

# Specification for release

Customer : \_\_\_\_\_  
 Ordercode: **824021**  
 Description: **TVS Diode Array WE-TVS**  
 Package: **SOT23-3L**



DATUM / DATE : 2010-01-27

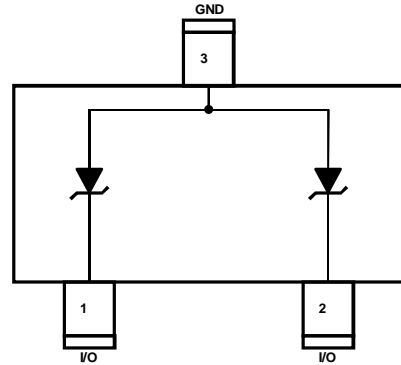
## A Features:

- ESD Protection for 2 Lines - unidirectional
- ESD Protection for 1 Line - bidirectional
- Provide ESD Protection for each line to IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)  
 IEC 61000-4-4 (EFT) 80A (5/50ns)  
 IEC 61000-4-5 (Lightning) 16A (8/20 $\mu\text{s}$ )
- Below 5V operating voltage: 2.5 - 3.3 - 4.2 - 5.0V

## Mechanical Characteristics:

- JEDEC SOT23-3L Package
- Molding compound flamability rating: UL94V-0
- Packaging: Tape & Reel

## B Schematic and Pin Configuration:



## C Absolute Maximum Ratings:

	Symbol	Rating	Unit
Peak Pulse Current (tp = 8/20 $\mu\text{s}$ )	$I_{PP}$	15	A
ESD per IEC 61000-4-2 (Air / Contact), I/O to GND	$V_{ESD}$	30 / 18	kV
ESD per IEC 61000-4-2 (Air / Contact), I/O to I/O	$V_{ESD2}$	30 / 18	kV
Operating Temperature	$T_{Op}$	-55 to +125	$^{\circ}\text{C}$
Storage Temperature	$T_{Sto}$	-20 to +60	$^{\circ}\text{C}$

## D Electrical Characteristics:

Properties	Test Conditions	Value min	Value typ	Value max	Unit
$V_{RWM}$	I/O to GND			5	V
$V_{BV}$	$I_{BV}=1\text{mA}$ , I/O to GND	6.1			V
$I_R$	$V_{RWM}=5\text{V}$ , I/O to GND			2.5	$\mu\text{A}$
$V_F$	$I_F = 15\text{mA}$	0.6	0.8	1	V
$V_C$	$I_{PP}=5\text{A}$ , tp=8/20 $\mu\text{s}$ , I/O to GND		6.5	7	V
$V_{C,I/O}$	$I_{PP}=5\text{A}$ , tp=8/20 $\mu\text{s}$ , I/O to I/O		7	8	V
$V_{Cl,I/O}$	$I_{TLP} = 17\text{A}$ , I/O to GND		10		V
$V_{Cl,VDD}$	$I_{TLP} = 17\text{A}$ , I/O to I/O		12		V
$C_{IO}$	$V_{IO}=0\text{V}$ , f=1MHz, I/O to GND		55	70	pF
$C_X$	$V_{IO}=0\text{V}$ , f=1MHz, I/O to I/O		27.5	35	pF

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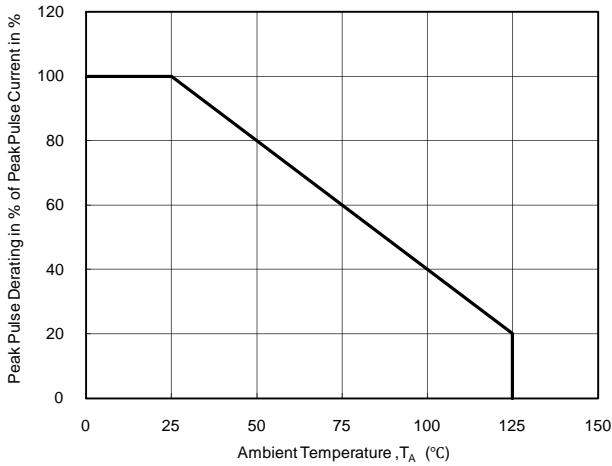
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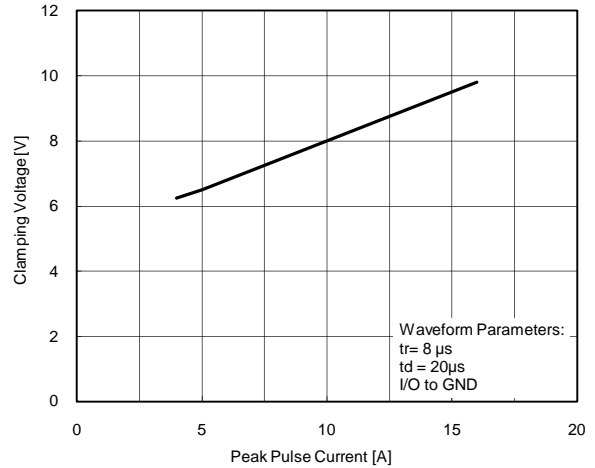


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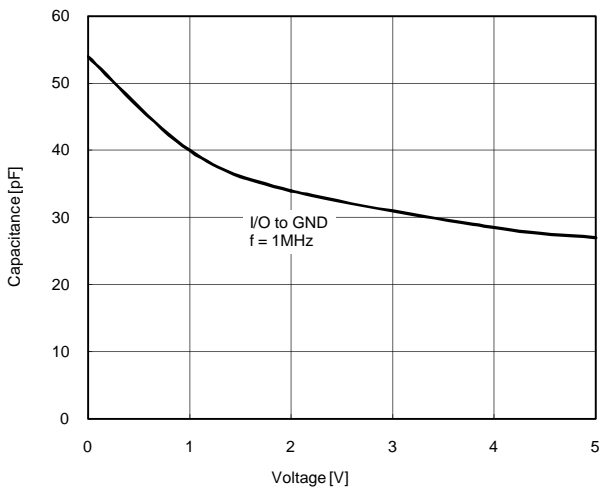
## E Typical Characteristics:



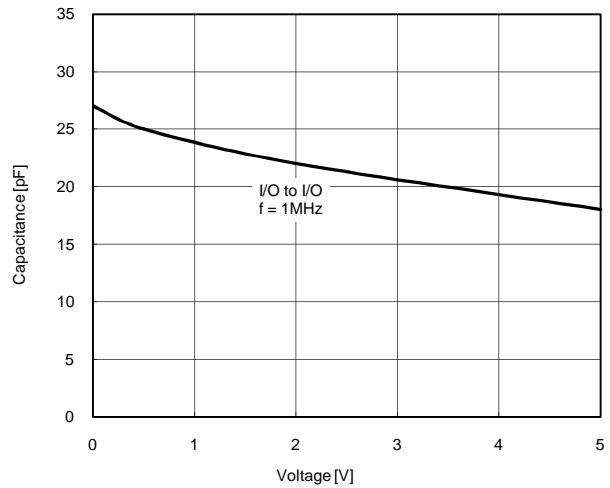
**Power Derating Curve**



**Clamping Voltage vs. Peak Pulse Current**



**Variation of  $C_{IO}$  vs.  $V_{IO}$**



**Variation of  $C_X$  vs.  $V_{IO}$**

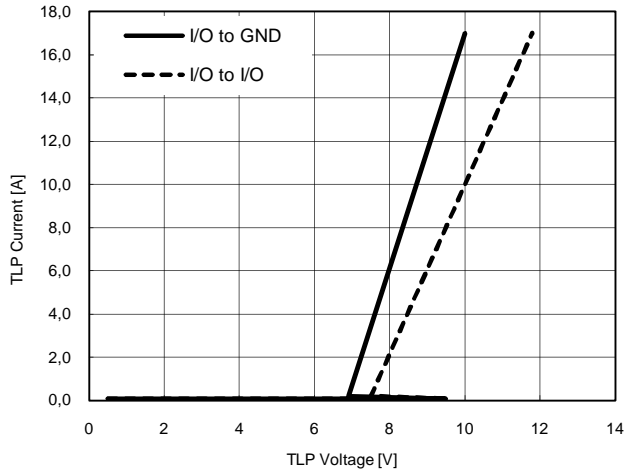
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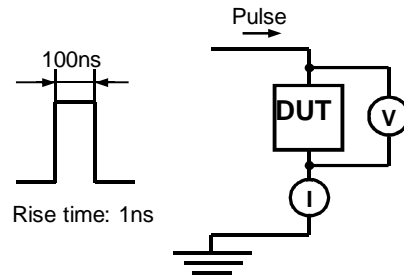


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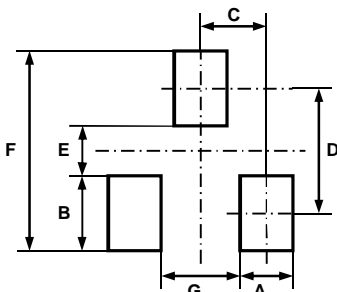


Transmission Line Pulsing (TLP) Measurement



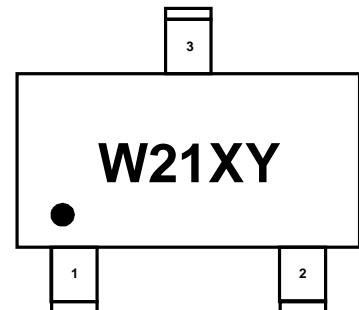
Transmission Line Pulsing System

## F Recommended Land Layout:



A	0.9	mm
B	1.4	mm
C	0.95	mm
D	2.1	mm
E	0.7	mm
F	3.5	mm
G	1.0	mm

## G Body Marking:



W21: Device Code

X: Date Code

Y: Control Code

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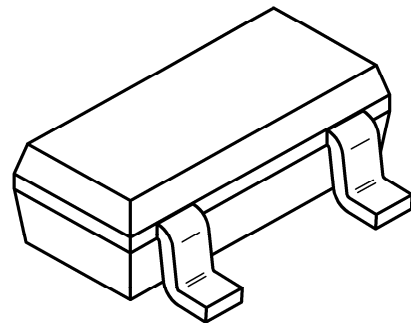
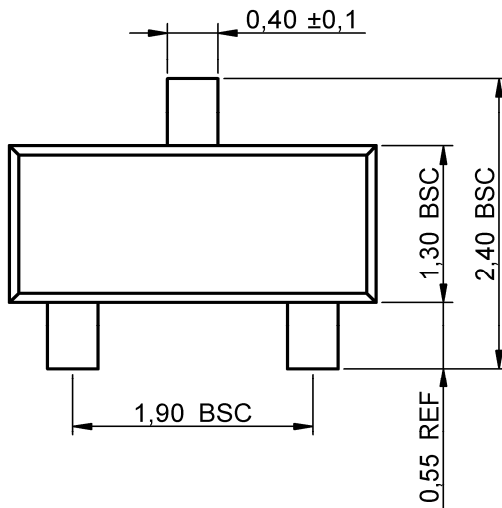
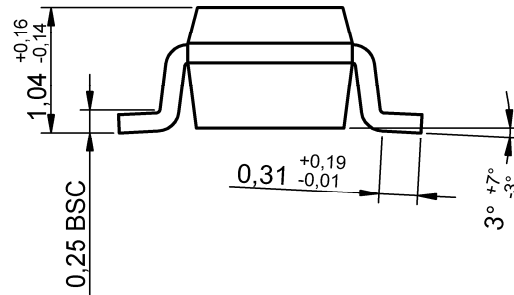
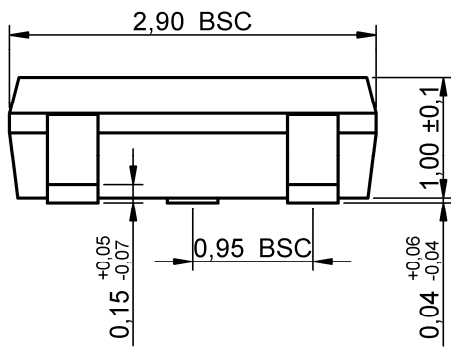
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**WÜRTH ELEKTRONIK**

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## H Dimensions:



Scale - 10:1

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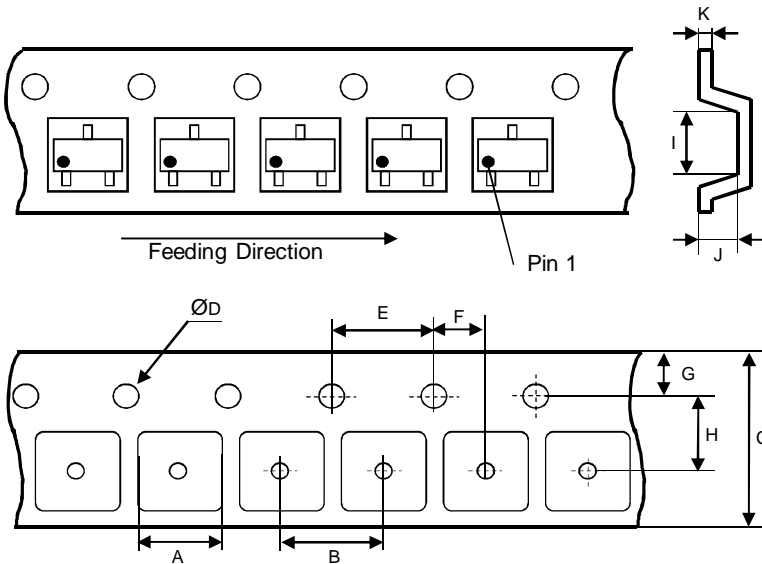
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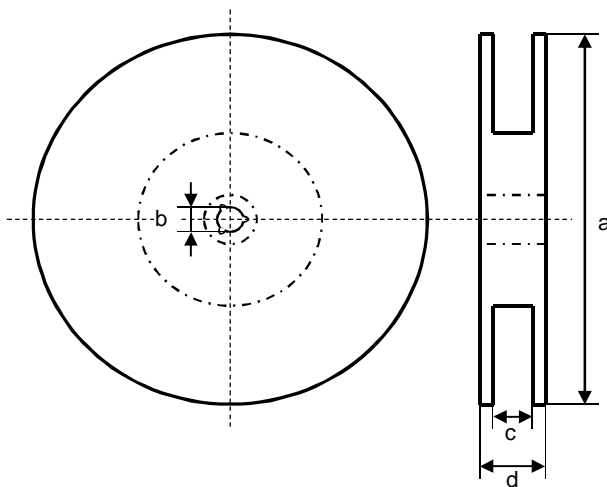


## I Tape:

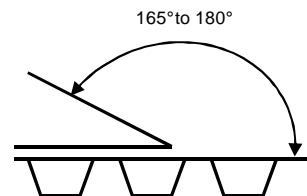


A	<b>4.00 ± 0.10</b>	mm
B	<b>4.00 ± 0.10</b>	mm
C	<b>8.00 ± 0.20</b>	mm
D	<b>1.55 ± 0.05</b>	mm
E	<b>4.00 ± 0.10</b>	mm
F	<b>2.00 ± 0.05</b>	mm
G	<b>1.75 ± 0.10</b>	mm
H	<b>3.50 ± 0.05</b>	mm
I	<b>3.25 ± 0.15</b>	mm
J	<b>1.35 ± 0.15</b>	mm
K	<b>0.25 ± 0.02</b>	mm

## J Reel:



a	<b>178.0 ± 2.0</b>	mm
b	<b>13.0 ± 0.8</b>	mm
c	<b>10.0 ± 1.5</b>	mm
d	<b>12.5 ± 2.0</b>	mm



Quantity per Reel: 3000

General Release:	Customer			
	Date	Signature		
Checked	Würth Elektronik	JB	new technical drawing	2010-01-27
		JB	Changed Name VDD to GND	2009-02-03
		JB	Version 1	2008-10-13
	Approved	Name	Modification	Date

This electronic component has been designed and developed for usage in general electronic equipment. Before incorporating this component into any equipment where higher safety and reliability is especially required or if there is the possibility of direct damage or injury to human body, for example in the range of aerospace, aviation, nuclear control, submarine, transportation, (automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network etc, Würth Elektronik eiSos GmbH must be informed before the design-in stage. In addition, sufficient reliability evaluation checks for safety must be performed on every electronic component which is used in electrical circuits that require high safety and reliability functions or performance.

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