

# GSE712MB2JZF

## ESD Protection Diode

### Product Description

400W Peak Pulse Power (8/20 $\mu$ s).  
7V or 12V Working Voltage.

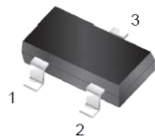
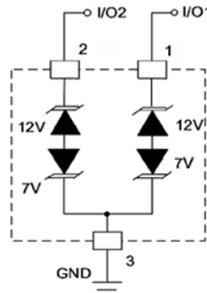
### Features

- Bidirectional Protection
- IEC61000-4-2 (ESD)  $\pm 30$ kV (Air),  $\pm 30$ kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 17A (8/20 $\mu$ s)

### Mechanical Data

- SOT-23 Package
- RoHS Compliant and Halogen Free

### Package and Pin Assignment

GSE712MB2JZF(SOT-23)			Equivalent Circuit
			
Pin	Type <sup>[1]</sup>	Description	
1,2	I/O	ESD protected IO	
3	GND	Connect to ground.	

#### NOTE:

I = Input, O = Output, I/O = Input or Output

### Ordering and Marking Information

Ordering Information			
Part Number	Package	Marking Code	Quantity/Reel
GSE712MB2JZF	SOT-23	712	3,000 PCS
- Product Code: <b>GSE</b>	- Voltage Code: <b>712</b> is 7V & 12V of $V_{RWM}$ Voltage.	- Type1 Code: <b>M</b> for Type of Rating.	
- Type2 Code: <b>B</b> for Bidirectional <b>2</b> for 2 Channels	- Package Code: <b>JZ</b> for SOT-23 Package	- Green Level: <b>F</b> for RoHS Compliant and Halogen Free	

Marking Information	
712	
- Product Code:	712

### Absolute Maximum Ratings (T<sub>A</sub>=25°C Unless otherwise noted)

Symbol	Parameter	Value	Unit
P <sub>PP</sub>	Peak Pulse Power (tp=8/20μs Waveform)	400	W
I <sub>PP</sub>	Peak Pulse Current (tp=8/20μs Waveform)	17	A
V <sub>ESD</sub>	Maximum Air Discharge Voltage per IEC61000-4-2	±30	KV
	Maximum Contact Discharge Voltage per IEC61000-4-2	±30	KV
T <sub>OP</sub>	Operating Junction Temperature Range	-55 to +125	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C

#### NOTE:

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

### Electrical Characteristics (T<sub>A</sub>=25°C Unless otherwise noted)

Symbol	Parameter	Conditions	12V ESD (Pin 1-3 and Pin 2-3)			7V ESD (Pin 3-1 and Pin 3-2)			Unit
			Min	Typ	Max	Min	Typ	Max	
V <sub>RWM</sub>	Reverse Stand-Off Voltage				12			7	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA	13.3			7.5			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>R</sub> = V <sub>RWM</sub>			1			1	uA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 17A, tp=8/20us		24			10		V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> =0V, f=1MHz		45			45		pF

## Typical Characteristics (T<sub>A</sub>=25°C Unless otherwise noted)

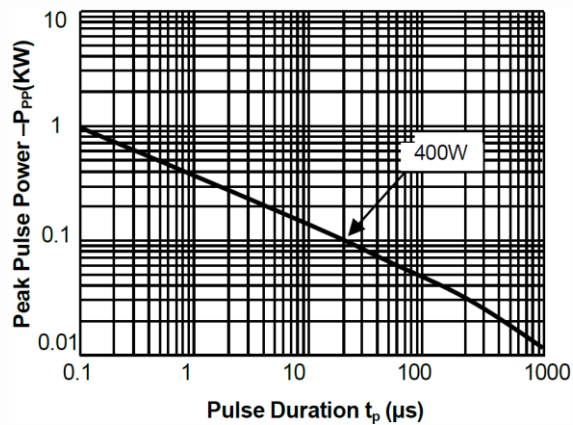


Fig.1 Peak Pulse Power Rating Curve

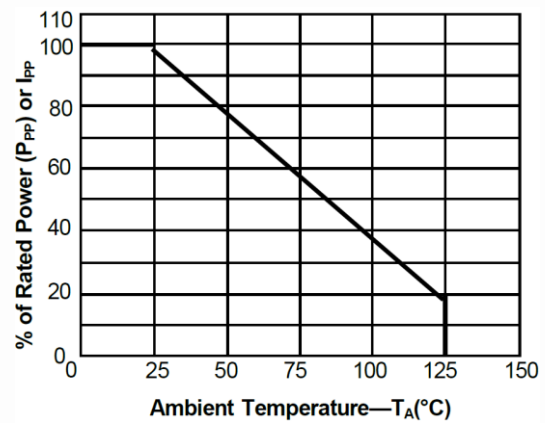


Fig.2 Pulse Derating Curve

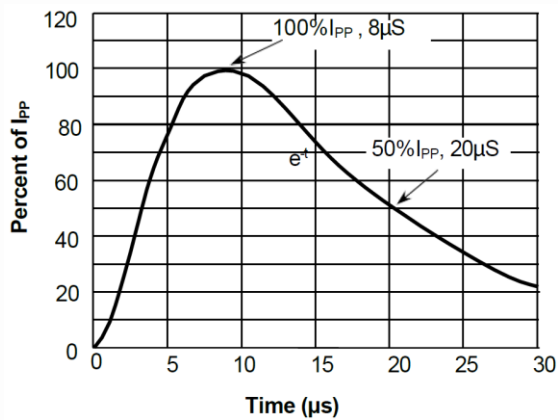


Fig.3 Pulse Waveform-8/20 $\mu$ s

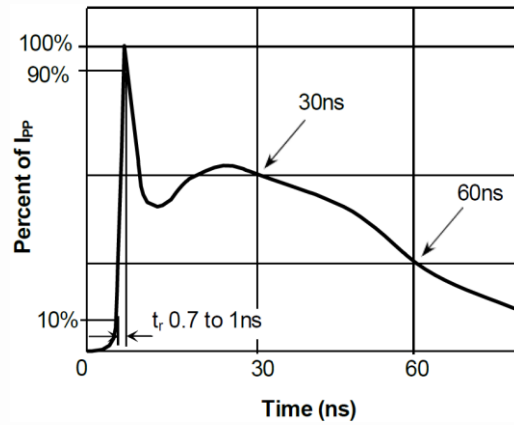
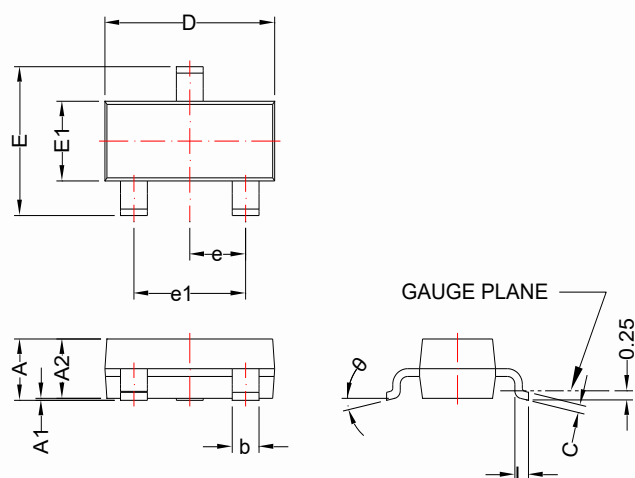


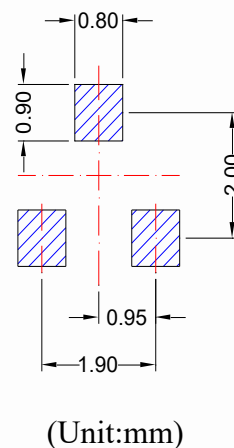
Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

# SOT-23

## Package Dimension



## Recommended Land Pattern



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.20	0.030	0.047
A1	0.00	0.15	0.000	0.006
A2	0.70	1.10	0.028	0.043
b	0.30	0.60	0.012	0.024
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.2	0.6	0.008	0.024
θ	0°	8°	0°	8°





### NOTE:



Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions.

## NOTICE

- Globaltech Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all Globaltech Semiconductor products described or contained herein. Globaltech Semiconductor products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Globaltech Semiconductor makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- Information furnished is believed to be accurate and reliable. However Globaltech Semiconductor assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Globaltech Semiconductor. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information without express written approval of Globaltech Semiconductor.

## CONTACT US

GS Headquarter	
	4F, NO.43-1, Lane 11, Sec. 6, Minquan E. Rd Neihu District, Taipei City 114761, Taiwan (R.O.C).
	886-2-2657-9980
	886-2-2657-3630
	<a href="mailto:sales_twn@gs-power.com">sales_twn@gs-power.com</a>

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587