



# PJE24HWS SERIES

## SINGLE LINE TVS DIODE FOR ESD PROTECTION PORTABLE ELECTRONICS

**VOLTAGE** 24~48 Volt **IPP** 8.5~14 Ampere

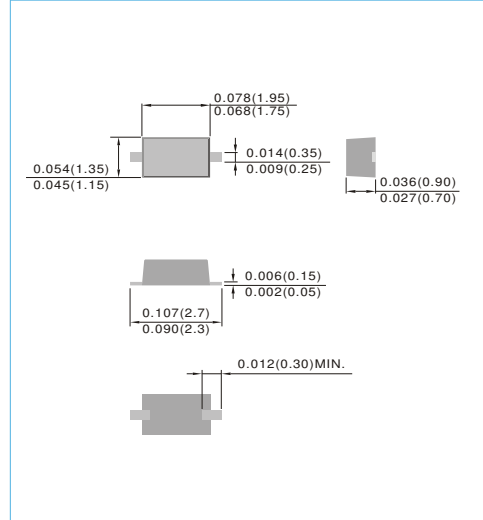
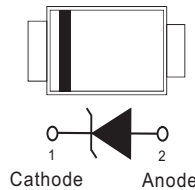
**SOD-323** Unit : inch(mm)

### FEATURES

- Small package for use in portable electronics
- Suitable replacement for MLV'S in ESD protection applications
- Low clamping voltage and leakage current
- High surge capability
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case : SOD-323, Molded plastic over passivated junction
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx Weight : 0.00014 ounces, 0.0041 grams



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value	Units
Operating Temperature And Storage Temperature	$T_J, T_{STG}$	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ\text{C}$ )

#### PJE24HWS Marking QM

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage (Notes 4)	$V_{RRM}$	-	-	-	24	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1\text{mA}$	26	-	30	V
Reverse Leakage Current	$I_R$	$V_R=24\text{V}$	-	-	1	$\mu\text{A}$
ESD Voltage (Air, Contact Mode)	$V_{ESD}$	-	-	-	30(Contact) 30(Air)	kV
Clamping Voltage ( $t_p=8/20\mu\text{s}$ ) (Notes 1,2,3)	$V_C$	$I_{pp}=14\text{A}$	-	-	45	V
Off State Junction Capacitance	$C_J$	0Vdc Bias, $f=1\text{MHz}$	-	-	100	pF

#### NOTES :

1. Non-repetitive current pulse.
2. Mounted on copper pads to each terminal.
3. Peak pulse power waveform is  $t_p=8/20\mu\text{s}$ .
4. A transient suppressor is selected according to the working peak reverse voltage ( $V_{RRM}$ ), which should be equal to or greater than the DC or continuous peak operating voltage level.



# PJE24HWS SERIES

## PJE36HWS Marking JE4

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage (Notes 4)	$V_{RRM}$	-	-	-	36	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1mA$	40	-	44.2	V
Reverse Leakage Current	$I_R$	$V_R=36V$	-	-	1	$\mu A$
ESD Voltage (Air, Contact Mode)	$V_{ESD}$	-			30(Contact) 30(Air)	kV
Clamping Voltage ( $t_p=8/20\mu s$ ) (Notes 1,2,3)	$V_C$	$I_{PP}=8.5A$	-	-	70	V
Off State Junction Capacitance	$C_J$	0Vdc Bias, $f=1MHz$	-	-	75	pF

## PJE48HWS Marking JE3

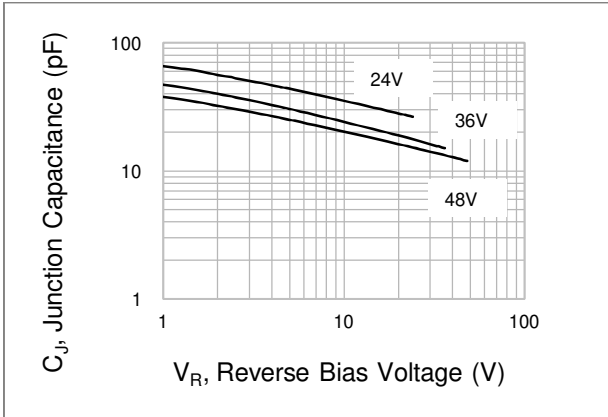
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage (Notes 4)	$V_{RRM}$	-	-	-	48	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1mA$	53.3	-	58.9	V
Reverse Leakage Current	$I_R$	$V_R=48V$	-	-	1	$\mu A$
ESD Voltage (Air, Contact Mode)	$V_{ESD}$	-			30(Contact) 30(Air)	kV
Clamping Voltage ( $t_p=8/20\mu s$ ) (Notes 1,2,3)	$V_C$	$I_{PP}=6.5A$	-	-	80	V
Off State Junction Capacitance	$C_J$	0Vdc Bias, $f=1MHz$	-	-	60	pF

NOTES :

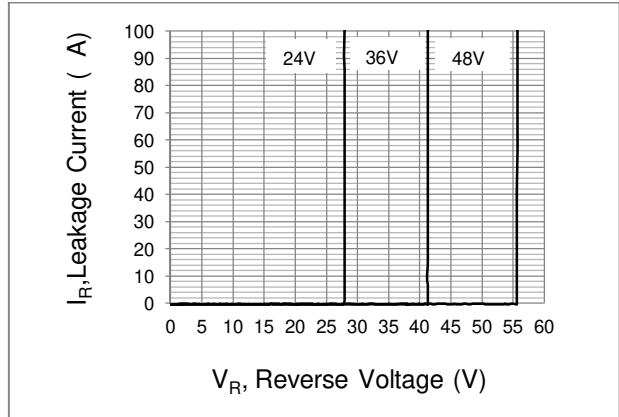
1. Non-repetitive current pulse.
2. Mounted on copper pads to each terminal.
3. Peak pulse power waveform is  $t_p=8/20\mu s$ .
4. A transient suppressor is selected according to the working peak reverse voltage ( $V_{RRM}$ ), which should be equal to or greater than the DC or continuous peak operating voltage level.



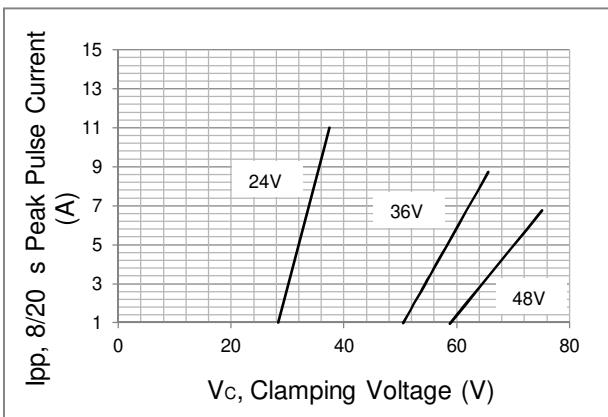
# PJE24HWS SERIES



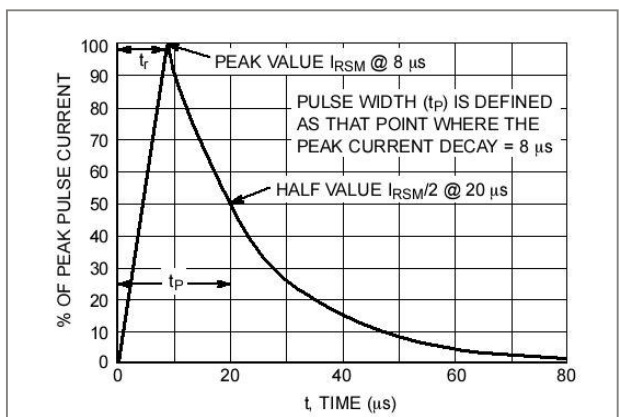
**Fig.1 Typical Junction Capacitance**



**Fig.2 Typical Reverse Characteristics**



**Fig.3 Typical Peak Clamping Voltage**

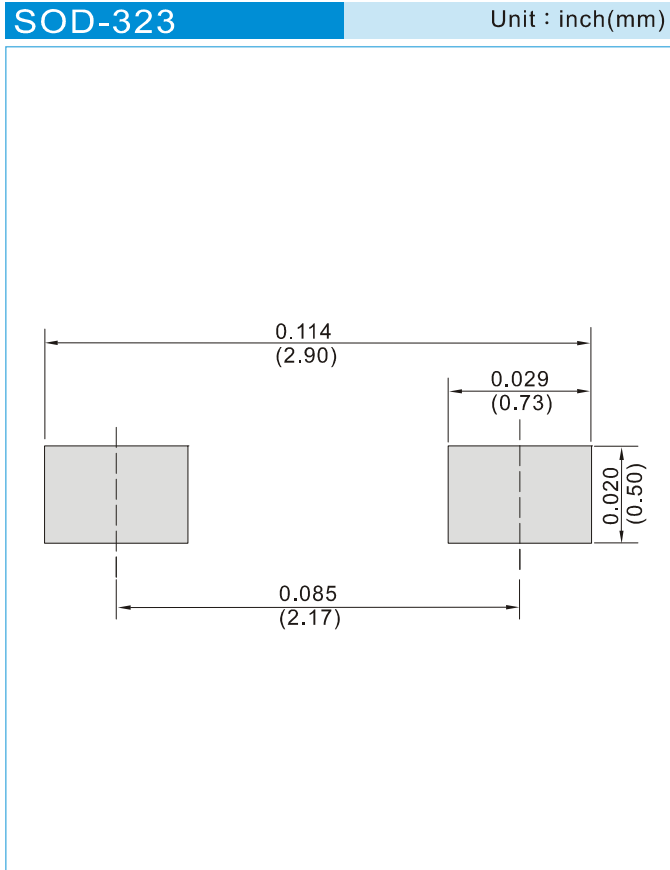


**Fig.4 8/20 S Peak Pulse Current Waveform**



# PJE24HWS SERIES

## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R - 12K per 13" plastic Reel  
T/R - 5K per 7" plastic Reel



# PJE24HWS SERIES

## Part No\_packing code\_Version

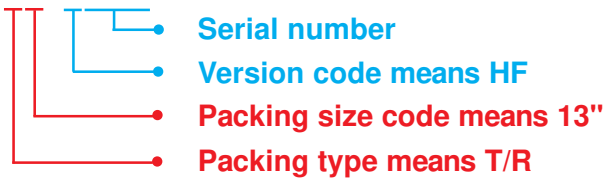
PJE24HWS\_R1\_00001

PJE24HWS\_R2\_00001

For example :

**RB500V-40** **R2** **00001**

Part No.



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



## PJE24HWS SERIES

---

### Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.