WHALD30E2B Series

Product Datasheet

ESD Protection Diodes Array

1.Description

The WHALD30E2B series transient voltage suppressor arrays, designed to protect applications such as computers, communication system and other applications. This series is available in bidirectional configurations and is rated at 440 Watts for an 8/20μs waveshape. This series offers a low leakage current in a SOT-23 package.



2.Features

- IEC 61000-4-2 (ESD)
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 440W Peak pulse Power (8/20us)
- IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- Halogen free and RoHS compliant
- Protects two bidirectional lines
- Low clamping voltage
- Low leakage current

3.Mechanical Data

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants
- Notebooks / Desktops / Servers
- Portable Instrumentation
- Peripherals & Pagers

4.Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
WHALD30E2B	SOT-23	Z27	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

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5.Pin Configuration and Functions

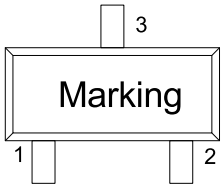
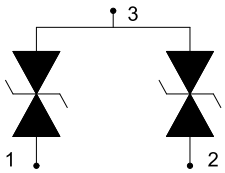
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	IO	Connect to IO		
3	GND	Connect to GND		

Table-2 Pin configuration

6. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	440	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}	-	8	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±30	kV
Junction temperature	T_J	-	125	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3 Absolute Maximum rating

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7.Electrical Characteristics

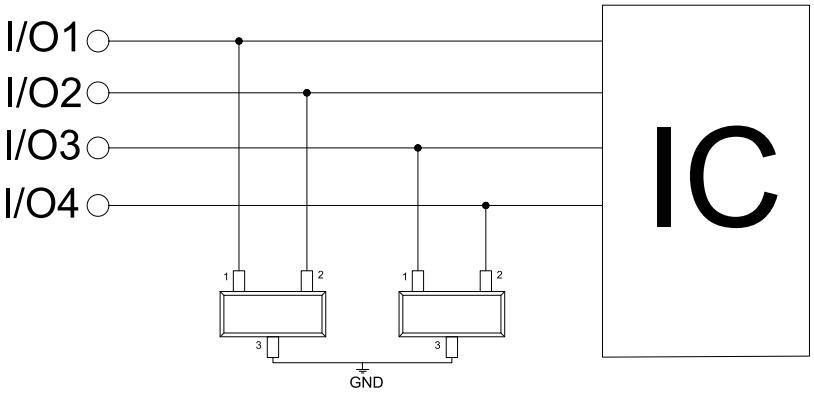
At TA = 25℃ unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				30	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA	31			V
Reverse Leakage Current	I_R	V_{RWM}=24V			1	uA
Clamping Voltage	V_C	I_{PP}=1A; tp=8/20us		37		V
Clamping Voltage	V_C	I_{PP}=8A; tp=8/20us		55		V
Junction Capacitance	C_J	I/O to GND; VR=0V; f=1MHz		0.9		pF

Table-4 Electrical Characteristics for All Series

8.Typical Application

Typical Interface Application



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9.Ratings and Characteristic Curves (TA =25℃ unless otherwise noted)

Figure 1. Pulse rating curve

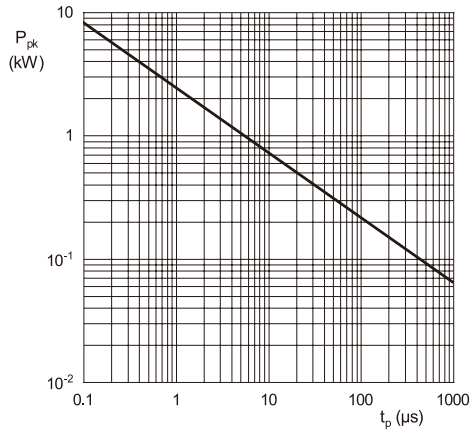


Figure 2 Peak pulse power derating curve

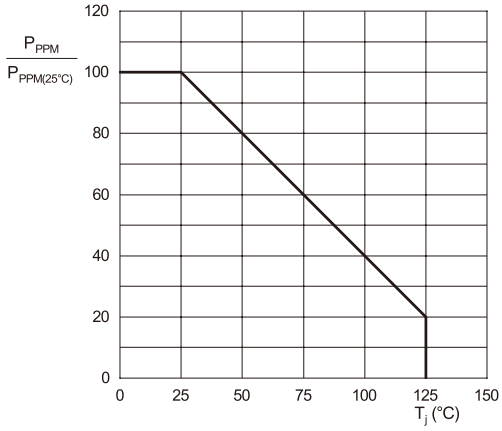


Figure 3 Pulse waveform

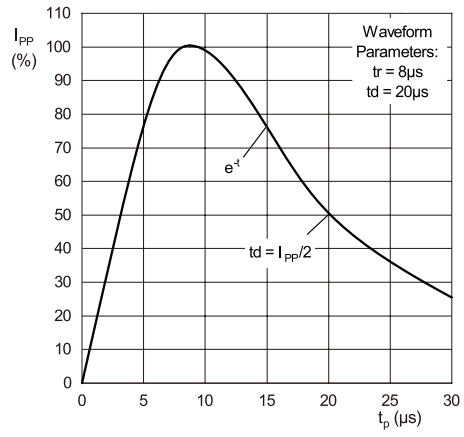
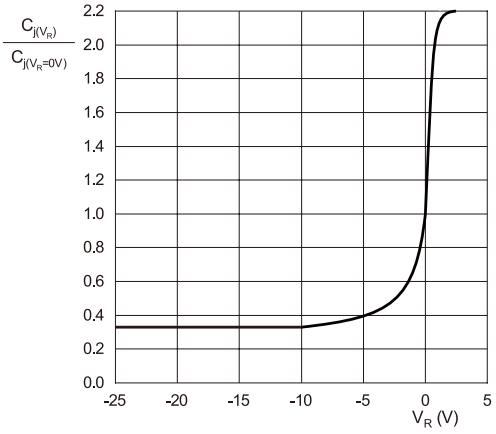


Figure 4 Capacitance vs reverse voltage

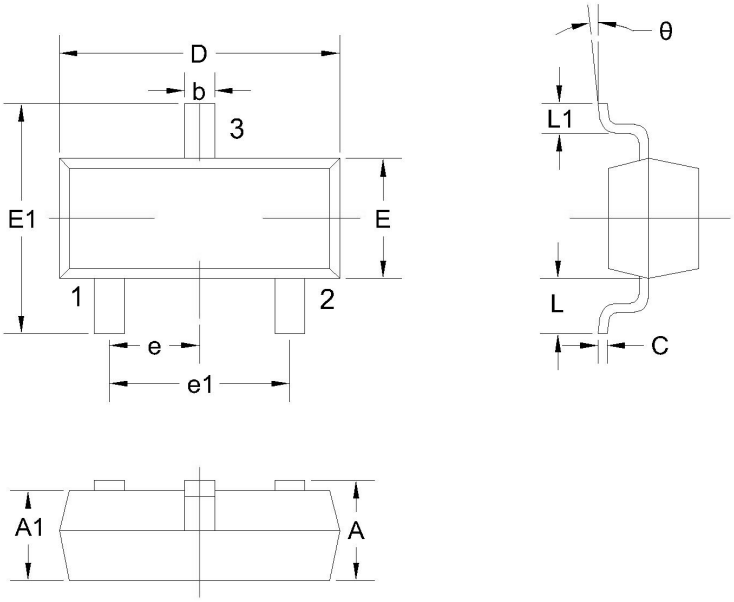


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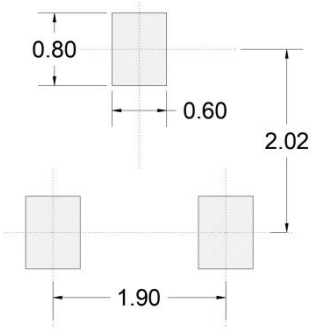
10.Dimension



Dimensions in Millimeters					
Symbol	Min.	Max.	Symbol	Min.	Max.
A	0.9	1.15	e1	1.80	2.00
A1	0.9	1.05	L	0.55REF	
b	0.30	0.50	L1	0.30	0.50
C	0.08	0.15	θ	0°	8°
D	2.80	3.00			
E	1.20	1.40			
E1	2.25	2.55			
e	0.95TYP				

Table-5 Product dimensions

11.Recommended Land Pattern



Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference only