Elektronische Bauelemente

# KS05ULA5

**30W, 5V**
**Ultra Low Capacitance**
**ESD Protection for high-speed interfaces**

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-fre

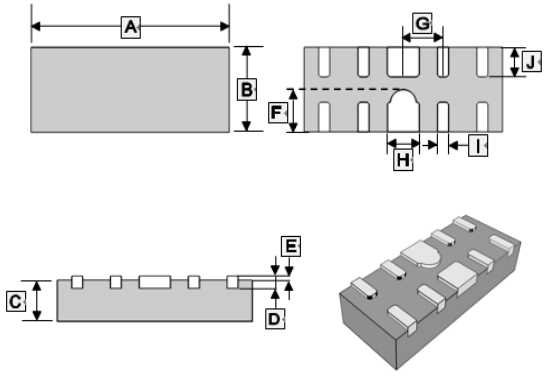
## DESCRIPTION

The KS05ULA5 is a transient voltage suppressors (TVS) which provide a very high level protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

The KS05ULA5 was past ESD transient voltage up to ±8KV (contact) according to IEC61000-4-2 and withstand peak current up to 2.5A for 8/20us pulse according to IEC61000-4-5.

The KS05ULA5 is available in DFN2510 package. Standard products are Pb-free and Halogen-free.

**DFN2510**




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 2.424 | 2.576 | F | 0.410 | 0.610 |
| B | 0.924 | 1.076 | G | 0.500 TYP. | |
| C | 0.550 TYP. | | H | 0.300 | 0.500 |
| D | 0.150 REF. | | I | 0.150 | 0.250 |
| E | 0.000 | 0.050 | J | 0.304 | 0.456 |

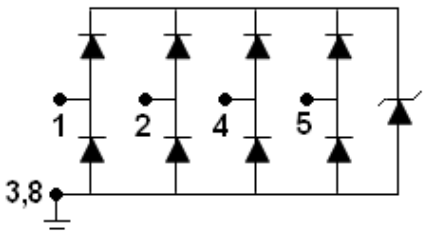
## APPLICATIONS

- TVs, monitors , audio
- Portable devices
- Notebooks, mother boards, graphic cards and ports.
- Set-top box and game consoles.

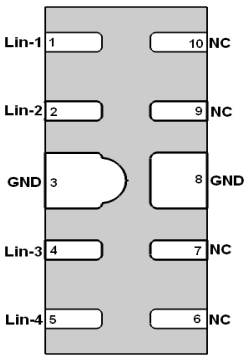
## FEATURES

- Small Body Outline Dimensions:
  2.5 mm x 1.0 mm
- Low Body Height: 0.55mm 22123200
- Stand−off Voltage: 5 V
- ESD Rating of Class 3 (> 16 kV)
  per Human Body Model

**Circuit Diagram**




**(Top view)**




## MARKING


.W = Device code
Y = Year code
W = Week code

**Marking**

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---|---|---|
| DFN2510 | 3K | 7 inch |

## ABSOLUTE MAXIMUM RATINGS ($T_A$=25℃ unless otherwise specified)

| Rating | | Symbol | Value | Unit |
|---|---|---|---|---|
| IEC 61000-4-2 (ESD) | Air contact | $V_{ESD}$ | ±15 | kV |
| | Contact discharge | | ±8 | |
| Peak pulse power (tp=8/20us) | | $P_{PK}$ | 30 | W |
| Peak pulse current (tp=8/20us) | | $I_{PP}$ | 2.5 | A |
| Operation & Storage temperature range | | $T_J$, $T_{STG}$ | 125, -55 ~ +150 | ℃ |
| Lead temperature | | $T_L$ | 260 | ℃ |

## ELECTRICAL CHARACTERISTICS ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | - | - | 5 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ =5V | - | - | 1 | μA |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_T$=1mA | 6.5 | 8 | 10 | V |
| Forward Voltage | $V_F$ | $I_T$ =10mA | 0.4 | 0.8 | 1.4 | V |
| Clamping Voltage | $V_{Clamp}$ | $I_{PP}$=1A, tp=8/20us | - | - | 10 | V |
| | | $I_{PP}$=2.5A, tp=8/20us | - | - | 12 | |
| Junction capacitance | $C_J$ | I/O-to-GND $V_R$=0, f=1MHz | - | 0.7 | 0.9 | pF |
| | | I/O-to-I/O $V_R$=0, f=1MHz | - | 0.35 | 0.5 | pF |

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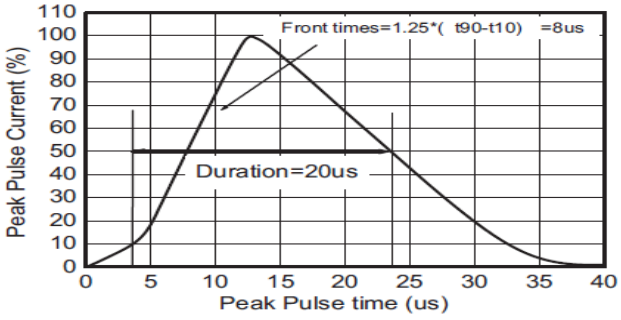
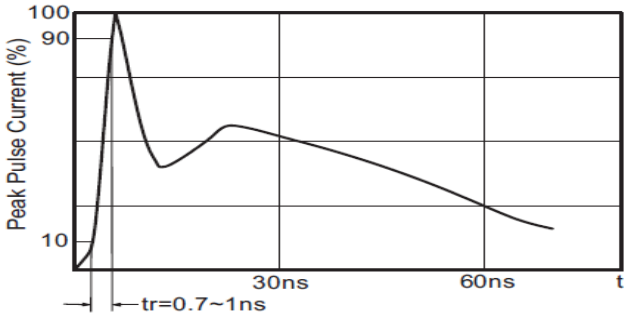
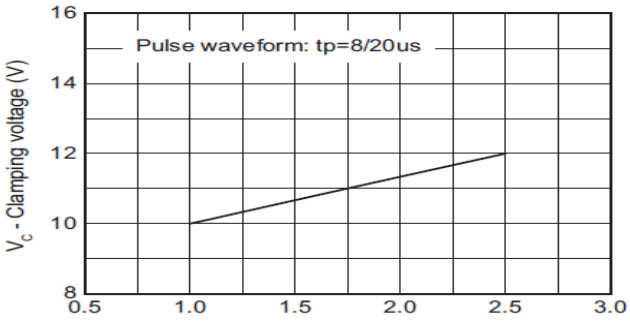
## RATINGS AND CHARACTERISTICS CURVES



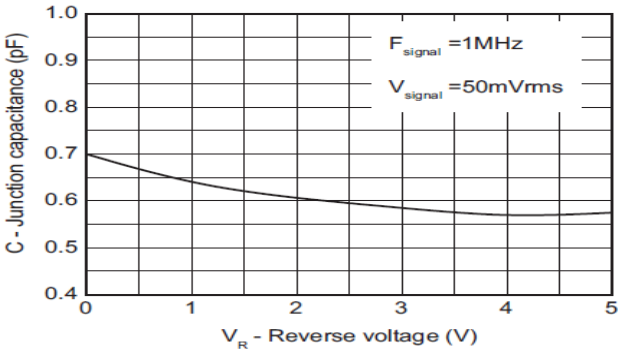

**8/20us waveform**



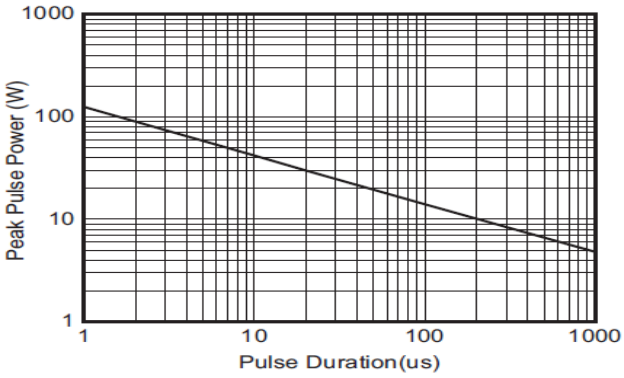

**IEC61000-4-2 waveform**



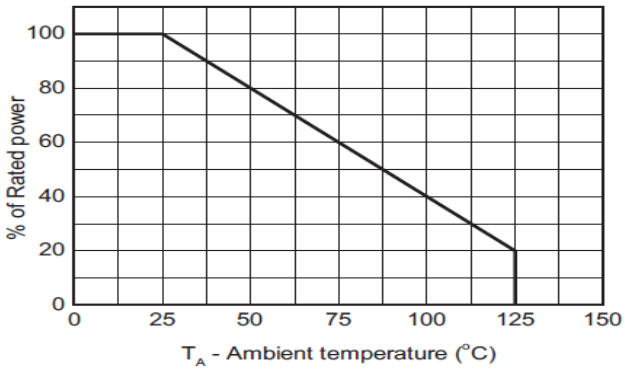

**Clamping voltage vs. Peak pulse current**



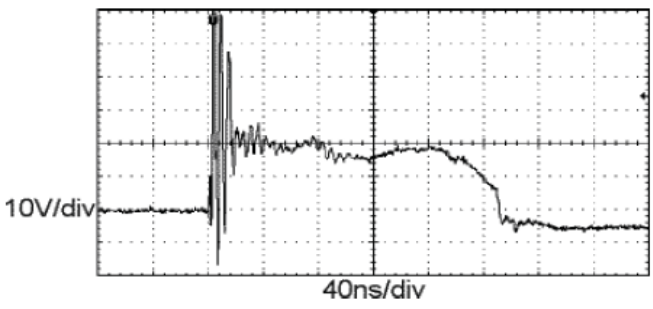

**Capacitance vs. Reveres voltage**



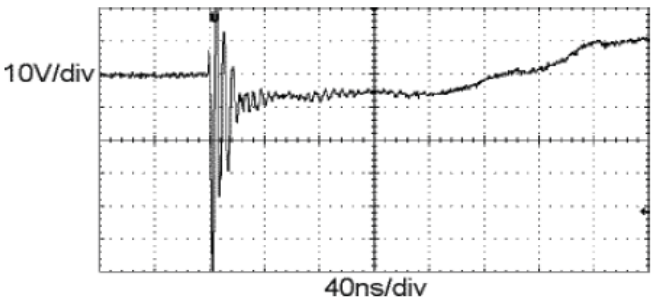

**Non-Repetitive Peak Pulse Power vs. Pulse time**




**Power derating vs. Temperature**




**ESD clamping voltage**
**(IEC61000-4-2 +8KV contact)**




**ESD clamping voltage**
**(IEC61000-4-2 -8KV contact)**