



# 4-Line ESD Protection Array

## DESCRIPTION

- ◆ The ESDV55V0U are designed by TVS array that is to protect sensitive electronics from damage or latch-up due to ESD.
- ◆ They are designed for use in applications where board space is at a premium.
- ◆ ESDV55V0U will protect up to five lines, and may be used on lines where the signal polarities swing above and below ground.
- ◆ ESDV55V0U offer desirable characteristics for board level protection including fast response time, low operating and clamping voltage, and no device degradation.
- ◆ ESDV55V0U may be used to meet the immunity requirements of IEC 61000-4-2, level 4.
- ◆ The small SOT-353 package makes them ideal for use in portable electronics such as cell phones, PDA's, notebook computers, and digital cameras.

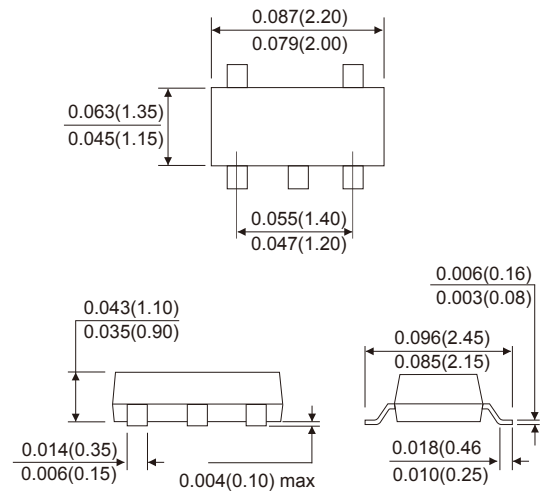
## FEATURES

- ◆ Transient protection for data lines to IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)  
IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects five I/O lines
- ◆ Working voltage : 5V
- ◆ Low leakage current
- ◆ Low operating and clamping voltages

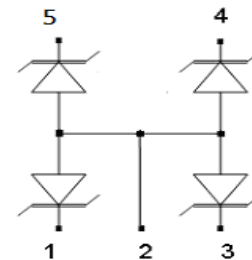
## APPLICATIONS

- ◆ Cellular Handsets and Accessories
- ◆ Cordless Phone
- ◆ PDA
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ MP3 Player

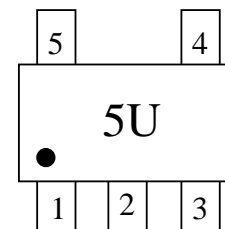
## PACKAGE OUTLINE SOT-353



## PIN CONFIGURATION



## PART MARKING





# 4-Line ESD Protection Array

## ABSOLUTE MAXIMUM RATINGS

( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

| Parameter   | Symbol           | Typical       | Unit               |
|---|------------------|---------------|--------------------|
| Peak Pulse Power ( $t_p = 8/20 \mu\text{s}$ )           | Ppk              | 100           | W                  |
| Maximum Peak Pulse Current ( $t_p = 8/20 \mu\text{s}$ ) | Ipp              | 8             | A                  |
| ESD per IEC 61000 – 4 – 2 (Air )                        | Vpp              | $\pm 15$      | KV                 |
| ESD per IEC 61000 – 4 – 2 (Contact )                    | Vpp              | $\pm 8$       | KV                 |
| Operating Junction Temperature                          | T <sub>J</sub>   | -55 ~ 125     | $^{\circ}\text{C}$ |
| Storage Temperature Range                               | T <sub>STG</sub> | -55 ~ 150     | $^{\circ}\text{C}$ |
| Lead Soldering Temperature                              | T <sub>L</sub>   | 260 ( 10sec ) | $^{\circ}\text{C}$ |

## ELECTRICAL CHARACTERISTICS

( $T_A=25^{\circ}\text{C}$  Unless otherwise noted)

| Parameter                   | Symbol           | Conditions  | Min. | Max. | Unit          |
|-----------------------------|------------------|---|------|------|---------------|
| Reverse Stand – Off Voltage | V <sub>RWM</sub> |   |      | 5    | V             |
| Reverse Breakdown Voltage   | V <sub>BR</sub>  | I <sub>t</sub> = 1mA                                      | 6    | 7.6  | V             |
| Reverse Leakage Current     | I <sub>R</sub>   | V <sub>RWM</sub> = 5V , T=25 $^{\circ}\text{C}$           |      | 1    | $\mu\text{A}$ |
| Forward Voltage             | V <sub>F</sub>   | I <sub>F</sub> =10mA                                      |      | 1.0  | V             |
| Clamping Voltage            | V <sub>C</sub>   | I <sub>pp</sub> =8A , t <sub>p</sub> = 8/20 $\mu\text{s}$ |      | 13   | V             |
| Junction Capacitance        | C <sub>j</sub>   | Between I/O Pin and GND V <sub>R</sub> = 0V , f = 1MHz    |      | 60   | pF            |

## ORDERING INFORMATION

| Part Number | Package | Packing    | Part Marking |
|-------------|---------|------------|--------------|
| ESDV55V0U   | SOT-353 | 3K/7" Reel | 5U           |



# 4-Line ESD Protection Array

## TYPICAL CHARACTERISTICS

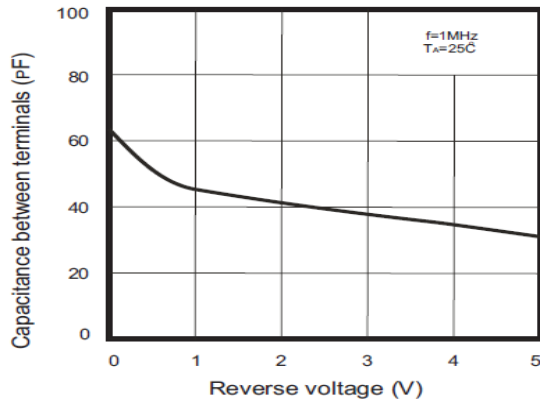


Fig 1 : Junction Capacitance V.S Reverse Voltage Applied

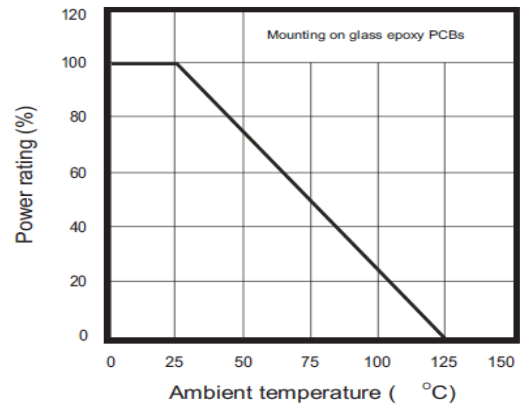


Fig 2 : Power rating V.S Ambient temperature

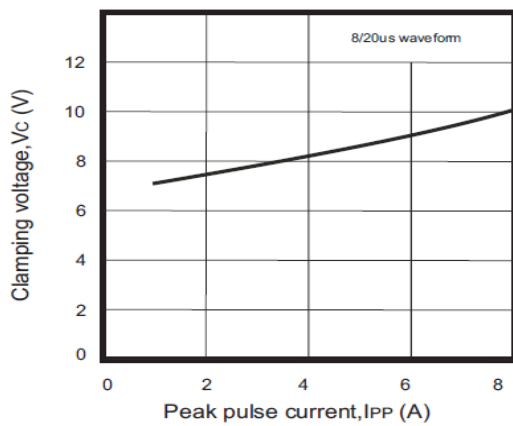


Fig 3 : Clamping Voltage VS Peak Pulse Current

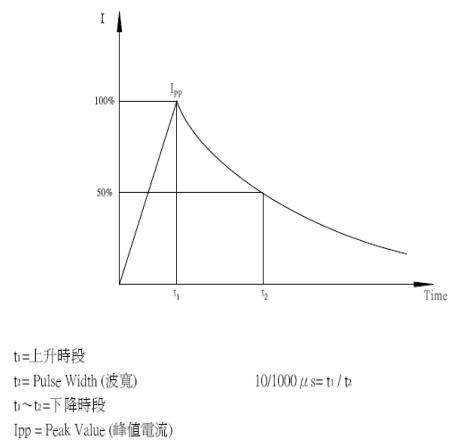


Fig 4 : Forward Voltage Drop V.S Peak Forward Current