

# DATASHEET

**PRODUCT** **ESD Suppressor**

**SERIES** JES Series

**PART NO.** \_\_\_\_\_

**ISSUE DATE** 2023/6/12

**REVISION DATE** 2023/6/12

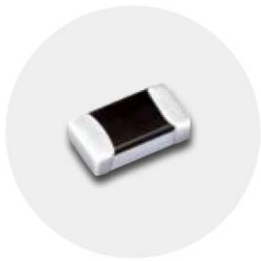
**REFERENCE NO.** \_\_\_\_\_

**RoHS COMPLIANCE ITEM**

**Halogen Free**

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### FEATURES

- Protection against ESD voltages and currents (IEC61000-4-2 Level 4)
- Extremely quick response time (<1ns) present ideal ESD protection
- Extremely low capacitance (0.2pF typical)
- Extremely low leakage current
- Bi-directional device
- SMD (Surface Mount Device)
- Zero signal distortion
- Compact size for EIA 0201/0402/0603

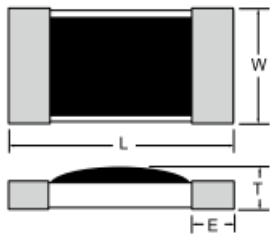
### APPLICATIONS

Antenna circuit, USB2.0/3.0, IEEE-1394, DVI, HDMI.

### EXPLANATION OF PART NUMBER

JES	0603	C	050	T	OR2	XXG
①	②	③	④	⑤	⑥	⑦
① ESD Protection Series				⑤ Tape on reel		
② Chip size				⑥ Capacitance		
③ ESD protection				⑦ Optional Suffix		
④ Operating Voltage						

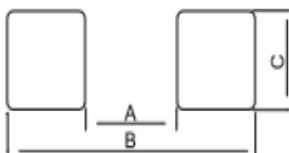
### DIMENSION



unit:mm

Size(EIA)	L	W	T	E
0201	0.63±0.05	0.30±0.03	0.23±0.05	0.165±0.05
0402	1.00±0.10	0.50±0.10	0.34±0.10	0.20±0.15
0603	1.60±0.10	0.85±0.15	0.51±0.05	0.30±0.20

### SOLDER LAND INFORMATION



unit:mm

Size(EIA)	A	B	C
0201	0.35	1.05	0.35
0402	0.50	1.50	0.50
0603	0.75	2.25	0.75

### STANDARD PACKING

Size (EIA)	0201	0402	0603
Quantity (pcs/reel)	15,000	10,000	4,000

## PERFORMANCE CHARACTERISTICS

			JES0201C050T0R2XXG
Characteristic	Symbol	Unit	Typical.
Rated voltage	$V_{DC}$	V	5
Leakage current	IL	$\mu A$	0.01
Trigger voltage	Vt	V	250
Clamping voltage	Vc	V	30
Capacitance, @1MHz	Cp	pF	0.2
Response time		ns	<1
ESD voltage capability, Contact discharge mode		kV	8
ESD voltage capability, Air discharge mode		kV	15
ESD pulse withstand		Pulses	1000

			JES0402C050	JES0402C120	JES0402C240	JES0402C300
Characteristic	Symbol	Unit	Typical.	Typical.	Typical.	Typical.
Rated voltage	$V_{DC}$	V	5	12	24	30
Leakage current	IL	$\mu A$	0.01	0.01	0.01	0.01
Trigger voltage	Vt	V	300	300	300	300
Clamping voltage	Vc	V	30	30	30	30
Capacitance, @1MHz	Cp	pF	0.2	0.2	0.2	0.2
Response time		ns	<1	<1	<1	<1
ESD voltage capability, Contact discharge mode		kV	8	8	8	8
ESD voltage capability, Air discharge mode		kV	15	15	15	15
ESD pulse withstand		Pulses	1000	1000	1000	1000

			JES0603C050	JES0603C120	JES0603C240	JES0603C300
Characteristic	Symbol	Unit	Typical.	Typical.	Typical.	Typical.
Rated voltage	$V_{DC}$	V	5	12	24	30
Leakage current	IL	$\mu A$	0.01	0.01	0.01	0.01
Trigger voltage	Vt	V	300	300	300	300
Clamping voltage	Vc	V	30	30	30	30
Capacitance, @1MHz	Cp	pF	0.2	0.2	0.2	0.2
Response time		ns	<1	<1	<1	<1
ESD voltage capability, Contact discharge mode		kV	8	8	8	8
ESD voltage capability, Air discharge mode		kV	15	15	15	15
ESD pulse withstand		Pulses	1000	1000	1000	1000

Rated voltage - IL measurement rated voltage

Vt – Measurement by using Transmission Line Pulse (TLP)

Vc – Measurement by using Transmission Line Pulse (TLP)

Cp – Device capacitance measured with 1Vrms

## GENERAL SPECIFICATION

### 1. Temperature Specifications

Operating Temperature Range: -40°C to + 85°C

Storage Temperature Range: -40°C to + 85°C

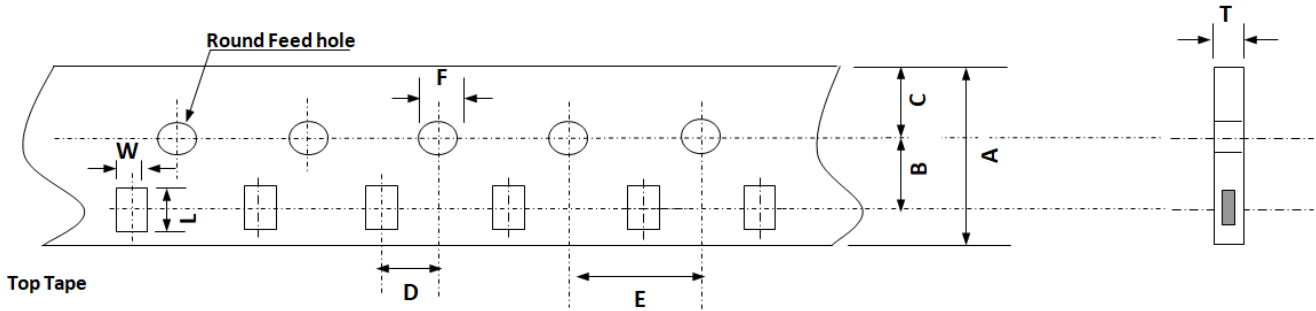
### 2. Temperature Specifications

Item	Specifications	Test condition	Reference
Bias humidity	$I_L \leq 10 \mu A$	90%RH, 40°C, rated voltage, 1000hrs	MIL-STD-202 Method 103
Thermal Shock	$I_L \leq 10 \mu A$	-40°C to 85°C, 30 min. cycle, 5 cycles	JIS C 0025 (1998)Test Na
High Temperature load voltage	$I_L \leq 10 \mu A$	Rated voltage, 85°C, 1000hrs	MIL-STD-202G Method 108
Solder leach resistance	$I_L \leq 10 \mu A$	260°C, 10s	MIL-STD-202G Method 210F

$I_L$  – Leakage current at rated voltage, the maximum leakage current was measured after reliability test.

**PACKAGING SPECIFICATIONS**

**Carrier Tape Specifications**

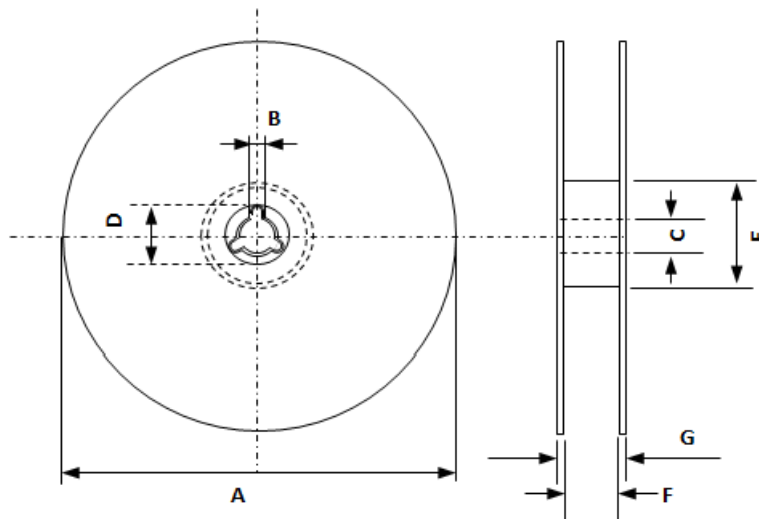


**Dimensions of Paper Tape**

Unit in mm

SIZE	A	B ± 0.05	C	D ± 0.05	E ± 0.1	F	L	W	T
0201	8.0 ± 0.1	3.5	1.75 ± 0.05	2.0	4.0	1.55 ± 0.05	0.7 ± 0.02	0.36 ± 0.02	0.42 ± 0.02
0402	8.0 ± 0.1	3.5	1.75 ± 0.05	2.0	4.0	1.55 ± 0.05	1.12 ± 0.03	0.59 ± 0.03	0.60 ± 0.03
0603	8.0 ± 0.3	3.5	1.75 ± 0.10	2.0	4.0	1.50 ± 0.10	1.90 ± 0.15	1.05 ± 0.15	0.60 ± 0.03

**Reel Specifications**



**Dimensions**

Unit in mm

SIZE	A	B	C	D	E	F	G	Quantity Reel (pcs)
0201	178 ± 2.0	2.0 ± 0.5	13.0 ± 0.5	21.0 ± 0.8	62.0 ± 1.5	9.0 ± 0.5	13.0 ± 1.0	15,000
0402	178 ± 2.0	2.0 ± 0.5	13.0 ± 0.5	21.0 ± 0.8	62.0 ± 1.5	9.0 ± 0.5	13.0 ± 1.0	10,000
0603	178 ± 2.0	2.0 ± 0.5	13.0 ± 0.5	21.0 ± 0.8	62.0 ± 1.5	9.0 ± 0.5	13.0 ± 1.0	4,000