

# PJE24HWS SERIES

## SINGLE LINE TVS DIODE FOR ESD PROTECTION PORTABLE ELECTRONICS

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

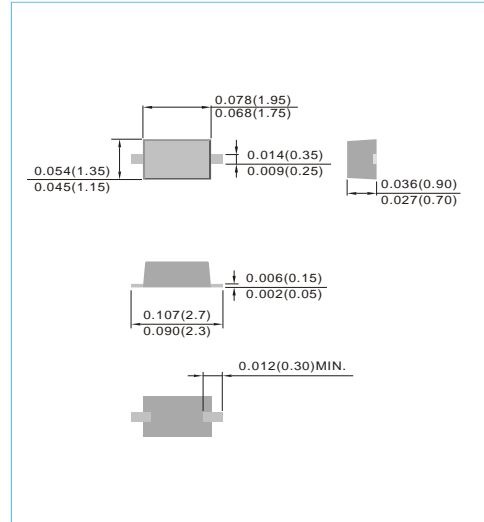
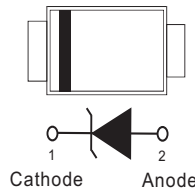
**SOD-323** Unit : inch(mm)

### 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

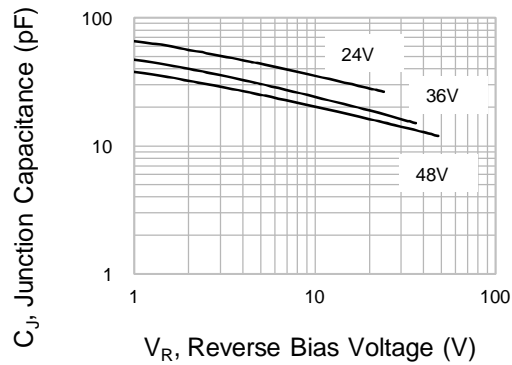
## PJE48HWS Marking JE3

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

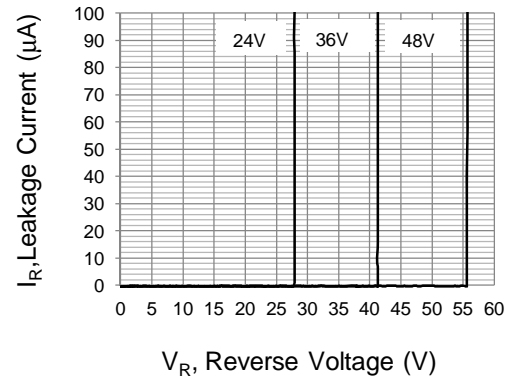
### NOTES :

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.

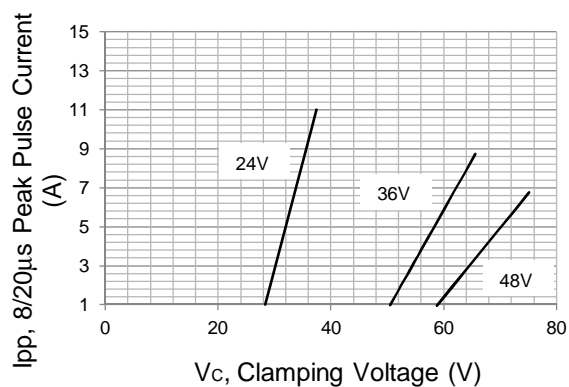
## PJE24HWS SERIES



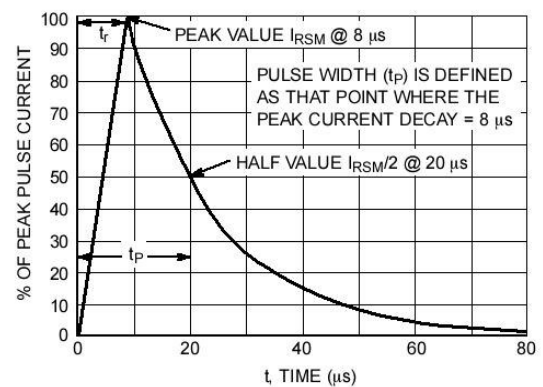
**Fig.1 Typical Junction Capacitance**



**Fig.2 Typical Reverse Characteristics**



**Fig.3 Typical Peak Clamping Voltage**



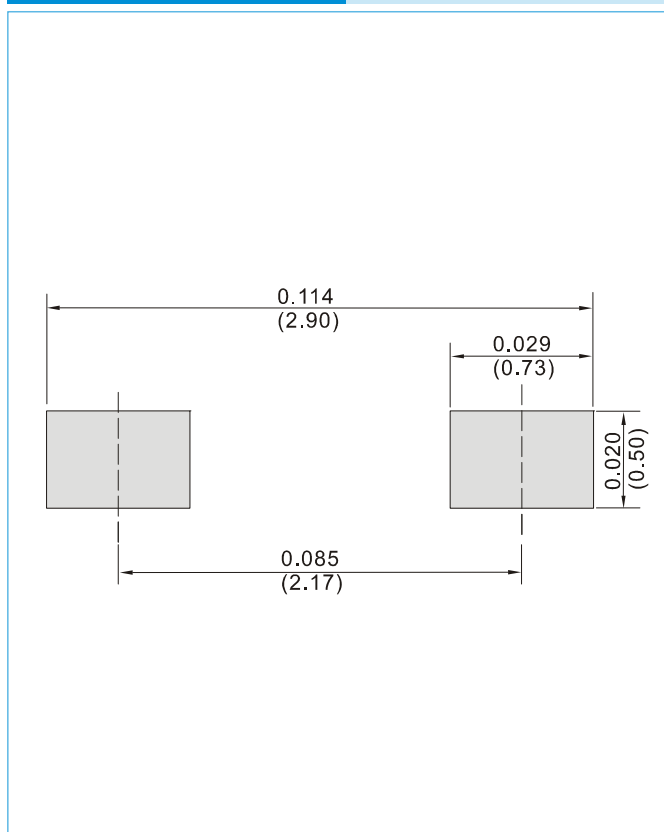
**Fig.4 8/20 $\mu$ S Peak Pulse Current Waveform**

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## MOUNTING PAD LAYOUT

SOD-323

Unit : inch(mm)



## 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.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

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>			



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