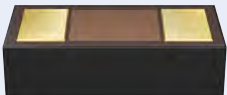


Sample Kit 2021

Transient Voltage Suppressors – TVS

High-performance TVS Diodes for ICT, Consumer
and High-speed Applications



Excellent ESD protection for portable, wearable & high-speed applications

The new micro packaged TVS diodes by TDK are designed to protect voltage sensitive components from ESD for existing and future applications in direction of general purpose and high-speed interfaces.

Excellent clamping voltage, low leakage and fast response time provides a state-of-the-art protection on applications that are exposed to ESD. Due to its ultra-slim package, they are an excellent solution for smartphones, true wireless earbuds, smart watches and many other wearable applications with tight space requirements. Ultra-low capacitance permits excellent signal integrity on demanding high-speed interfaces, such as USB 3.1, HDMI, Display Port and Thunderbolt.

Features

- Ultra-small SMD package with a thickness of 100 μm and 150 μm
- Available in chip scale packages CSP0201 and CSP01005
- High ESD resistivity up to 24 kV based on IEC61000-4-2
- Low clamping voltage down to 5.0 V ($I_{\text{clamp}} = 16 \text{ A}$, TLP)
- Low leakage current as low as 1 nA ($V_{\text{RWM}} = 3.3 \text{ V}$)
- Very low capacitance down to 0.48 pF

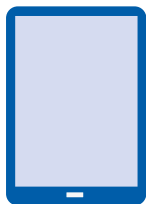
Applications

General purpose

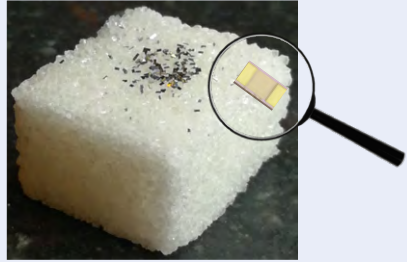
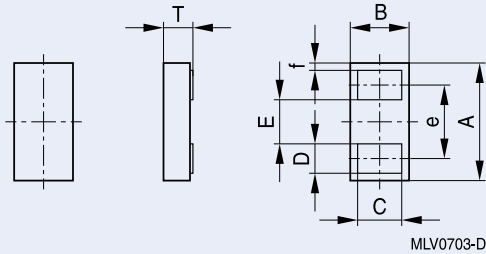
- Smartphones
- Laptops
- Tablets
- Wearables, portable devices
- Network communication devices

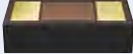
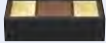
High-speed interfaces

- USB, Firewire
- DVI, HDMI, display port
- S-ATA
- Thunderbolt
- SWP/NFC



Dimensional drawings



| |  | |  | |
|-----------|---|-----------|---|-----------|
| | WL-CSP0201 SL | | WL-CSP01005 SL | |
| | B74121G0050M060 | | B74111U0050M060 | |
| | B74121G0033M060 | | B74111U0033M060 | |
| Symbol | Mean | Tol. | Mean | Tol. |
| A | 0.60 | ±0.025 | 0.40 | ±0.020 |
| B | 0.30 | ±0.025 | 0.20 | ±0.020 |
| T | 0.15 | ±0.010 | 0.10 | ±0.010 |
| C | 0.22 | ±0.020 | 0.15 | ±0.020 |
| D | 0.13 | ±0.020 | 0.10 | ±0.020 |
| E | 0.26 | (typical) | 0.15 | (typical) |
| e | 0.39 | (typical) | 0.25 | (typical) |
| f | 0.04 | (typical) | 0.025 | (typical) |
| Footprint | 600 x 300 µm | | 400 x 200 µm | |
| Thickness | 150 µm | | 100 µm | |

Dimensions in mm

Symbols and terms

| | | | |
|------------|------------------------------|-------------|-------------------------|
| C | Capacitance | R_{dyn} | Dynamic resistance |
| I_{leak} | Reverse leakage current | V_{BR} | Breakdown voltage |
| I_{PP} | Peak power current (8/20 µs) | V_{clamp} | Clamping voltage TLP |
| SL | Slim-line | V_{ESD} | ESD |
| TLP | Transmission-line pulse | V_{RWM} | Reverse working voltage |

Important information: It is incumbent on the customer to check and decide whether a product is suitable for use in a particular application. Our products are described in detail in our data sheets. Our important notes and product specific Cautions and warnings must be observed. All relevant information is available through our sales offices.