

ETR2902-005

## **Transient Voltage Suppressor (TVS)**

## **■**GENERAL DESCRIPTION

Two elements in USP-3 package (Anode Common) High ESD

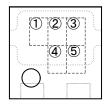
## ■ ABSOLUTE MAXIMUM RATINGS

Ta=25°C

PARAMETER	SYMBOL	RATINGS	UNITS	
Peak Pulse Power (*1)	Ppk	70	W	
Power Dissipation	Pd	120	mW	
Power Dissipation	Fu	1000(*2)	IIIVV	
Junction Temperature	Tj	150	°C	
Storage Temperature Range	Tstg	-55~+150	°C	
ESD Durability (*3)(*4)	Vnn	30	kV	
Contact Discharge	Vpp	30	ΝV	

- (\*1): tp=8/20 \(\mu \s
- (\*2). This is a reference data taken by using the test board.
- (\*3): Test Condition IEC61000-4-2 Standard
- (\*4): Criterion: No damage to device elements

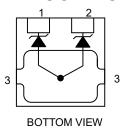
### ■MARKING RULE



123 : BP1(Product Number)

45 : Lot Number

## ■PIN CONFIGURATION



- Cathode

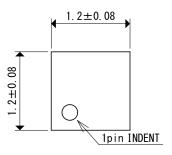
Cathode

Anode

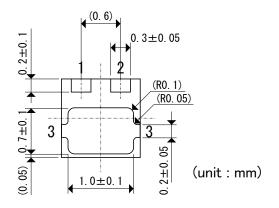
### ■APPLICATIONS

ESD protection

## ■ PACKAGING INFORMATION







USP-3 Package

## **■**PRODUCT NAME

PRODUCT NAME	PACKAGE	ORDER UNIT
XBP06V4E2HR-G*	USP-3	3,000/Reel

<sup>\*</sup>The "-G" suffix indicates that the products are Halogen and Antimony free as well as being fully RoHS compliant.

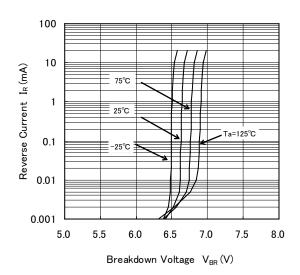
### ■ ELECTRICAL CHARACTERISTICS

Ta=25°C

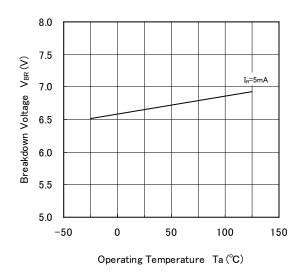
PARAMETER	SYMBOL	TEST CONDITION	LIMITS		LINITO	
PARAMETER	STIVIBUL		MIN.	TYP.	MAX.	UNITS
Breakdown Voltage	$V_{BR}$	I <sub>R</sub> =5mA	6.4	6.8	7.2	V
Leakage Current	I <sub>RM</sub>	V <sub>RM</sub> =5V	-	-	1.0	μΑ
Forward Voltage	VF	I <sub>F</sub> =10mA	-	-	1.25	V
Inter-Terminal Capacity	Ct	V <sub>R</sub> =0V, f=1MHz	-	40	-	pF

## **■**TYPICAL PERFORMANCE CHARACTERISTICS

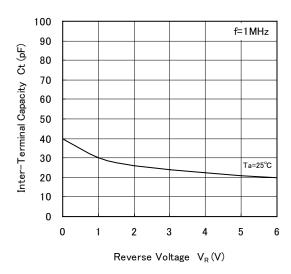
#### (1) Reverse Current vs. Breakdown Voltage



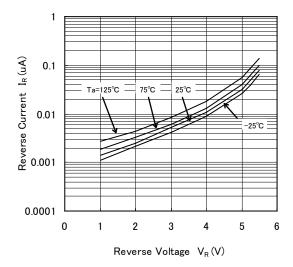
#### (3) Breakdown Voltage vs. Operating Temperature



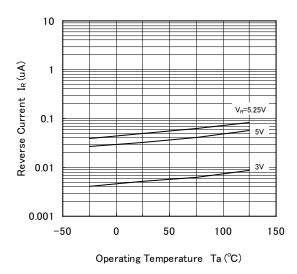
(5) Inter-Terminal Capacity vs. Reverse Voltage



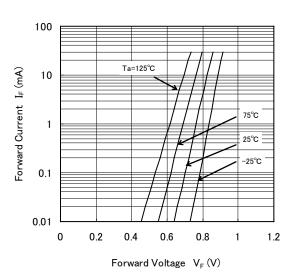
#### (2) Reverse Current vs. Reverse Voltage



#### (4) Reverse Current vs. Operating Temperature



(6) Forward Current vs. Forward Voltage



## **■PACKAGING INFORMATION**

#### USP-3 Power Dissipation

Power dissipation data for the USP-3 is shown in this page.

The value of power dissipation varies with the mount board conditions.

Please use this data as one of reference data taken in the described condition.



Condition: Mount on a board
Ambient: Natural convection
Soldering: Lead (Pb) free

Board: Dimensions 40 x 40 mm (1600 mm<sup>2</sup> in one side)

Copper (Cu) traces occupy 50% of the board area

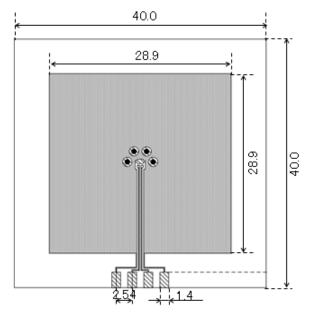
in top and back faces.

Package heat-sink is tied to the copper traces.

Material: Glass Epoxy (FR-4)

Thickness: 1.6 mm

Through-hole: 4 x 0.8 Diameter

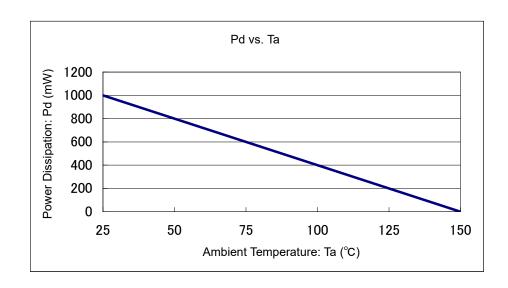


Evaluation Board (Unit: mm)

#### 2. Power Dissipation vs. Ambient temperature

Board Mount (Tj max = 150°C)

Ambient Temperature (°C)	Power Dissipation Pd (mW)	Thermal Resistance (°C/W)	
25	1000	125.00	
150	0	125.00	



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