

## DESCRIPTION

JCS2212AU is designed to protect one signal line from the damage caused by ESD and other transients. Excellent clamping capability, low leakage, fast response time provide best in class protection on designs that are exposed to ESD. The device is housed in a leadless ultra-small CSP0603 Surface-Mounted Device (SMD) package. Because of its small size and low capacitance, it is suited for use in USB Type-C and high speed interface devices.

## APPLICATIONS

- ✧ USB Type-C.
- ✧ USB3.0.
- ✧ HDMI 2.0.
- ✧ Thunderbolt.

## FEATURES

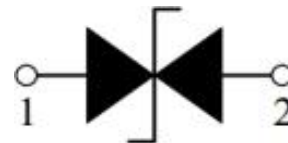
- ✧ Low capacitance:0.25pF(typ.).
- ✧ Reverse stand-off voltage:5V.
- ✧ IEC 61000-4-2 (Air):  $\pm 20\text{KV}$ .
- ✧ IEC 61000-4-2 (Contact):  $\pm 20\text{KV}$ .
- ✧ Bi-directional, single line protection.

## MECHANICAL CHARACTERISTICS

- ✧ GSP0603(0.58 mm × 0.28 mm× 0.15 mm) Package.
- ✧ Quantity Per Reel : 15,000pcs.
- ✧ Reel Size : 7 inch.
- ✧ Lead Finish : Lead Free.



GSP0603



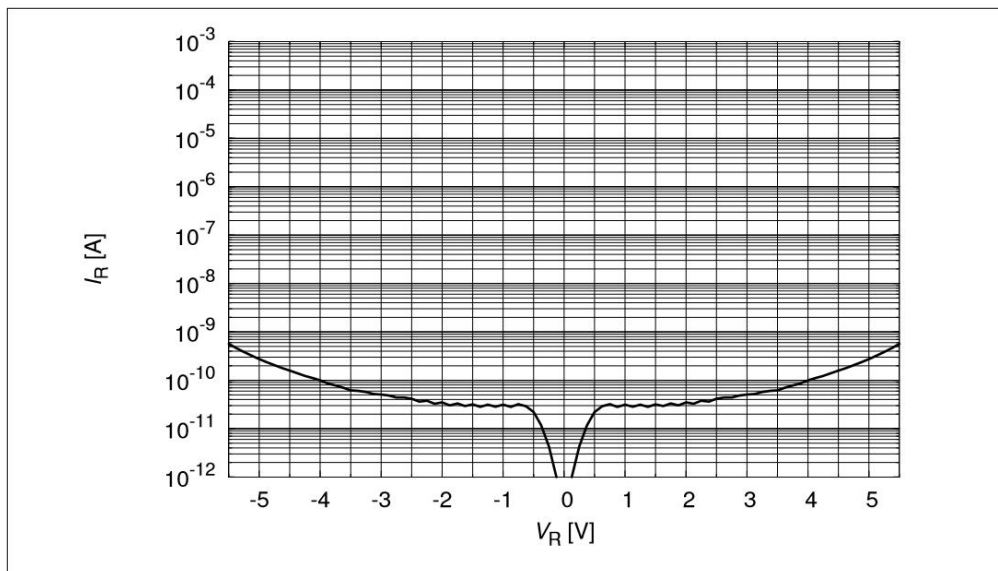
**GENERAL CHARACTERISTICS**

Symbol	Parameter	Min	Max	Unit
V <sub>ESD</sub>	Electrostatic Discharge Voltage per IEC 61000-4-2 (Air)	--	±20	KV
	Electrostatic Discharge Voltage per IEC 61000-4-2 (Contact)	--	±20	KV
T <sub>OP</sub>	Operating Temperature	-55	125	°C
T <sub>STRG</sub>	Storage Temperature Range	-65	150	°C

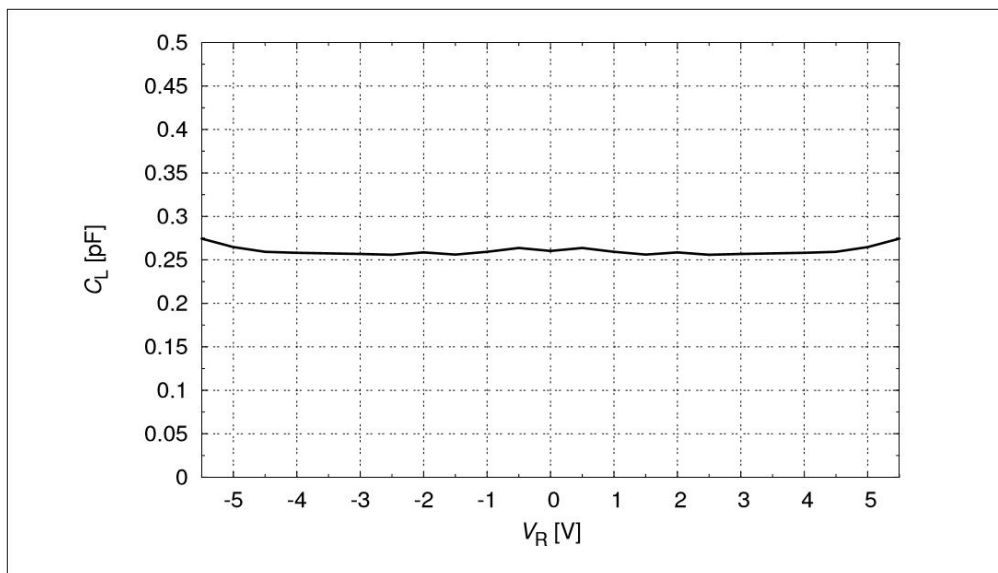
**ELECTRICAL CHARACTERISTICS(TA=25°C)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V <sub>RWM</sub>	--	--	5	5.5	V
Trigger voltage	V <sub>t1</sub>	--	--	9	--	V
Holding voltage	V <sub>h</sub>	I <sub>T</sub> =10mA	--	2.3	--	V
Clamping Voltage	V <sub>c</sub>	I <sub>TLP</sub> = 8 A, t <sub>p</sub> =100ns	--	8.4	--	V
		I <sub>TLP</sub> = 16 A, t <sub>p</sub> =100ns	--	12	--	V
		I <sub>pp</sub> = 1 A, t <sub>p</sub> =8/20us	--	3	--	V
		I <sub>pp</sub> = 3 A, t <sub>p</sub> =8/20us	--	5.5	--	V
Reverse Current	I <sub>R</sub>	V <sub>RWM</sub> = 5.5V	--	--	50	nA
Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz	--	0.25	--	pF
	C <sub>J</sub>	V <sub>R</sub> =0V, f=1GHz	--	0.25	--	pF

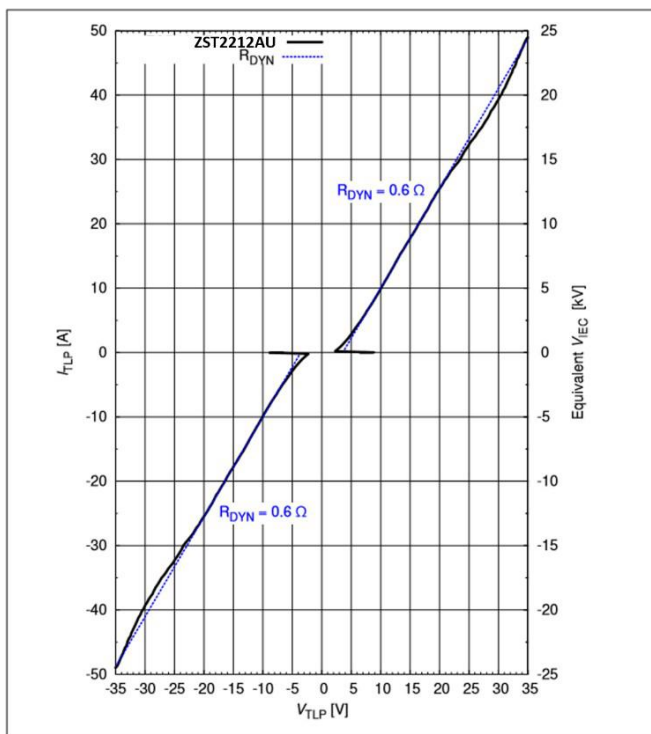
**TYPICAL CHARACTERISTICS( $T_A=25^\circ\text{C}$ )**



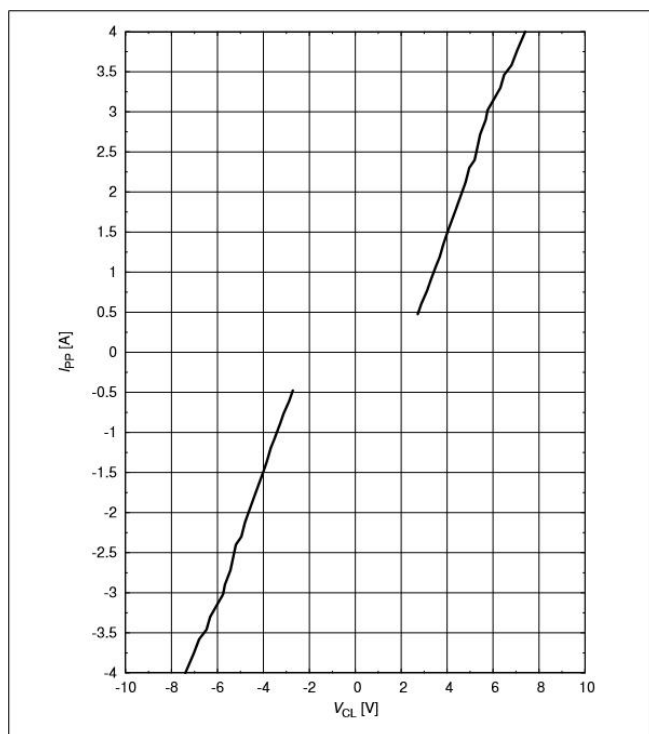
**Figure 1: Reverse current:**  
 **$I_R = f(V_R)$**



**Figure 2: Line capacitance  $C_L = f(V_R)$**

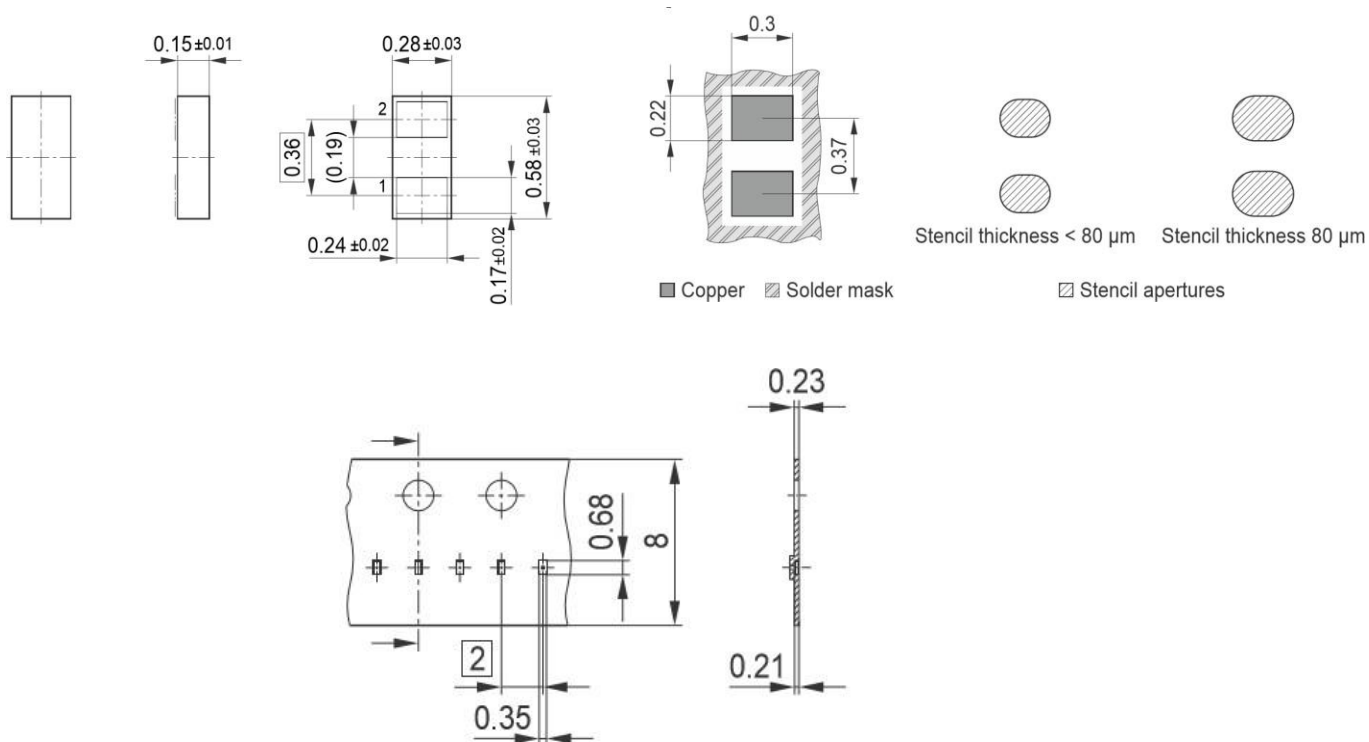


**Figure 3: Clamping voltage (TLP):  $I_{TLP} = f(V_{TLP})$**



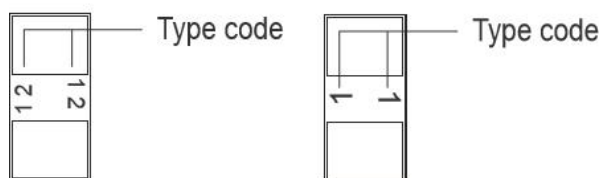
**Figure 4: Clamping voltage (Surge):  $I_{PP} = f(V_{CL})$**

**GSP0603 PACKAGE OUTLINE & DIMENSIONS**



Deliveries can be in Embossed Tape with or without vacuum hole (no selection possible).  
Specification allows identical processing (pick & place) by users.

Marking on pad-side



Website: <http://www.jksemi.com>

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