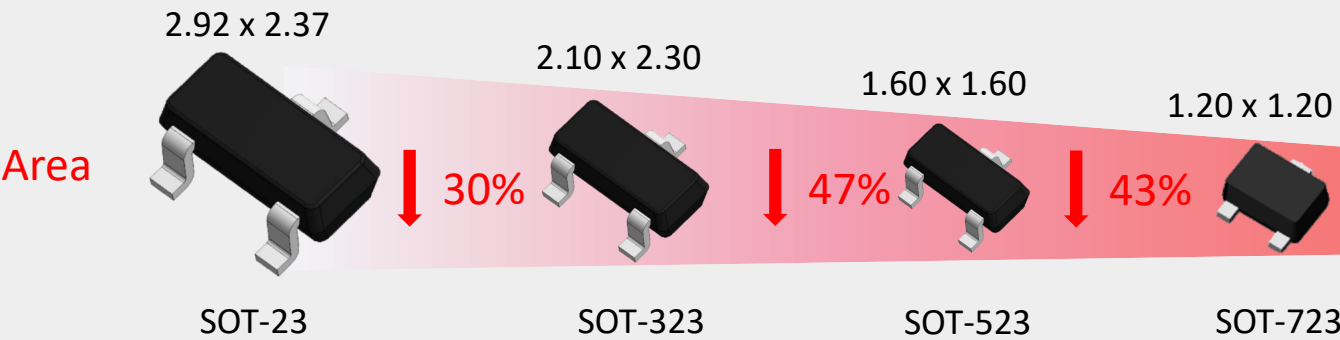


SOT-723

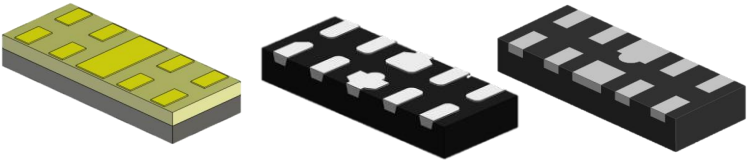
Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDR3-5V0UB-HF	5	5	18	15 / 18	0.7	Uni	SOT-723

Miniaturization



4 Channel Circuit Protection

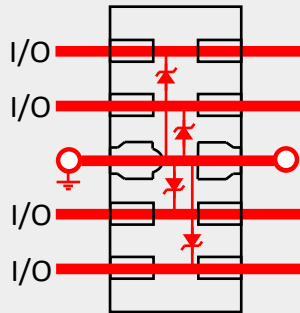


DFN2510

Signal Line

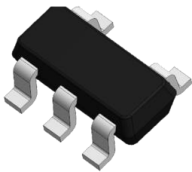
Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDA10C1V5U-HF	1.5	5	9	16 / 18	0.6	Uni	DFN2510
CPDA10C1V8U-HF	1.8	5	9	16 / 18	0.6	Uni	DFN2510
CPDA10C2V5U-HF	2.5	5	10	16 / 18	0.6	Uni	DFN2510
CPDA10R3V3U-HF	3.3	5	11	15 / 15	0.5	Uni	DFN2510
CPDVR103V3UA-HF	3.3	4	14	20 / 25	0.4	Uni	DFN2510
CPDVR103V3USBP-HF	3.3	5	4	10 / 15	0.32	Uni	DFN2510
CPDA10C5V0AU-HF	5	5	13	30 / 30	0.7	Uni	DFN2510
CPDA10R5V0SC-HF	5	3	20	14 / 15	0.25	Uni	DFN2510
CPDA10R5V0SCP-HF	5	3	19	14 / 15	0.15	Uni	DFN2510
CPDA10R5V0U-HF	5	5	18	15 / 15	0.5	Uni	DFN2510
CPDVR0524P-HF	5	4	14	20 / 25	0.45	Uni	DFN2510
CPDVR105V0UA-HF	5	3	15.5	16 / 19	0.6	Uni	DFN2510
CPDVR105V0UESP-HF	5	4	15	20 / 25	0.4	Uni	DFN2510
CPDA10C60VB-HF	60	1.8	110	22 / 24	6	Bi	DFN2510

Application



- 可實現直通式的佈線。
- 4通道設計
- 尺寸封裝2.5 x 1.0 mm

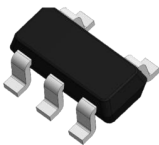
4 Channel Circuit Protection



SOT-23-5

Power Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT5-5V0U-HF	5	8	10	8 / 15	60	Uni	SOT-23-5



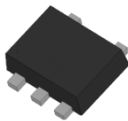
SOT-353

Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV5-3V3UP-HF	3.3	5	8	15 / 20	12	Uni	SOT-353

Power Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV5-5V0U-HF	5	8	10	8 / 15	60	Uni	SOT-353

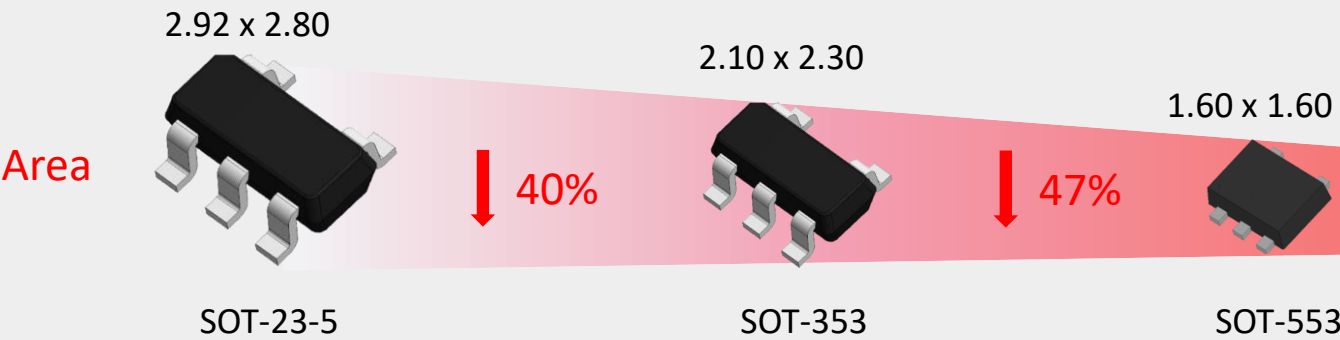


SOT-553

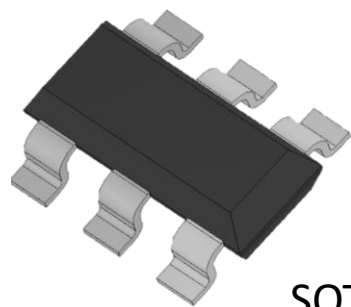
Power Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDH5-5V0U-HF	5	8	10	8 / 15	60	Uni	DFN1610-6L

Miniaturization



4 Channel Circuit Protection

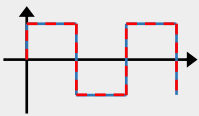
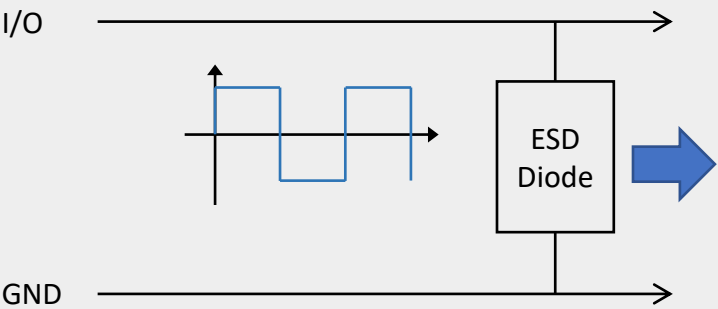


SOT-23-6

Power / Signal Line

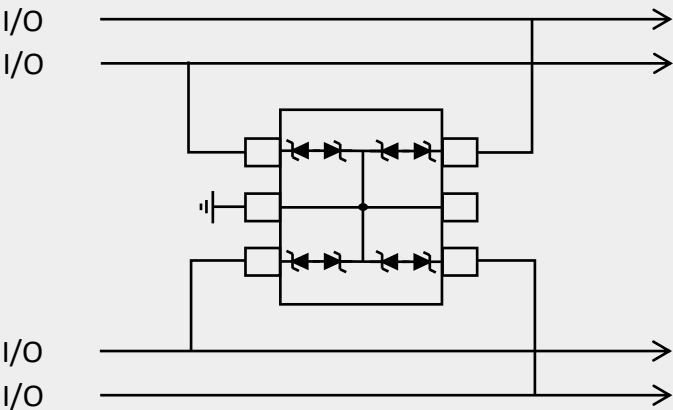
Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT6-5V4-HF	5	5	15	8 / 16	15	Bi	SOT-23-6
CPDT6-24V4-HF	24	1	47	8 / 15	10	Bi	SOT-23-6

Design Considerations



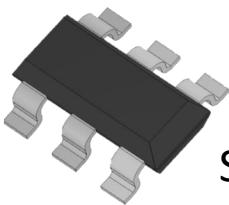
- 適合同時有正負電壓。
- 便於正負電壓使用。

Application



- 4通道設計
- 尺寸封裝2.92 x 2.80 mm

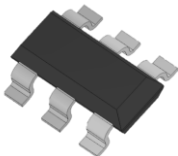
5 Channel Circuit Protection



SOT-23-6

Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT6-5V0UA-HF	5	8	15	20 / 25	0.45	Uni	SOT-23-6
CPDT6-5V0UPC-HF	5	10	12.5	30 / 30	2.2	Uni	SOT-23-6
CPDT6-5V0USP-HF	5	5	25	25 / 25	0.8	Uni	SOT-23-6



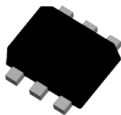
SOT-363

Signal Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV6-5V0UP-HF	5	5	13	15 / 20	0.6	Uni	SOT-363

Power Line

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV6-5V0U-HF	5	8	10	8 / 15	60	Uni	SOT-363

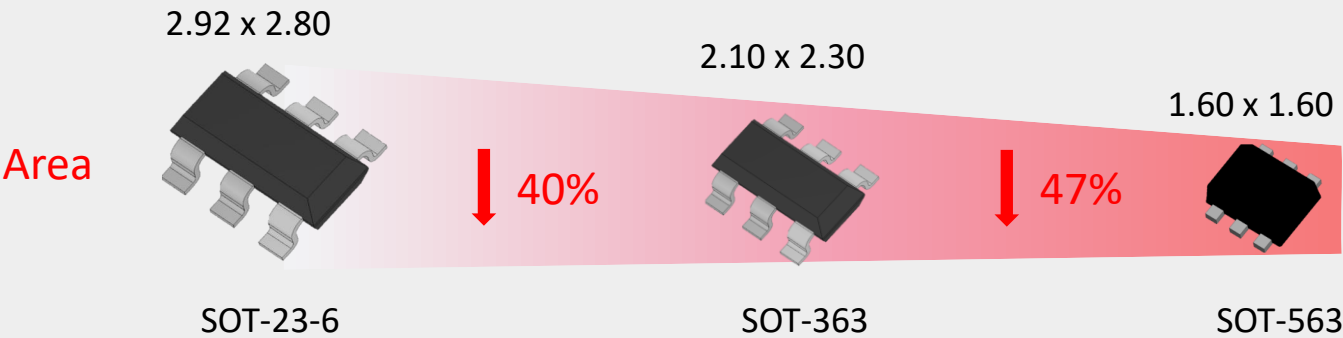


SOT-563

Power Line

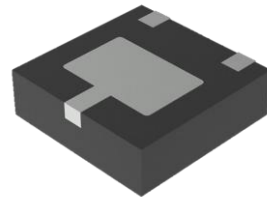
Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDH6-5V0U-HF	5	8	10	8 / 15	60	Uni	SOT-563

Miniaturization

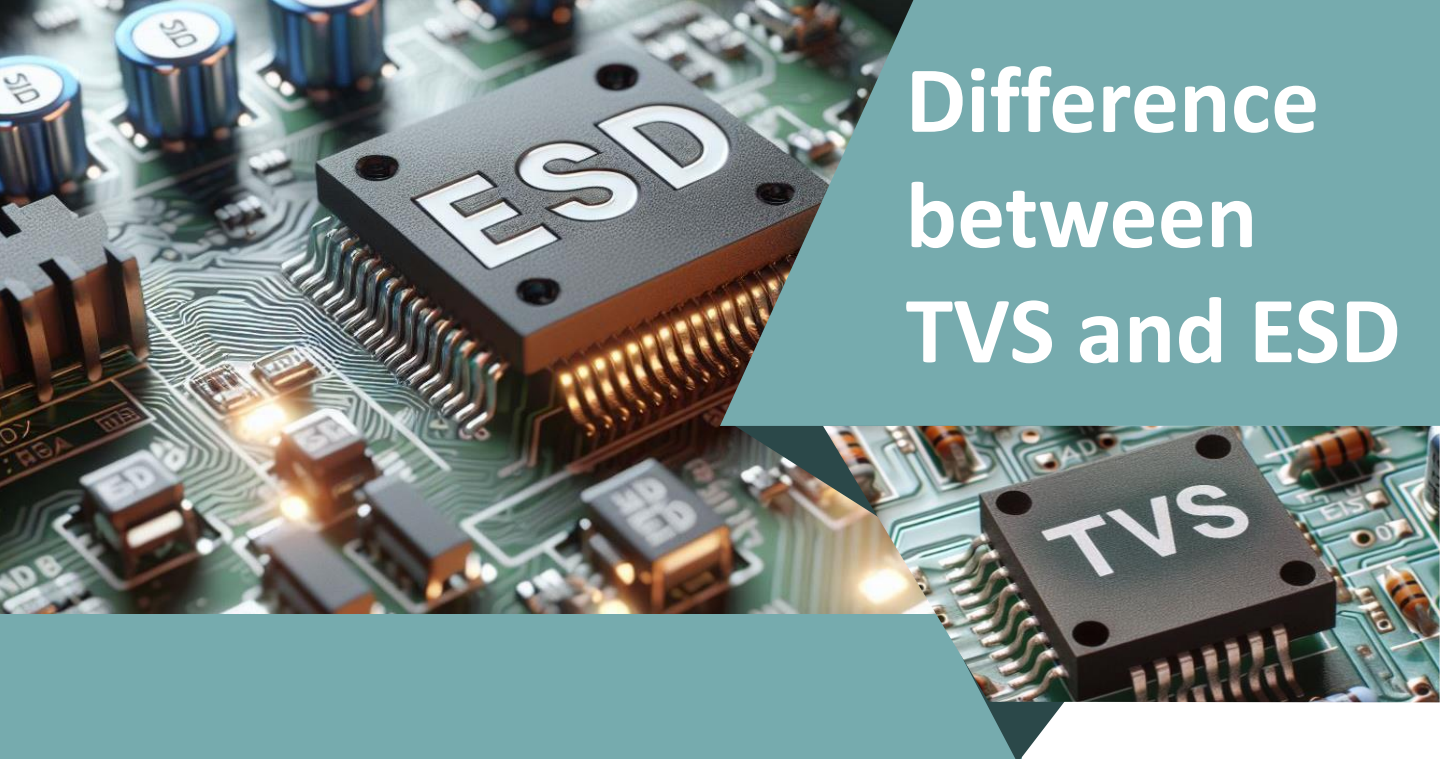


High Surge

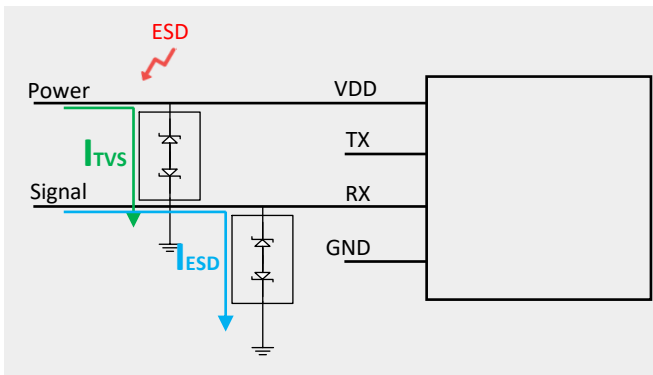
Power ESD Protection



Difference between TVS and ESD



Characteristic



ESD

主要功能：防止靜電放電對電子設備的損害。

應用場景：主要用於保護高速信號線，如HDMI、USB等接口。

特點：具有快速響應時間，能夠迅速將靜電釋放到地。

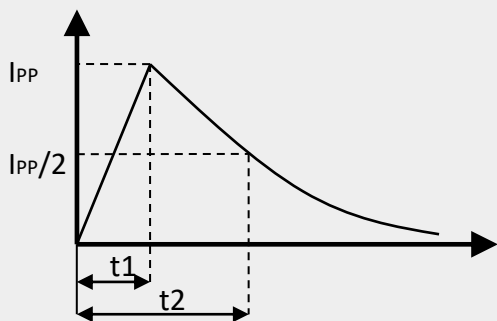
TVS

主要功能：抑制瞬態過電壓，保護電子設備免受電源浪湧的影響。

應用場景：常用於電源輸入端，吸收電源浪湧，保護後級電路。

特點：具有較高的功率處理能力，能夠吸收較大的瞬態電壓。

Test Waveform Comparison



	t_1	t_2
8/20 Wave(ESD)	8 us	20 us
10/1000 Wave(TVS)	10 us	1000 us

K= 係數(方波：1 三角波：0.5 指數波：1.4)

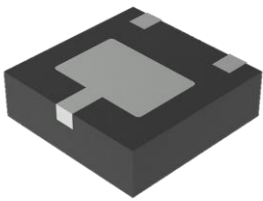
$$J_{8/20} = 0.5 * V_c * IPP * 8 * 10^{-6} + 1.4 * V_c * IPP * (20-8) * 10^{-6}$$

$$J_{10/1000} = 0.5 * V_c * IPP * 10 * 10^{-6} + 1.4 * V_c * IPP * (1000-10) * 10^{-6}$$

$$J_{8/20} \approx 5 * J_{10/1000}$$

由以上公式可以看出，10/1000的突波波型約5倍的8/20突波波型能量

1 Channel Circuit Protection



DFN2020-3L

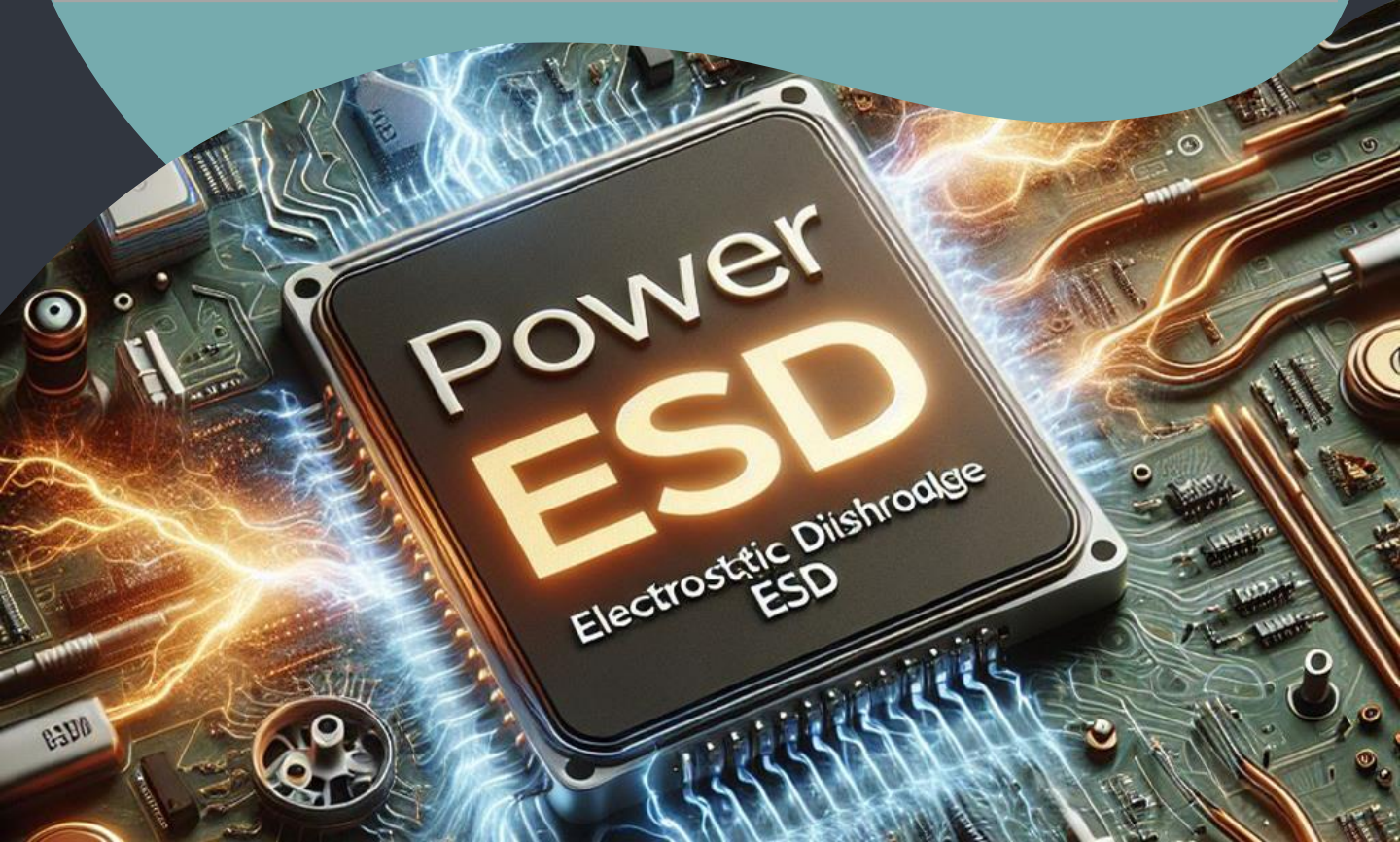
Power ESD產品，同時擁有TVS高抗雷擊和ESD抗干擾能力。

Features & Benefits

High ESD Robustness > 30KV

High Surge Current Capacity

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDA3-5V0U-HF	5	300	25	30 / 30	2500	Uni	DFN2020-3L
CPDA3-7V0U-HF	7	200	38	30 / 30	2000	Uni	DFN2020-3L
CPDA3-12VU-HF	12	190	30	30 / 30	1200	Uni	DFN2020-3L
CPDA3-15VU-HF	15	140	32	30 / 30	970	Uni	DFN2020-3L



Low Capacitance

Package : Leadless /Lead

Applicable frequency Below 5Gbps

高速傳輸端口往往受到ESD、EFT和突波威脅，Comchip提出了相對應的保護解決方案，須符合接面電容夠低，同時不影響訊號傳遞的完整性，藉此保護最敏感的線路如USB3.X等Super-Speed訊號線路。

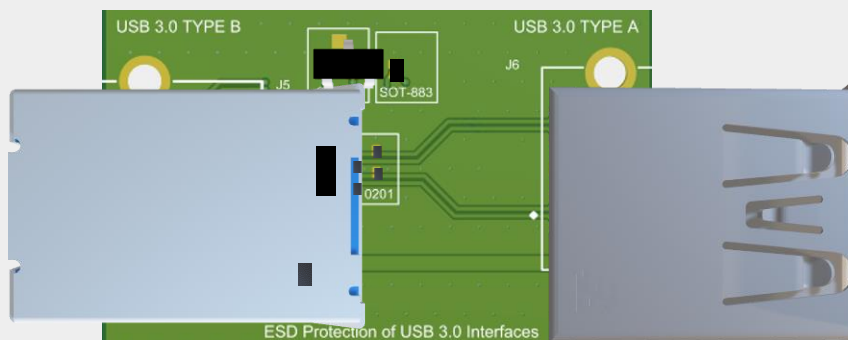
Super-Speed Protection Array Diode

USB 3.0 is now called USB 3.1 Gen 1 (Speed Up to 5Gbps)

Capacitance range from 0.5 to 1 pF

**Miniaturization
ESD Robust Designs**

Contact Us Now



Low Capacitance

Leadless Package

0.5 – 1 pf

適合介面資料傳輸速率<5Gbps。

Package Size [DFN1610-6L](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDU06R5V0UP-HF	5	3	12	20 / 20	0.5	Uni	DFN1610-6L

Package Size [DFN2510](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDA10C1V5U-HF	1.5	5	9	16 / 18	0.6	Uni	DFN2510
CPDA10C1V8U-HF	1.8	5	9	16 / 18	0.6	Uni	DFN2510
CPDA10C2V5U-HF	2.5	5	10	16 / 18	0.6	Uni	DFN2510
CPDA10R3V3U-HF	3.3	5	11	15 / 15	0.5	Uni	DFN2510
CPDA10C5V0AU-HF	5	5	13	30 / 30	0.7	Uni	DFN2510
CPDA10R5V0U-HF	5	5	18	15 / 15	0.5	Uni	DFN2510
CPDVR105V0UA-HF	5	3	15.5	16 / 19	0.6	Uni	DFN2510

Low Capacitance

Lead Package

0.5 – 1 pf

適合介面資料傳輸速率<5Gbps。

Package Size [SOT-723](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDR3-5V0UB-HF	5	5	18	15 / 18	0.7	Uni	SOT-723

Package Size [SOT-523](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDH3-5V0UB-HF	5	5	25	8 / 15	0.6	Uni	SOT-523

Package Size [SOT-363](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV6-5V0UP-HF	5	5	13	15 / 20	0.6	Uni	SOT-363

Package Size [SOT-26-6](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT6-5V0USP-HF	5	5	25	25 / 25	0.8	Uni	SOT-23-6

Ultra Low Capacitance

Package : Package : Leadless /Lead

Applicable frequency
Up to 20Gbps



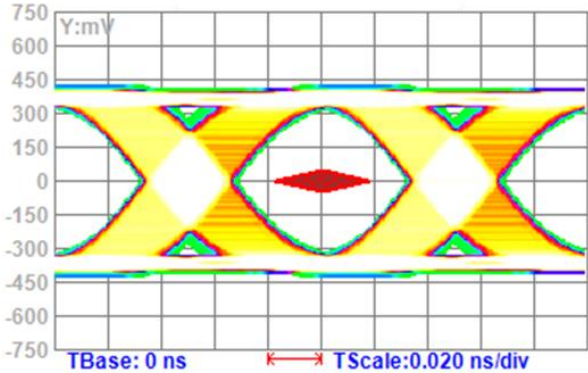
COMCHIP



PROTECTION DIODE

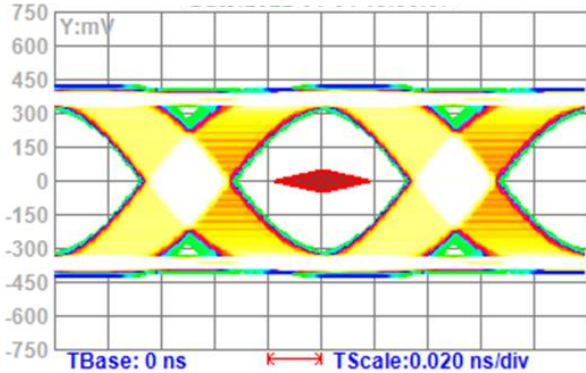
LOW INSERTION LOSS

HDMI2.1 Eye (8K, 7680X4320)-D0-PASS



Data Rate: 10 Gbps	Voltage Swing: 400 mV
Risetime: 30 ps,(20~80%)	EyePattern: PRBS9
Jitter: 0.3 UI	EQ: None

HDMI2.1 Eye (8K, 7680X4320)-D1-PASS



Data Rate: 10 Gbps	Voltage Swing: 400 mV
Risetime: 30 ps,(20~80%)	EyePattern: PRBS9
Jitter: 0.3 UI	EQ: None

www.comchiptech.com ←

Ultra Low Capacitance

Leadless Package

< 0.5 pf

適合介面資料傳輸速率<20Gbps。

Package Size 0402C-03 / SOT-883

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDQ03C5V0USP-HF	5	3	16	10 / 15	0.45	Uni	0402C-03
CPDQ03C5V0AU-HF	5	4	15	18 / 18	0.45	Uni	0402C-03

Package Size DFN2510

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDA10R5V0SCP-HF	5	3	19	14 / 15	0.15	Uni	DFN2510
CPDA10R5V0SC-HF	5	3	20	14 / 15	0.25	Uni	DFN2510
CPDVR103V3USBP-HF	3.3	5	4	10 / 15	0.32	Uni	DFN2510
CPDVR103V3UA-HF	3.3	4	14	20 / 25	0.4	Uni	DFN2510
CPDVR105V0UESP-HF	5	4	15	20 / 25	0.4	Uni	DFN2510

Ultra Low Capacitance

Lead Package

< 0.5 pf

適合介面資料傳輸速率<20Gbps。

Package Size [SOT-323](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDV3-3V3A-HF	3.3	4	24	20 / 20	0.25	Bi	SOT-323

Package Size [SOT-23](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT-3V3A-HF	3.3	4	23	20 / 20	0.22	Bi	SOT-23
CPDT-3V3UA-HF	3.3	4	15	20 / 20	0.46	Uni	SOT-23
CPDT-24VOSP-HF	24	1	42	8 / 15	0.3	Uni	SOT-23

Package Size [SOT-23-6](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDT6-5V0UA-HF	5	8	15	20 / 25	0.45	Uni	SOT-23-6

PACKAGE

COMCHIP

DFN2510

Low-Voltage Protection Diode

專為低電壓元件設計的靜電防護元件

提供真正低工作電壓靜電防護
響應時間更短
箝位電壓更低

$VRWM \leq 2.5\text{ V}$



Low Work Voltage

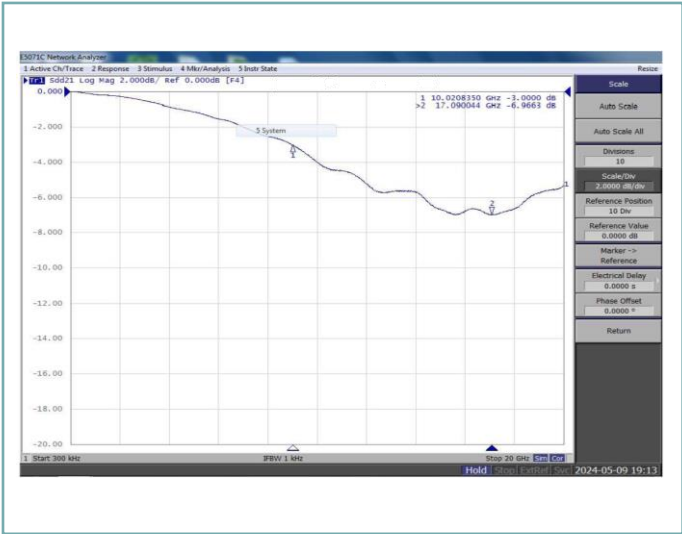
VRWM : 1.8 – 2.5 V

COMCHIP

1.8V

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
CPDA10C1V5U-HF	1.5	5	9	16 / 18	0.6	Uni	DFN2510
CPDA10C1V8U-HF	1.8	5	9	16 / 18	0.6	Uni	DFN2510
CPDA10C2V5U-HF	2.5	5	10	16 / 18	0.6	Uni	DFN2510

Insertion Loss測試數值



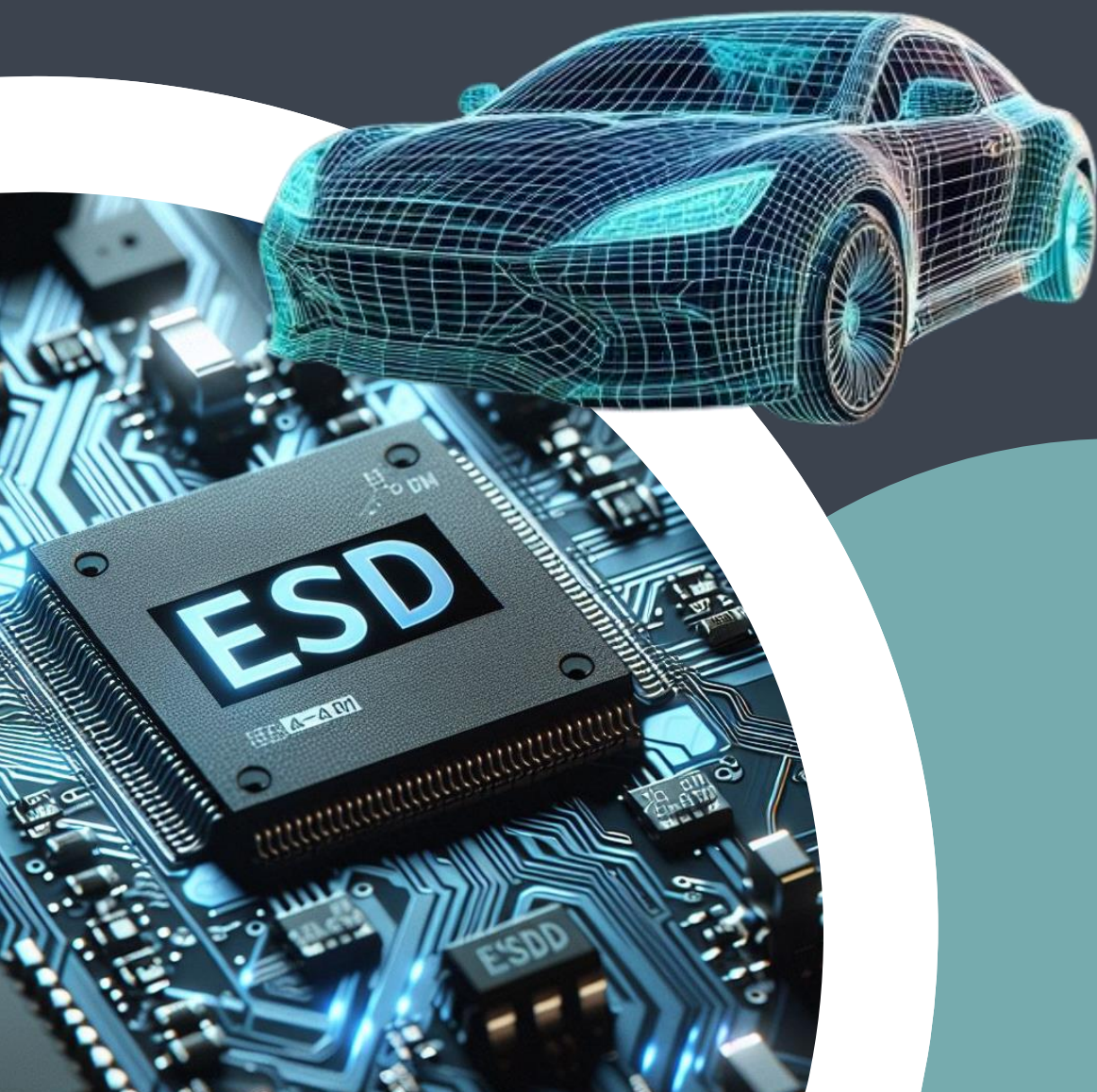
CPDA10C1V5U-HF
CPDA10C1V8U-HF
CPDA10C2V5U-HF的衰減：

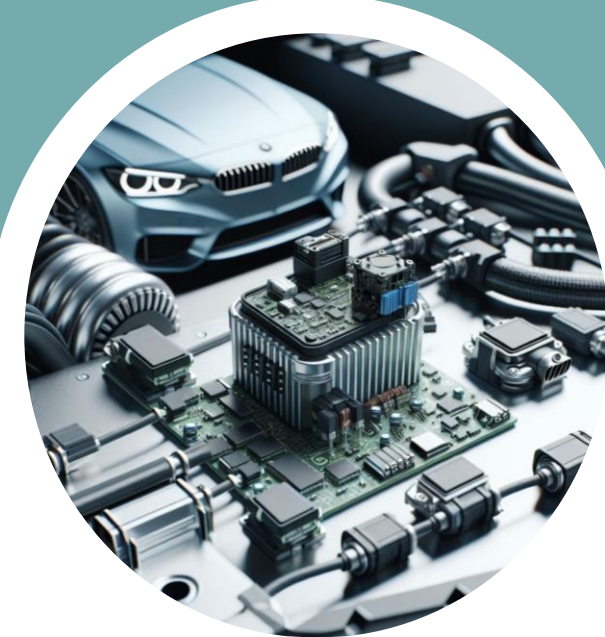
10GHZ ≈ -3 db

具有低衰減，在高速傳輸時不會影響傳輸數據

Array ESD

Automotive ESD Protection





提供AEC-Q101雙線保護元器件，適合用於SerDes差動訊號的裝置使用，如車載攝像頭、ADAS或座艙域控等。

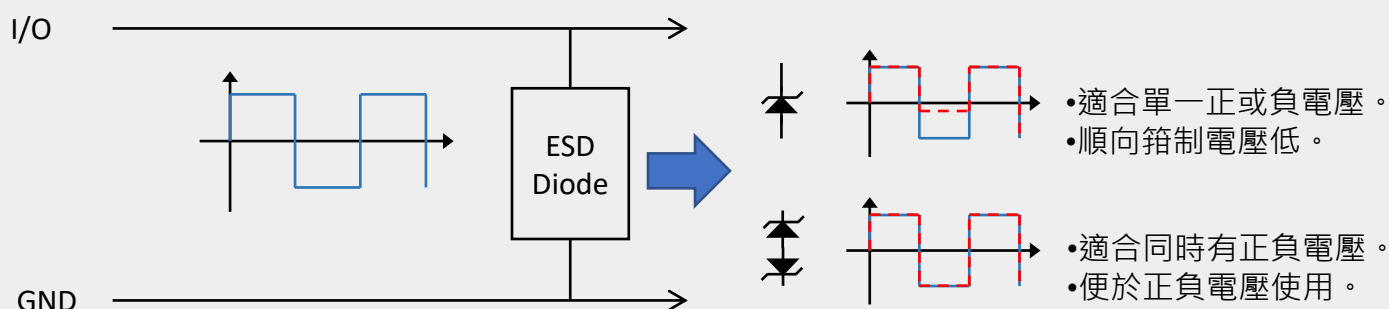
Package Size [0402C-03 / SOT-883](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
ACPDQ03C3V3U-HF	3.3	5	11	20 / 20	6	Uni	0402C-03
ACPDQ03C3V3HT-HF	3.3	15	10	30 / 30	36	Bi	0402C-03
ACPDQ03C5V0AU-HF	5	4	15	18 / 18	0.45	Uni	0402C-03

Package Size [SOT-523](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
ACPDH3-5V0UB-HF	5	4	17	8 / 15	1.2	Uni	SOT-523

Application



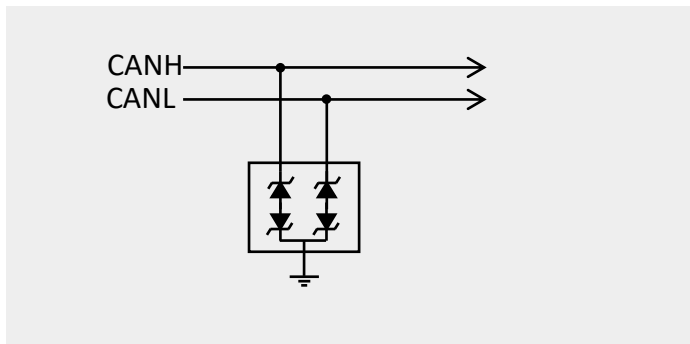


提供AEC-Q101雙線CAN 保護元器件，可同時保護汽車 CAN PHY 的 CAN H 和 CAN L 訊號免受 ISO 7637-3 瞬變和 ESD影響。

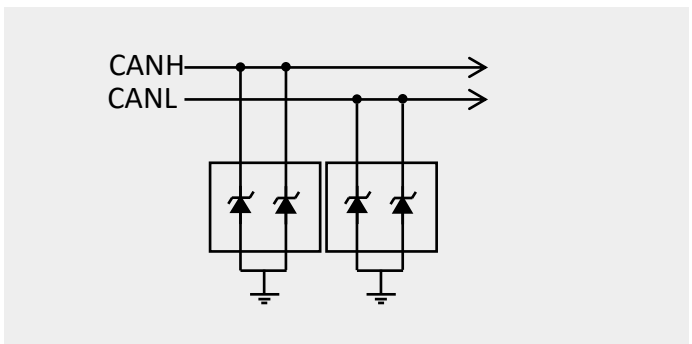
Package Size [SOT-23](#)

Comchip P/N	VRWM(V)	IPP(A)	VC(V)	ESD(kV)	Cj(pF)	Uni/Bi	Package
ACPDT-24CAN-HF	24	3	70	23 / 23	11	Bi	SOT-23
ACPDT-24V	24	1	47	8 / 16	10	Bi	SOT-23
ACPDT-24V0HT-HF	24	8	40	30 / 30	22	Bi	SOT-23
ACPDT-24V0UCHT-HF	24	8	39	30 / 30	45	Uni	SOT-23
ACPDT-24VE-HF	24	3	46	30 / 30	13	Bi	SOT-23
AGSOT24C-HF	24	5	47	30 / 30	65	Uni	SOT-23
ACPDT-36VEU-HF	36	1.5	59	30 / 30	20	Uni	SOT-23

Application



- 可同時保護CANH和CANL。
- 低電容產品使適合用於 CAN-FD 和 FlexRay等高速匯流排。



- 單向產品藉由並聯設計，提升突波耐受能力。

Company

典琦科技

Discrete semiconductor manufacturer and supplier company

Establishment : December, 2000



總部&工廠

台灣新北市鶯歌區



分公司

美國加利福尼亞州弗里蒙特

Certifications



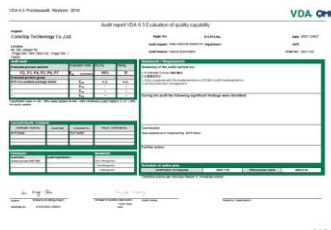
ISO 9001 Certified Since Oct. 2001



ISO 14001 Certified Since Feb. 2004



IATF 16949 Certified Since Dec. 2017



VDA 6.3/2016 Process Audit. Aug. 2022



Contact

Comchip Taiwan

Tel: 886-2-86776675 #101~106

email: salesasia@comchiptech.com

Comchip USA

Tel: 1-510-657-8671

Email: salesusa@comchiptech.com



<https://www.comchiptech.com>

典琦科技股份有限公司