



# PJEC12VM1TA

## ESD Protection

$V_{RWM}$

**12 V**

### Features

- Bidirectional ESD protection of one line
- IEC61000-4-2(ESD):  $\pm 15\text{kV}$  Air,  $\pm 8\text{kV}$  Contact Compliance with the capability up to  $\pm 30\text{kV}$
- IEC61000-4-4(EFT):  $40\text{A}(5/50\text{nS})$
- IEC61000-4-5(Lightning):  $3\text{A}(8/20\mu\text{S})$
- Low leakage current, maximum of  $0.05\mu\text{A}$  at rated voltage
- Lead free in compliance with EU RoHS 2011/65/EU directive.
- Green molding compound as per IEC61249 Std.  
(Halogen Free)

### Mechanical Data

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.008 grams
- Marking: 12W

### Applications

- Computers and peripherals
- Audio and video equipment
- Communication systems
- Control Signal Lines Protection
- Digital Cameras

**SOT-23**

Unit : inch(mm)

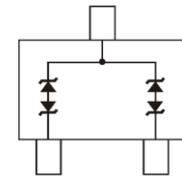
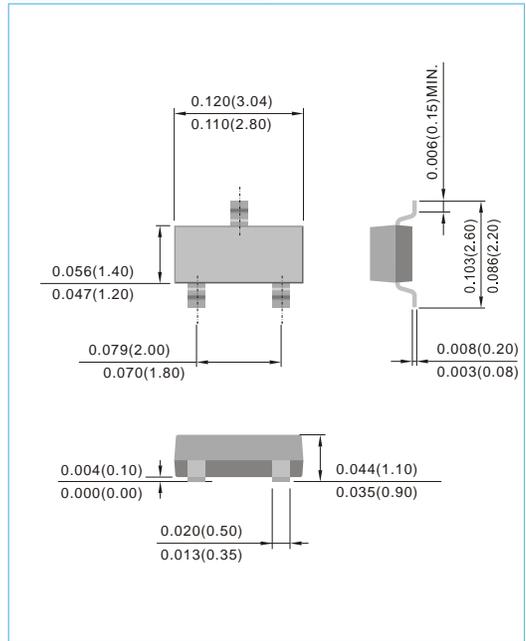


Fig.84(Top View)

### Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air)	$V_{ESD}$	$\pm 30$	kV
ESD IEC61000-4-2(Contact)		$\pm 30$	
Operating Junction Temperature	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$



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Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	-	12	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1\text{mA}$ , Between any I/O pins to GND	14	-	16.5	V
Reverse leakage current	$I_R$	$V_R=12\text{V}$	-	-	0.05	$\mu\text{A}$
Clamping Voltage	$V_{CL}$	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$	-	-	19	V
		$I_{PP}=3\text{A}$ , $t_p=8/20\mu\text{s}$	-	-	25	
Clamping Voltage TLP <sup>(Note 1)</sup>	$V_{CL}$	$I_{PP}=4\text{A}$ , $t_p=100\text{ns}$	-	17.7	-	V
		$I_{PP}=8\text{A}$ , $t_p=100\text{ns}$	-	19.5	-	
Dynamic Resistance	$R_{DYN}$	$t_p=100\text{ns}$	-	0.45	-	$\Omega$
Off State Junction Capacitance	$C_J$	0Vdc Bias $f=1\text{MHz}$	-	-	10	pF

NOTES :

1. Testing using Transmission Line Pulse (TLP) conditions:  $Z_0 = 50\Omega$  ,  $t_p = 100\text{ ns}$ .



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## TYPICAL CHARACTERISTIC CURVES

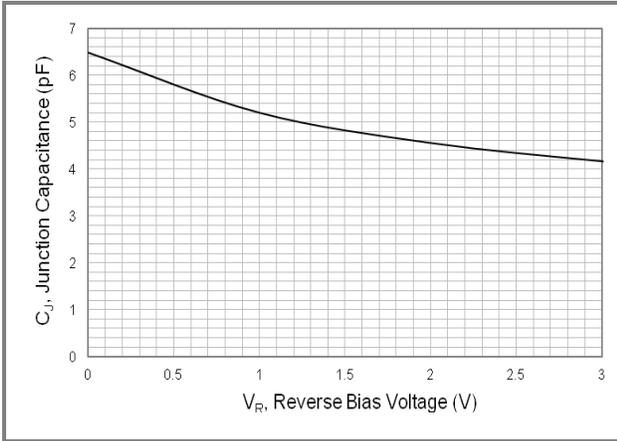


Fig.1 Typical Junction Capacitance

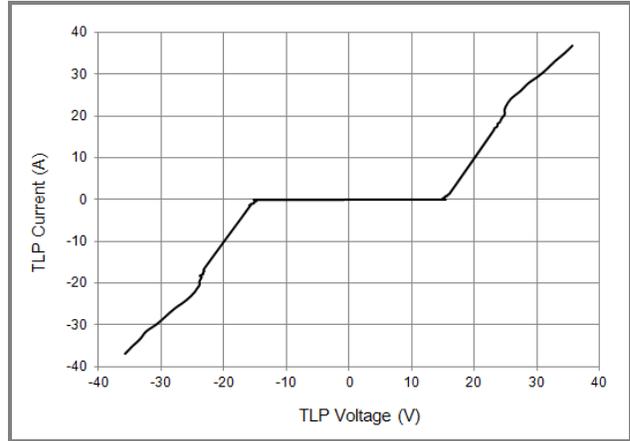


Fig.2 Transmission Line Pulsing (TLP) Measurement

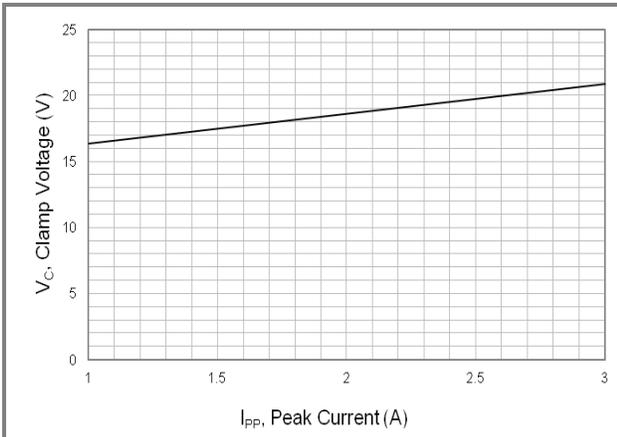


Fig.3 Typical Peak Clamping Voltage(8/20 $\mu$ s)

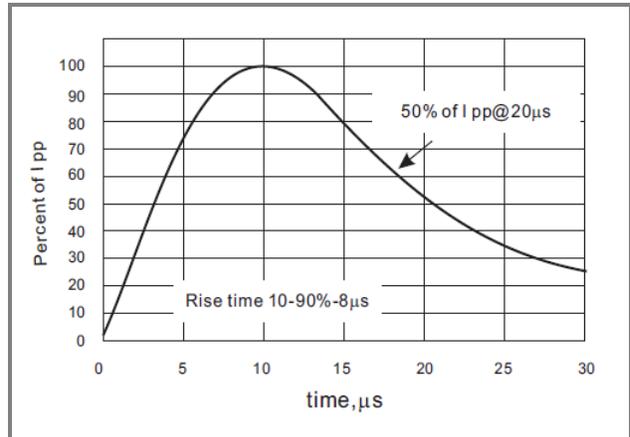


Fig.4 8/20 $\mu$ s Pulse Waveform

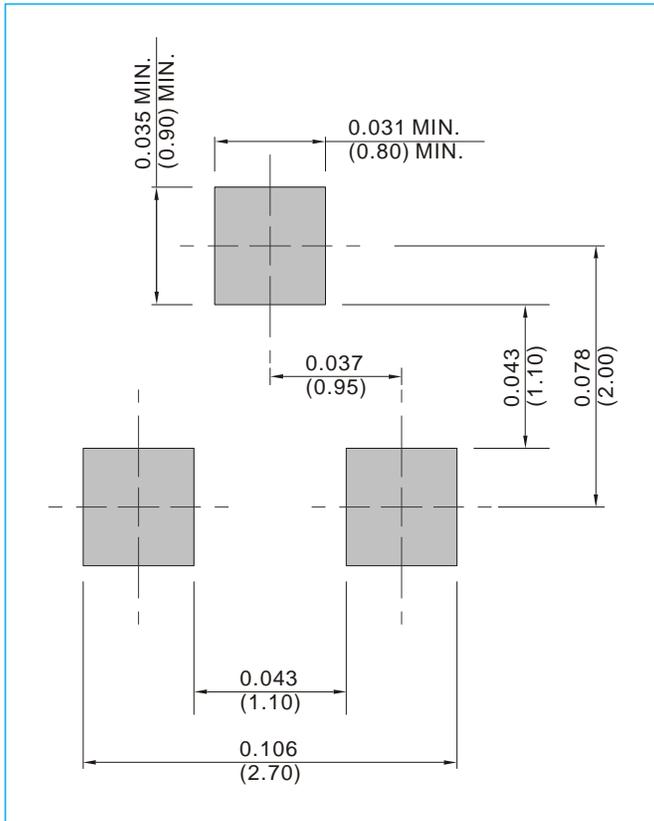


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## MOUNTING PAD LAYOUT

**SOT-23**

Unit : inch(mm)



## ORDER INFORMATION

- Packing information  
T/R – 12K per 13" plastic Reel  
T/R – 3K per 7" plastic Reel



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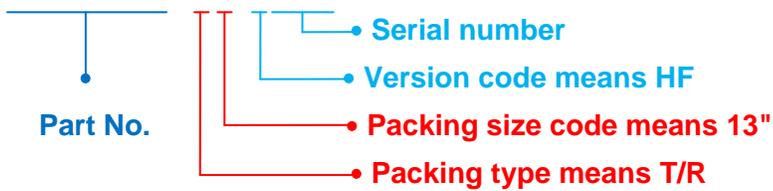
**Part No\_packing code\_Version**

PJEC12VM1TA\_R1\_00001

PJEC12VM1TA\_R2\_00001

**For example :**

**RB500V-40\_R2\_00001**



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)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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