

# Specification for release - Preliminary

Customer : \_\_\_\_\_  
 Ordercode: **82400152**  
 Description: **TVS Diode Array WE-TVS**  
 Package: **SOT563**



DATUM / DATE : 2010-01-27

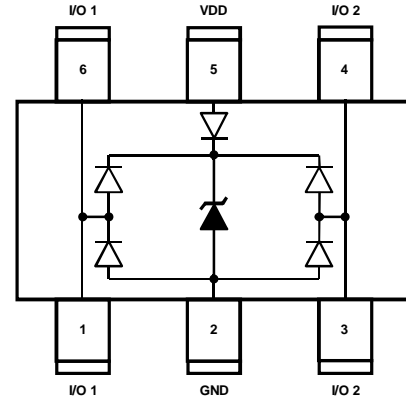
## A Features:

- ESD Protection for 2 high-speed I/O channels and VDD
- Provide ESD protection for each channel to  
 IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)  
 IEC 61000-4-4 (EFT) (5/50ns) 20A (I/O), 40A (VDD)  
 IEC 61000-4-5 (Lightning) 6A (8/20 $\mu\text{s}$ )
- Below 5V operating voltage: 2.5 - 3.3 - 4.2 - 5.0V
- Ultra Low capacitance: 2.0pF typical

## Mechanical Characteristics:

- SOT563 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 $\mu\text{s}$ )	$I_{PP}$	6	A
Operating Supply Voltage, VDD to GND	$V_{DC}$	6	V
ESD per IEC 61000-4-2 (Air / Contact), I/O to GND	$V_{ESD,IO}$	15 / 8	kV
ESD per IEC 61000-4-2 (Air / Contact), VDD to GND	$V_{ESD,VDD}$	15 / 8	kV
DC Voltage at any I/O Pin	$V_{IO}$	(GND -0,5) to (VDD +0,5)	V
Operating Temperature	$T_{Op}$	-40 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
$V_{RWM}$	Pin 5 to Pin 2			5	V
$V_{BV}$	$I_{BV}=1\text{mA}$ , Pin 5 to Pin 2	6.0			V
$I_R$	$V_{Pin5}=5\text{V}$ , Pin 5 to Pin 2			5	$\mu\text{A}$
$I_{R,IO}$	$V_{Pin5}=5\text{V}$ , $V_{Pin2}=0\text{V}$ , I/O to GND			1	$\mu\text{A}$
$V_F$	$I_F = 15\text{mA}$ , Pin 2 to Pin 5		0.8	1.0	V
$V_C$	$I_{PP}=5\text{A}$ , tp=8/20 $\mu\text{s}$ , I/O to GND		7.7		V
$V_{CL,IO}$	$I_{TLP} = 17\text{A}$ , I/O to GND		10.0		V
$V_{CL,VDD}$	$I_{TLP} = 17\text{A}$ , VDD to GND		9.2		V
$C_{IO}$	$V_{Pin5}=5\text{V}$ , $V_{Pin2}=0\text{V}$ , $V_{IO}=2.5\text{V}$ , f=1MHz, I/O to GND		2.0	2.5	pF
$C_X$	$V_{Pin5}=5\text{V}$ , $V_{Pin2}=0\text{V}$ , $V_{IO}=2.5\text{V}$ f=1MHz, between I/O pins		0.4	0.6	pF

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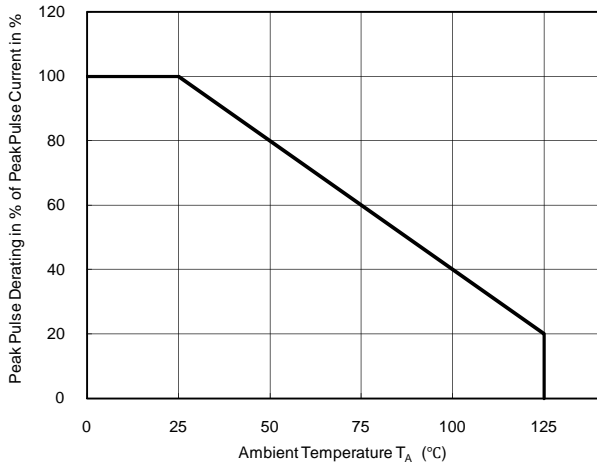
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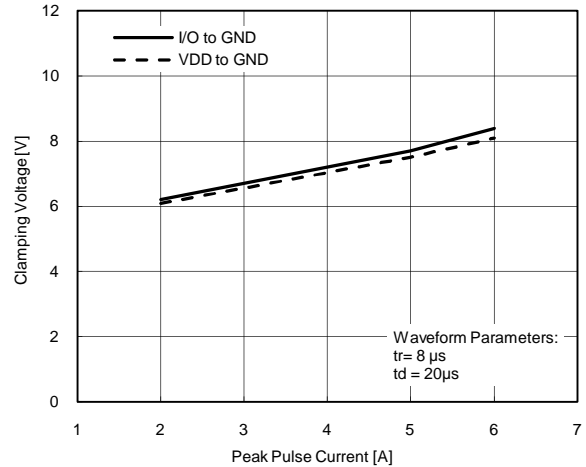


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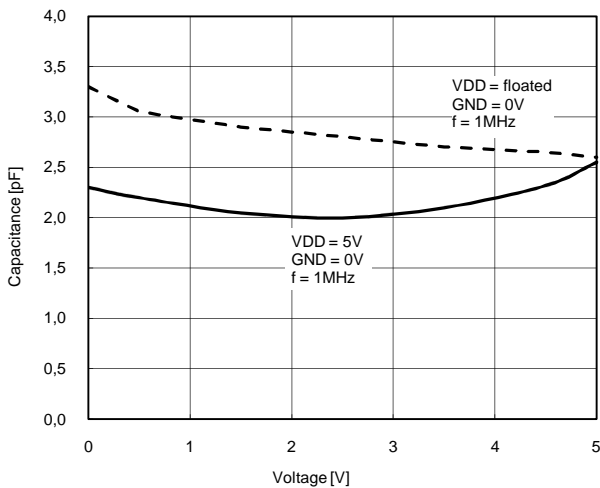
## E Typical Characteristics:



**Power Derating Curve**



**Clamping Voltage vs. Peak Pulse Current**



**Variation of C<sub>IO</sub> vs. V<sub>IO</sub>**

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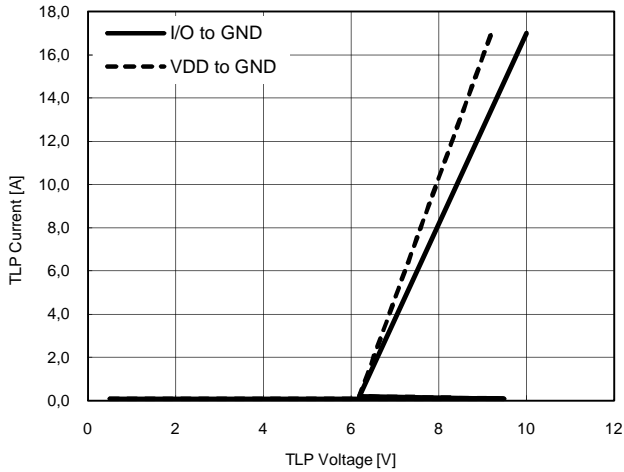
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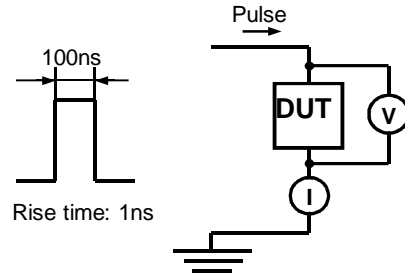
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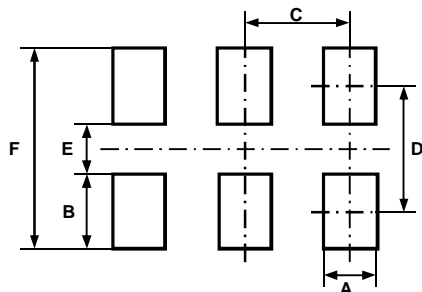


Transmission Line Pulsing (TLP) Measurement



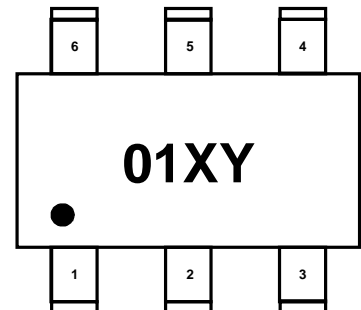
Transmission Line Pulsing System

## F Recommended Land Layout:



A	0.30	mm
B	0.5	mm
C	0.5	mm
D	1.4	mm
E	0.90	mm
F	1.90	mm

## G Body Marking:



01: Device Code

X: Date Code

Y: Control Code

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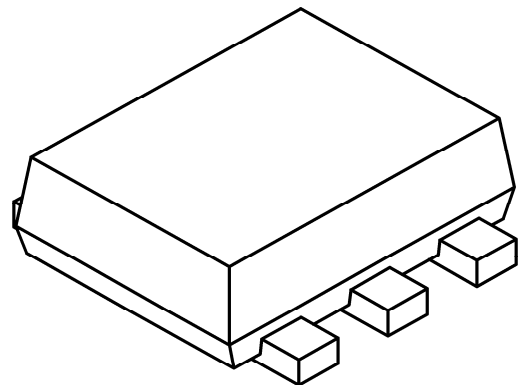
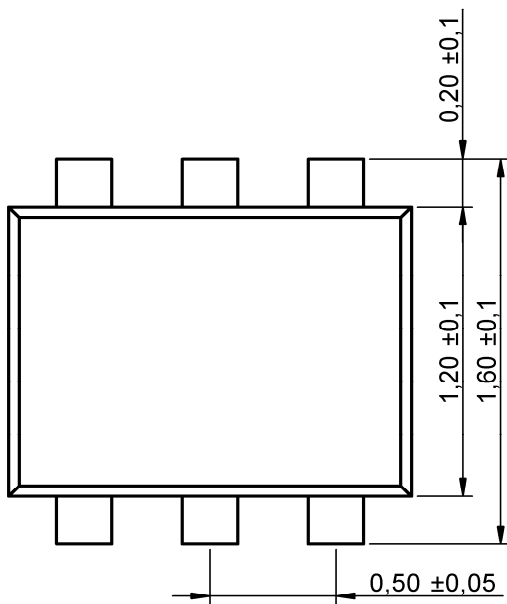
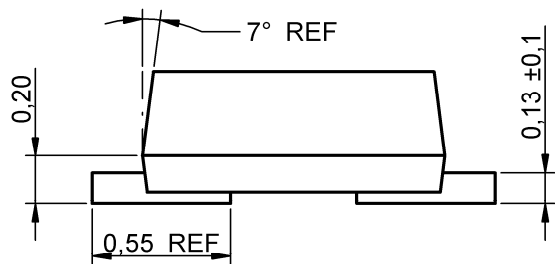
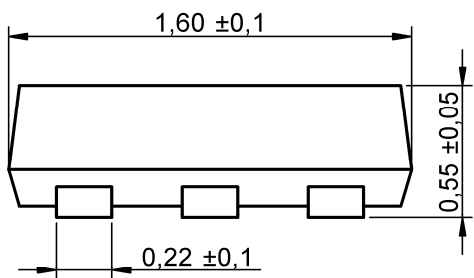
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## H Dimensions:



Scale - 20:1

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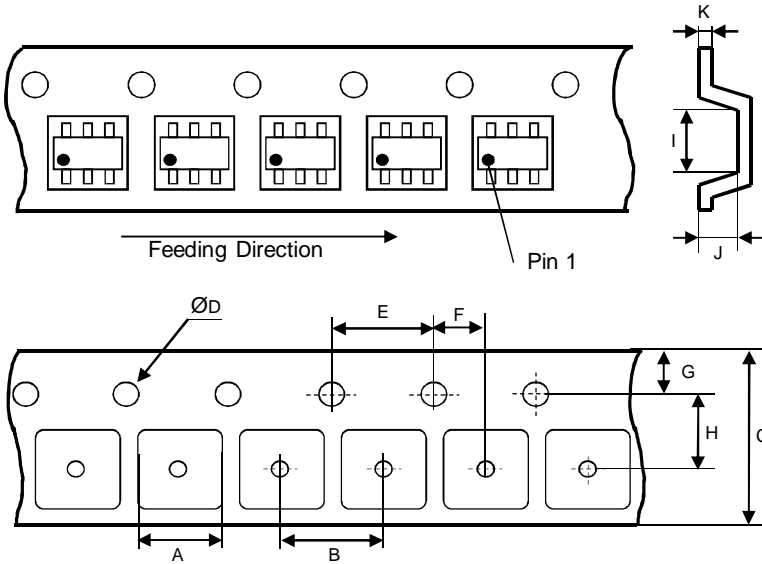
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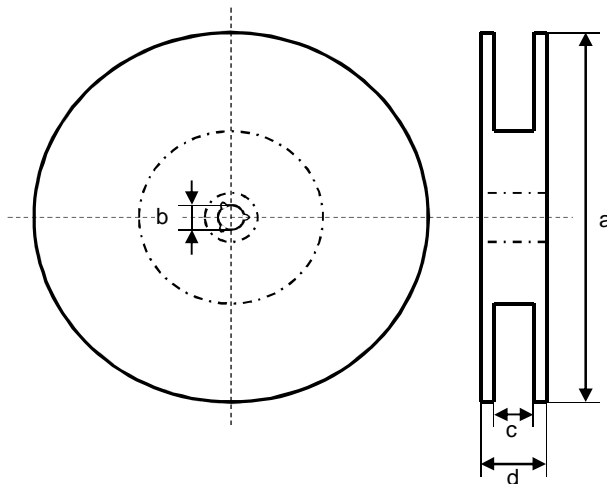


## I Tape:

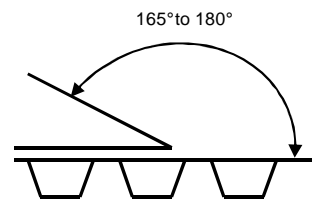


A	<b>2.25 REF</b>	mm
B	<b>4.00 ± 0.10</b>	mm
C	<b>8.00 ± 0.20</b>	mm
D	<b>1.55 ± 0.05</b>	mm
E	<b>4.00 ± 0.10</b>	mm
F	<b>2.00 ± 0.05</b>	mm
G	<b>1.75 ± 0.10</b>	mm
H	<b>3.50 ± 0.05</b>	mm
I	<b>2.4 REF</b>	mm
J	<b>1.2 REF</b>	mm
K	<b>0.30 ± 0.02</b>	mm

## 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		
	Würth Elektronik		
.....	.....		
Checked	Approved	JB	Version 1
		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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