

## FEATURES

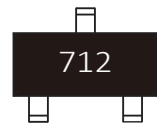
- | 400W Peak Pulse Power per Line ( $t_p=8/20\mu s$ )
- | Protects two +12V to -7V lines
- | Low clamping voltage
- | Moisture sensitivity level: Level 1
- | Weight 8 Milligrams (Approximate)

## APPLICATIONS

- | Protection of RS-485 transceivers with extended common-mode range
- | Security systems
- | Automatic Teller Machines
- | HFC systems
- | Networks



SOT-23



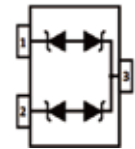
Marking

## IEC COMPATIBILITY

- | IEC61000-4-2 (ESD)  $\pm 25kV$  (air),  $\pm 25kV$  (contact)
- | IEC61000-4-4 (EFT) 40A (5/50ns)

## APPROVALS

- |             |                                    |
|-------------|------------------------------------|
| <b>RoHS</b> | Compliance with 2011/65/EU         |
| <b>HF</b>   | Compliance with IEC61249-2-21:2003 |



Schematic Symbol

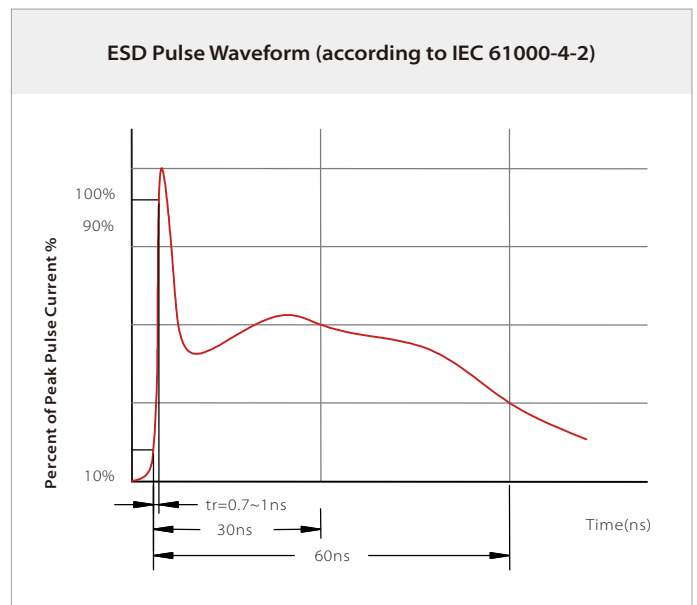
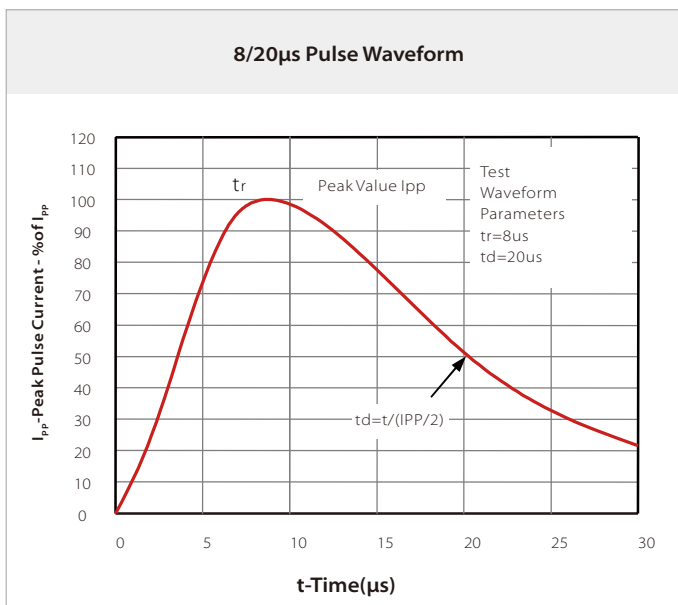
## THERMAL CONSIDERATIONS

Symbol	Parameter	Value	Unit
$P_{PP}$	Peak Pulse Power ( $t_p=8/20\mu s$ waveform)	400	Watts
$T_J$	Operating Temperature Range	-55 to +150	$^{\circ}C$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^{\circ}C$
$T_L$	Lead Soldering Temperature	260(10 sec.)	$^{\circ}C$

## ELECTRICAL CHARACTERISTICS

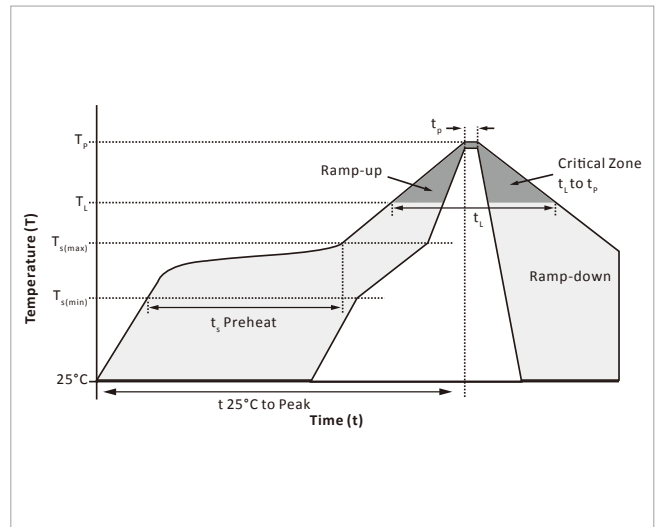
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
$V_{RWM}$	Reverse Stand-off Voltage	Pin 3-1 & Pin 3-2			7	V
		Pin 1-3 & Pin 2-3			12	
$V_{BR}$	Reverse Breakdown Voltage	Pin 3-1 & Pin 3-2	$I_T=1mA$	7.5		V
		Pin 1-3 & Pin 2-3		13.3		
$I_R$	Reverse Leakage Current	Pin 3-1 & Pin 3-2	$V_{RWM}=7V$		10	$\mu A$
		Pin 1-3 & Pin 2-3	$V_{RWM}=12V$		1	
$V_C$	Clamping Voltage ( $T_p=8/20\mu s$ )	Pin 3-1 & Pin 3-2	$I_{pp}=5A, t_p=8/20\mu s$		10	V
		Pin 1-3 & Pin 2-3		20		
$V_C$	Clamping Voltage ( $T_p=8/20\mu s$ )	Pin 3-1 & Pin 3-2	$I_{pp}=17A, t_p=8/20\mu s$		12	V
		Pin 1-3 & Pin 2-3		26		
$I_{pp}$	Peak Pulse Current ( $T_p=8/20\mu s$ )	Pin 3-1 & Pin 3-2	$t_p=8/20\mu s$		17	A
		Pin 1-3 & Pin 2-3				
$C_J$	Off State Junction Capacitance	Pin 3-1 & Pin 3-2	$V_R=0V, f=1MHz$	55		pF
		Pin 1-3 & Pin 2-3				

## CHARACTERISTIC CURVES

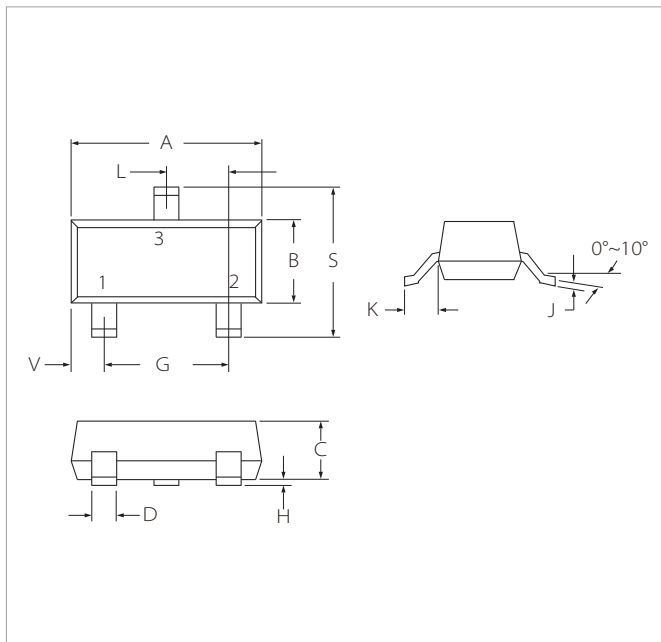


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_p$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

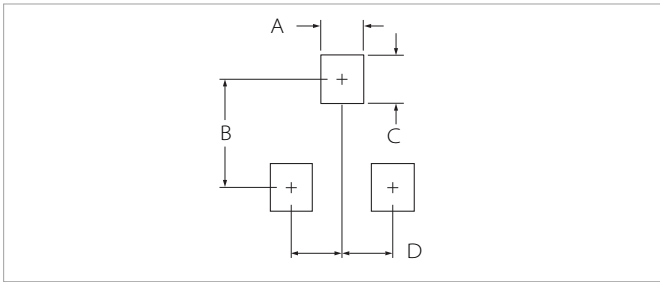


## SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.04	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.89	1.11	0.035	0.044
D	0.37	0.50	0.015	0.020
G	1.78	2.04	0.070	0.081
H	0.01	0.10	0.001	0.004
J	0.08	0.18	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.64	0.083	0.104
V	0.45	0.60	0.018	0.024

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SM712	SOT-23	3000PCS	7"

**Headquarters**

No.3387 Shendu Road Pujiang  
I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

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