Innovative Service Around the Globe YAGEO

DATA SHEET

ULTRA LOW CAPACITANCE PROTECTION DEVICE

UE0402

15V

RoHS compliant & Halogen free

Product specification – November 28, 2014 V.0

YAGEO Phycomp

SCOPE

This specification describes UE0402 has a typical capacitance of only 0.07pF (I/O to GND), and it can be used to meet the ESD immunity requirement of IEC61000-4-2 (15KV air, 8KV contact discharge).

APPLICATIONS

- High Definition Multi-Media Interface
- (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface (DP)
- Unified Display Interface (UDI)
- Mobile Display Digital Interface (MDDI)
- Gigabit Ethernet
- USB2.0 and USB3.0
- IEEE1394 interface

FEATURES

- Halogen Free Epoxy
- ESD protection for high speed data lines to
- IEC61000-4-2
- ESD contact discharge typical 8KV, max 15KV
- ESD air discharge typical 15KV, max 25KV
- Surface mount
- Extremely low capacitance
- Very low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The best ESD protection for high frequency,
- low voltage applications

ORDERING INFORMATION - GLOBAL PART NUMBER

Part number is identified by the series name, size, clamping voltage, trigger voltage, packaging type, capacitance, taping reel, working voltage.

GLOBAL PART NUMBER (PREFERRED)

UE0402 X X X - XX XX X
(1) (2) (3) (4) (5) (6) (7)

(1) CLAMPING VOLTAGE

E = 35V

(2) TRIGGER VOLTAGE

C =350V

(3) PACKAGING TYPE

R = Paper taping reel

(4) CAPACITANCE

– = Base on spec

(5) TAPING REEL

07 = 7 inch dia Reel

7D = 7 inch reel with double quantity

(6) WORKING VOLTAGE

15V = 15V

(7) DEFAUL CODE

Letter L is system default code for ordering only

ORDERING EXAMPLE

The ordering code for a UE00402 clamping voltage 35V, trigger voltage 350V ESD suppressor working voltage 15V, supplied in 7-inch tape reel with 10Kpcs quantify is: UE00402CR-0715VL.

MARKING

UE0402

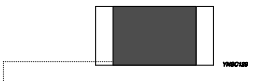


Fig. 1

No Marking

CONSTRUCTION

The ESD suppressors are constructed out of a high-grade ceramic body. Internal metal electrode is cut a kerf into two parts which are connected by ESD absorbent paste. The ESD absorbent layer is covered with protective coat. Finally, the two external terminations (matte tin) are added. See Fig. 2.

DIMENSIONS

Table 1

TYPE	L (mm)	W (mm)	H (mm)	l_1 (mm)
UE0402	1.00 ±0.05	0.50 ±0.05	0.35 ±0.05	0.25 ±0.15

RECOMMENDED FOOTPRINT DIMENSIONS

Table 2

SIZE FOOTPRINT	Dimensions code (unit: mm)		
	A	B	C
UE0402	0.60	0.50	1.00

OUTLINES

For dimension, please refer to Table 1

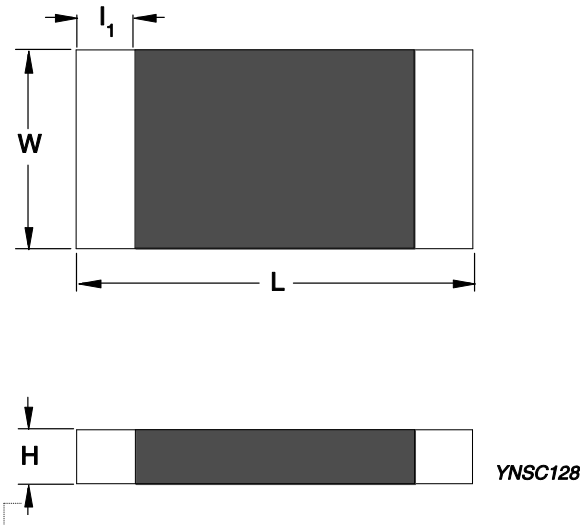


Fig. 2 ESD suppressor outline

For Table 2

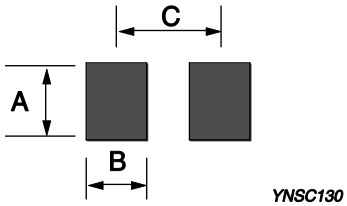


Fig. 3

ABSOLUTE MAXIMUM RATINGS

Table 3

PARAMETER	VALUE
Maximum Contact discharge voltage Per IEC61000-4-2	15KV
Maximum Air discharge voltage Per IEC61000-4-2	25KV
Maximum Operating temperature(TOPER)	-55°C to +125°C
Maximum temperature for soldering during 10s (TL)	260°C

ELECTRICAL CHARACTERISTICS (TA=25°C)

Table 4

CHARACTERISTICS	UE0402
Rated Voltage (V_R)	15V (Max)
Trigger Voltage (V_T)	350V (Typical)
Clamping Voltage (V_C)	35V (Typical)
Leakage current (I_L)	10nA (Typical)
Capacitance (C_P)	0.07pF(typical)

NOTE:

1. Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.
2. After reliability tests such as high temp storage, temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10uA.
3. Capacitance is measured at VR=0V, f =1MHZ

PACKING STYLE AND PACKAGING QUANTITY

Table 5 Packing style and packaging quantity

PACKING STYLE	REEL DIMENSION	UE0402
Paper taping reel (R)	7" (178 mm)	10,000

ESD CLAMPING TEST

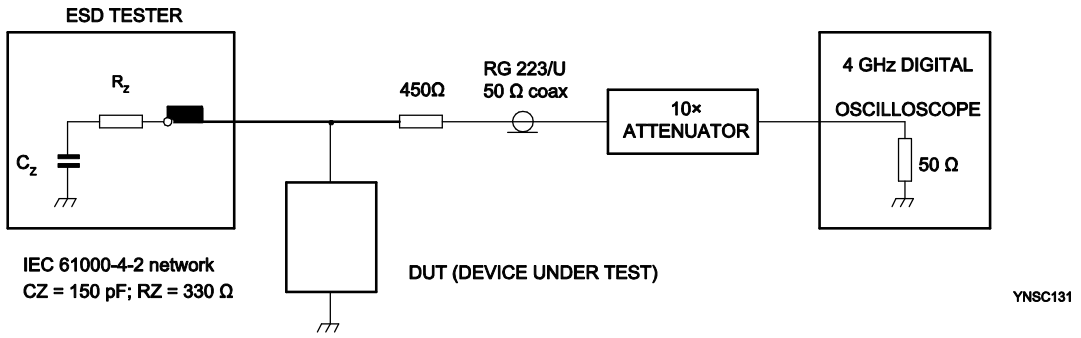


Fig. 4

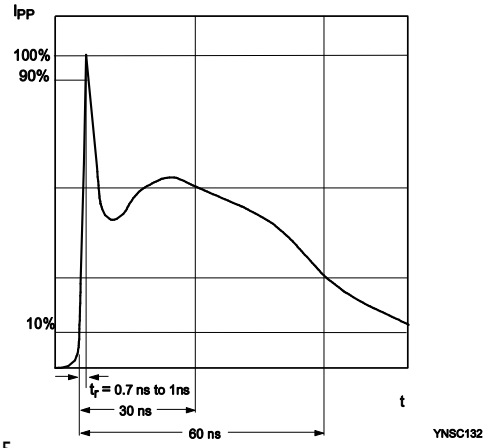


Fig. 5

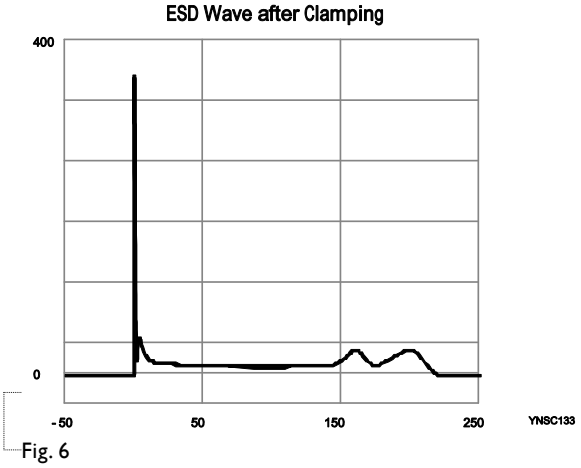


Fig. 6

SOLDER REFLOW RECOMMENDATIONS

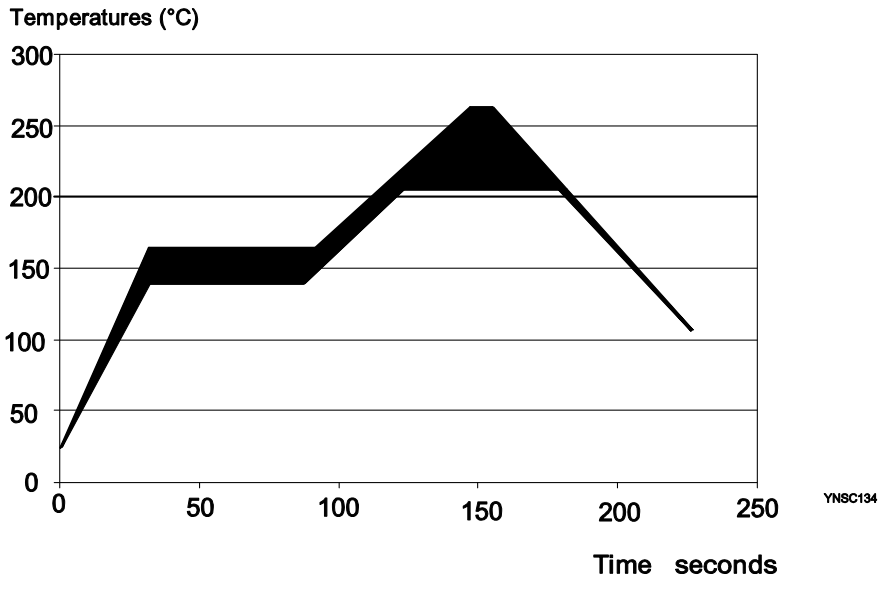
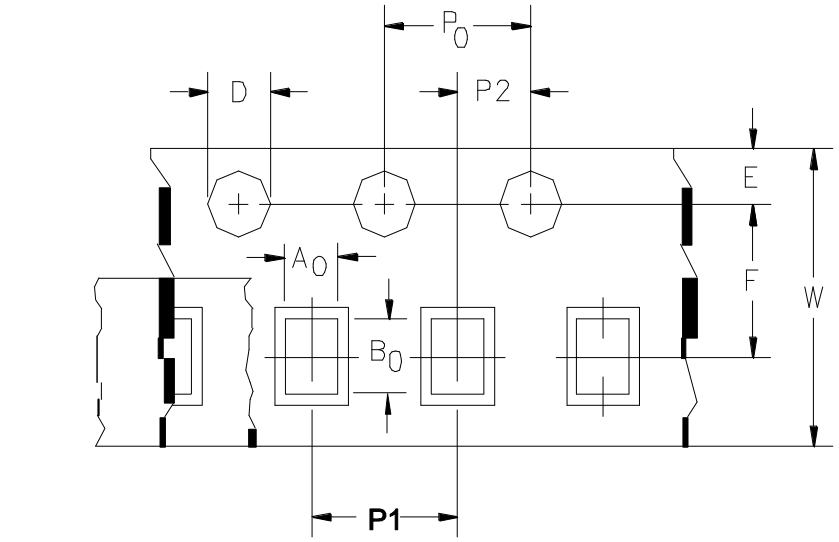


Fig. 7

PACKAGE INFORMATION

Dimension	A0	B0	D	P0	P1	P2	E	F	W
Typical (mm)	0.65	1.15	1.50	4.00	2.00	2.00	1.75	3.50	8.00



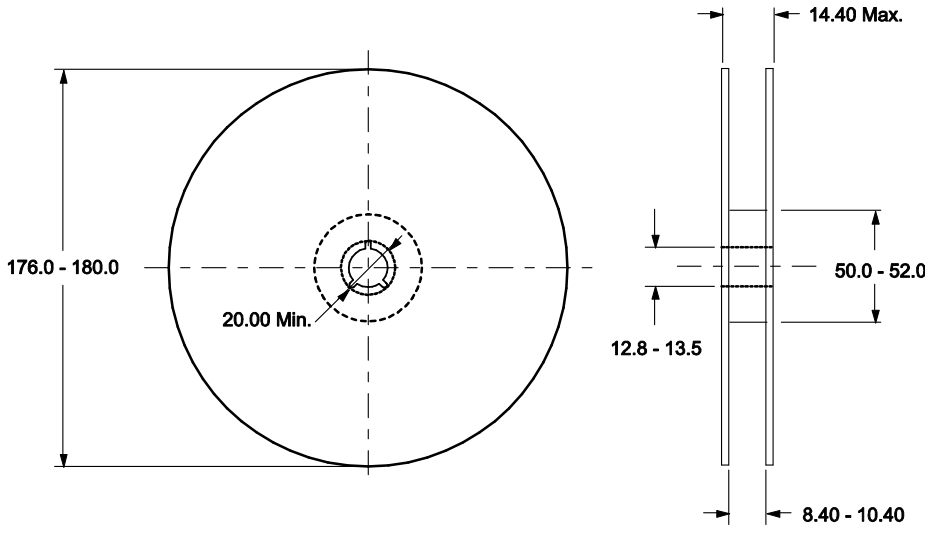


Fig. 8

TESTS AND REQUIREMENTS

Table 6 Test condition, procedure and requirements

TEST	REFERENCE STANDARD	TEST CONDITION	SPECIFICATION
Operating temperature		-55 °C to 125°C	IL =10μ A
Bending	IEC 60068-2-21	3 mm deflection	
Resistance of solder heat	IEC 60068-2-58	260 ± 5℃ for 10 ± 1 sec	
Thermal shock	MIL-STD-202G Method-107G	-55℃ to 125℃, 5 cycles	
Solderability	IPC/JEDEC J-STD-002B test B	245 ± 5℃ solder, 2 ± 0.5 sec dwell. Solder: Sn96.5/Ag3.0/Cu0.5	95% coverage
Capacitance		VR=0V, f =1MHZ	0.07pF (typical)

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 0	Nov. 28, 2014	-	- First issue of this specification

单击下面可查看定价，库存，交付和生命周期等信息

>>Yageo(国巨)