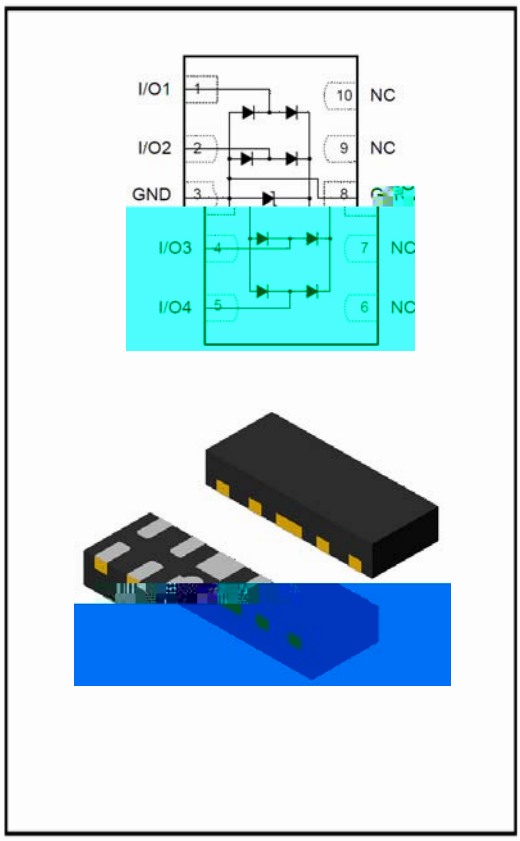
# 4-Line, Uni-directional, Ultra-low Capacitance, Transient Voltage Suppressor




## Features

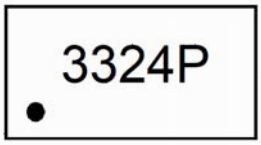
- ●65W peak pulse power (8/20μs)
- ●Ultra low leakage
- ●Operating voltage: 3.3V
- ●Low clamping voltage
- ●Up to 4 lines protects
- ●RoHS Compliant

## Applications

- ● HDMI1.3 /1.4/2.0, USB 2.0/3.0/3.1 Type C
- ● Monitors and flat panel displays
- ● p ' b 8 Î þ ъ ᵀ ɔ MЖ q
- ● PCI Express and Serial SATA Ports

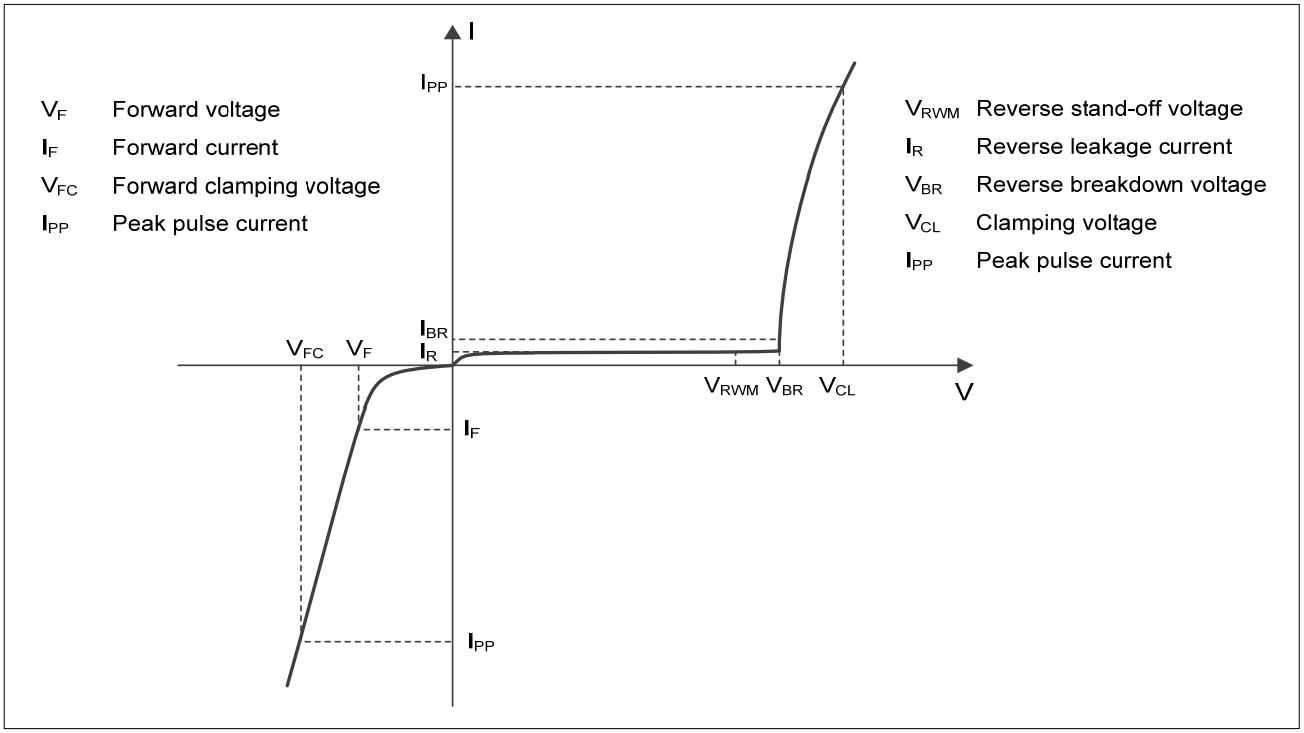
## Mechanical Data

- ● Package: DFN2510-10 (2.5×1.0×0.5mm)
- ● Terminals: Tin plated leads, solderabl per J-STD-002 and JESD22-B102
- ● Polarity: Cathode line denotes the cathode end
- ● Marking:




3324P : Device Marking Code
Dot denotes Pin1

## ■Definitions of electrical characteristics



## ■Maximum Ratings

| PARAMETER | SYMBOL | LIMITS | UNIT |
|---|---|---|---|
| Peak pulse power ($t_p$ = 8/20μs) | $P_{pk}$ | 65 | W |
| Peak pulse current ($t_p$ = 8/20μs) | $I_{PP}$ | 5 | A |
| ESD according to IEC61000-4-2 air discharge | $V_{ESD}$ | ±15 | KV |
| ESD according to IEC61000-4-2 contact discharge | | ±10 | |
| Junction temperature | $T_J$ | 125 | °C |
| Operating temperature | $T_{OP}$ | -40~85 | °C |
| Storage temperature | $T_{STG}$ | -55~150 | °C |

## ■Electrical Characteristics（$T_a$=25 Unless otherwise specified）

| PARAMETER | Symbol | UNIT | Conditions | Min | Typ | Max |
|---|---|---|---|---|---|---|
| Reverse maximum working voltage | $V_{RWM}$ | V | Any I/O pin to ground | | | 3.3 |
| Reverse leakage current | $I_R$ | μA | $V_{RWM}$ = 3.3V, any I/O pin to ground | | | 1.0 |
| Reverse breakdown voltage | $V_{(BR)}$ | V | $I_T$ = 1mA, any I/O pin to ground | 5.0 | 6.5 | 8.0 |
| Clamping voltage *1)* | $V_{CL}$ | V | $I_{PP}$ = 16A, $t_p$ = 100ns | | 16 | |
| Clamping voltage *2)* | $V_{CL}$ | V | $V_{ESD}$ = 8kV | | 16 | |
| Clamping voltage *3)* | $V_{CL}$ | V | $I_{PP}$ = 1A, $t_p$ = 8/20μs | | | 9 |
| | | V | $I_{PP}$ = 5A, $t_p$ = 8/20μs | | | 13 |
| Junction capacitance | CJ | pF | $V_R$ = 0V, f = 1MHz Any I/O pin to GND | | 0.5 | 0.65 |
| | | | $V_R$ = 0V, f = 1MHz Between any I/O pin | | 0.25 | 0.4 |

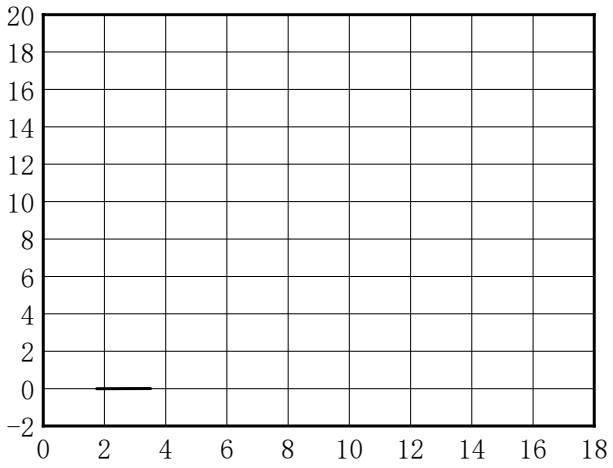
Notes:

1) TLP parameter: $Z_0$ = 50Ω, $t_p$ = 100ns, $t_r$ = 2ns, averaging window from 60ns to 80ns.
2) Contact discharge mode, according to IEC61000-4-2.
3) Non-repetitive current pulse, according to IEC61000-4-5.

## ■Ordering Information (Example)

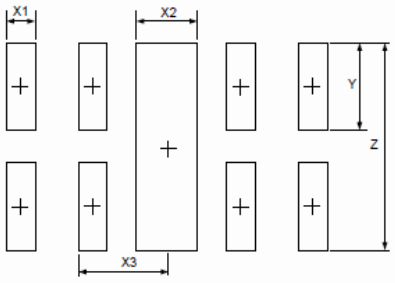
| PREFERED P/N | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|
| 3324P | 3000 | 30000 | 120000 | 7 reel |

■ **Characteristics** (Typical)




## ■ Outline Dimensions

## ■ Soldering Footprint




| SYM | DIMENSIONS | |
|---|---|---|
| | MILLIMETERS | INCHES |
| X1 | 0.200 | 0.008 |
| X2 | 0.400 | 0.016 |
| X3 | 0.600 | 0.024 |
| Y | 0.600 | 0.024 |
| Z | 1.400 | 0.056 |

Notes:
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

## Disclaimer

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