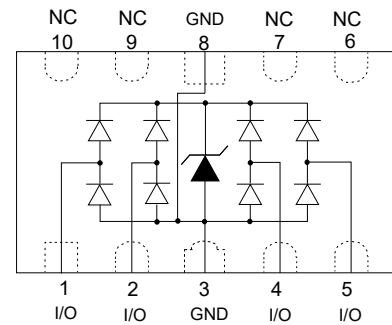


### Description

The PESDALC10N5VU is low capacitance transient voltage suppressor array for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. All pins are rated to withstand 15kV ESD pulses using the IEC 61000-4-2 air discharge method, which can meet the requirement of level 4.

Note: that the PCB traces are used to connect the pin pairs for each line (pin 1 to pin 10, pin2 to pin9, pin4 to pin7, pin5 to pin6)

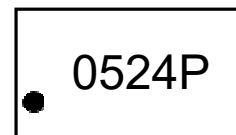


### Feature

- 100W peak pulse power ( $t_p = 8/20\mu s$ )
- DFN2510-10L Package
- Working voltage: 5.0V
- Low clamping voltage
- Low capacitance
- RoHS compliant
- Transient protection for data lines to IEC 61000-4-2(ESD)
  - ±30KV(air), ±15KV(contact);
  - IEC 61000-4-4 (EFT) 40A (5/50ns)
  - IEC 61000-4-5 (Lightning) 5A (8/20us)

### Applications

- USB 2.0,3.0 Power & Data Line Protection
- DVI & HDMI Port Protection
- Serial ATA Port Protection
- Mobile Handsets
- Digital Cameras and camcorders
- PDA & MP3 Players
- Digital TV and Set-top Boxes
- Other Portable Electronic Components



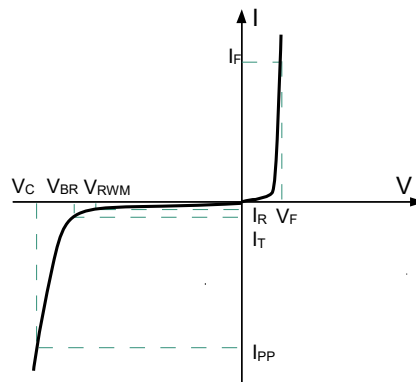
Marking (Top View)

### Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- MSD Level: MSL-1
- Qualified max reflow temperature:260°C
- Pure tin plating: 7 ~ 17 um
- Pin flatness : ≤3mil

## Electronics Parameter

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power
$C$	Junction Capacitance
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



## Electrical characteristics per line@( unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_t = 1mA$	6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5.0V, T = 25^\circ C$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_p = 8/20\mu s$			11	V
Clamping Voltage	$V_C$	$I_{PP} = 5A, t_p = 8/20\mu s$			15	V
Junction Capacitance(IO-IO)	$C_J$	$V_R = 0V, f = 1MHz$		0.3	0.4	pF
Junction Capacitance(IO-GND)	$C_J$	$V_R = 0V, f = 1MHz$		0.6	0.75	pF

## Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{pp}$	100	W
Operating Temperature	$T_J$	-55 to +150	$^\circ C$
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ C$

Typical Characteristics

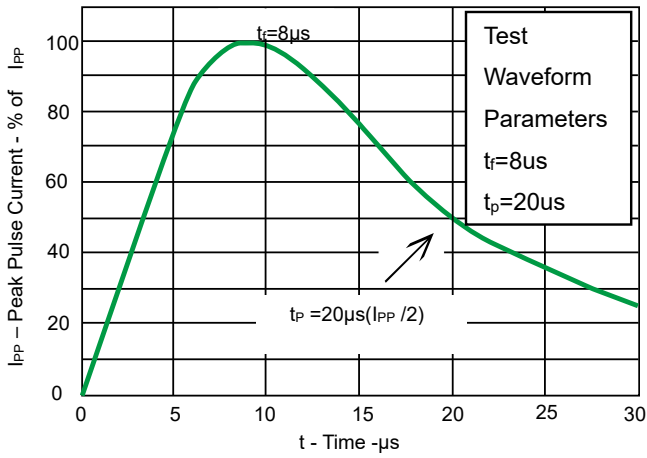


Fig 1. Pulse Waveform

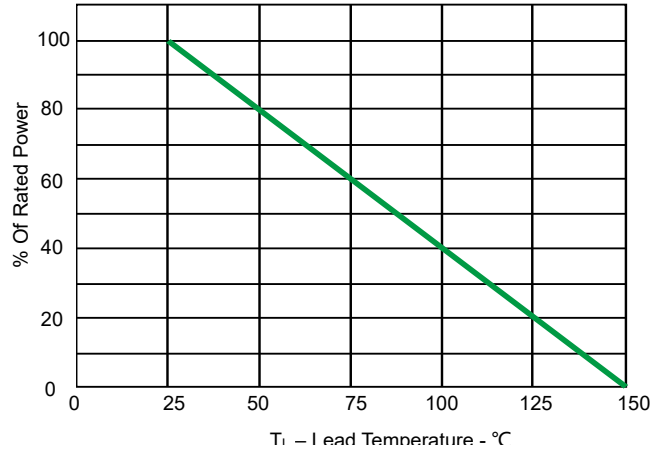


Fig 2. Power Derating Curve

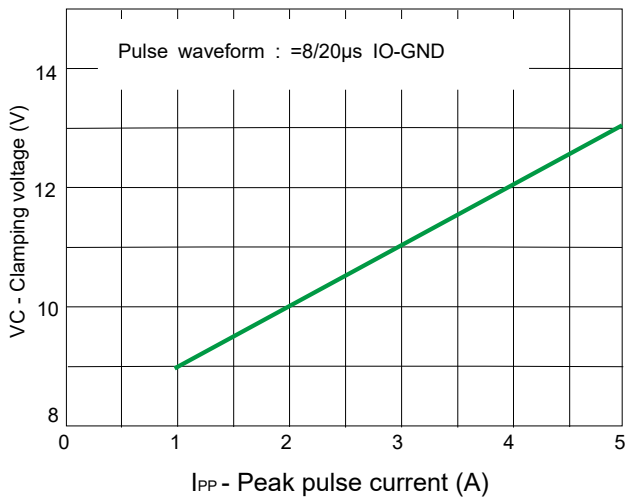


Fig 3. Clamping voltage vs. Peak pulse current

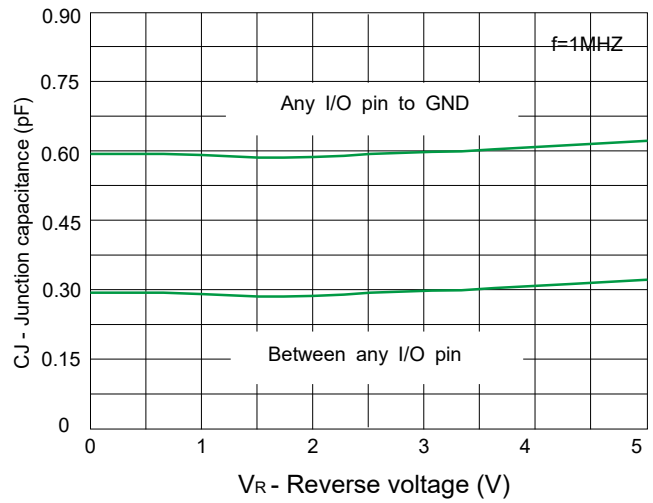


Fig 4 . Capacitance vs. Reverses voltage

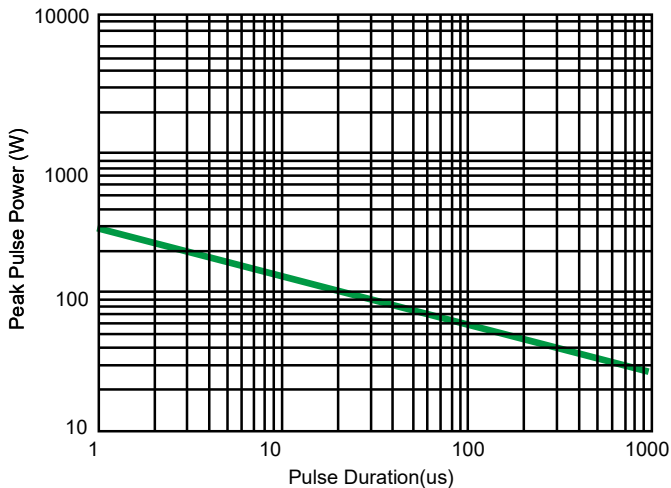


Fig 5. Non Repetitive Peak Pulse Power vs. Pulse time

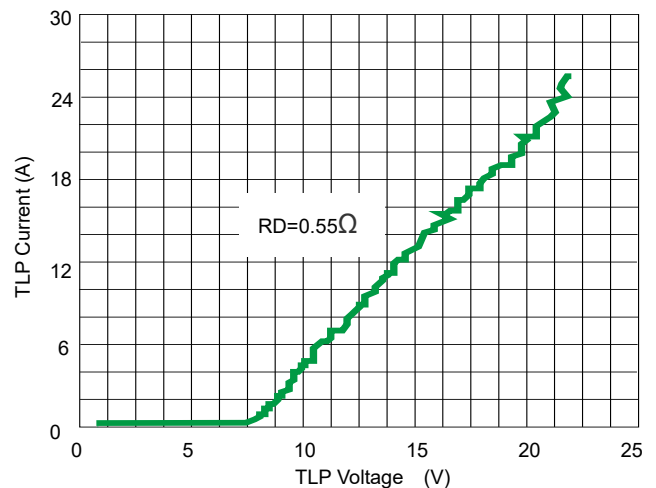
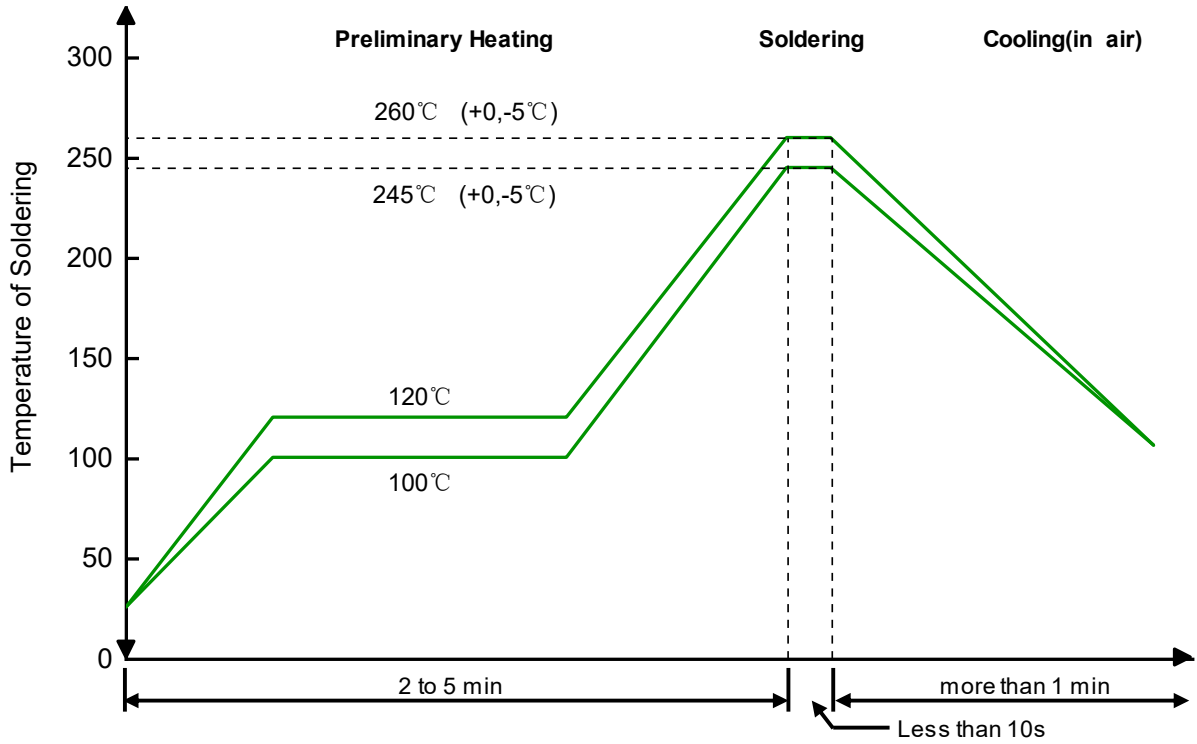


Fig 6. TLP Measurement

Solder Reflow Recommendation



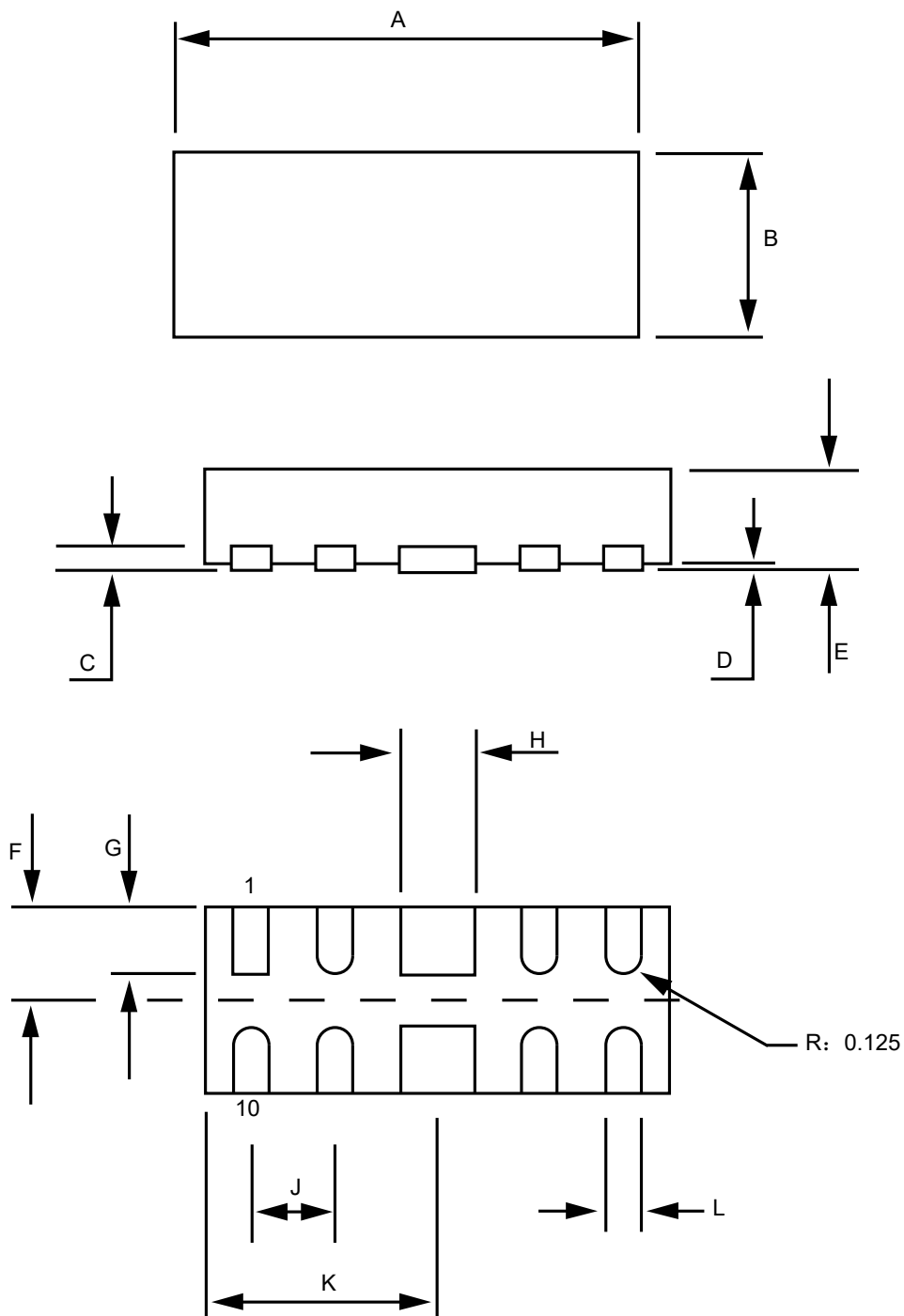
Remark: Pb free for 260°C; Pb for 245°C.

## PCB Design

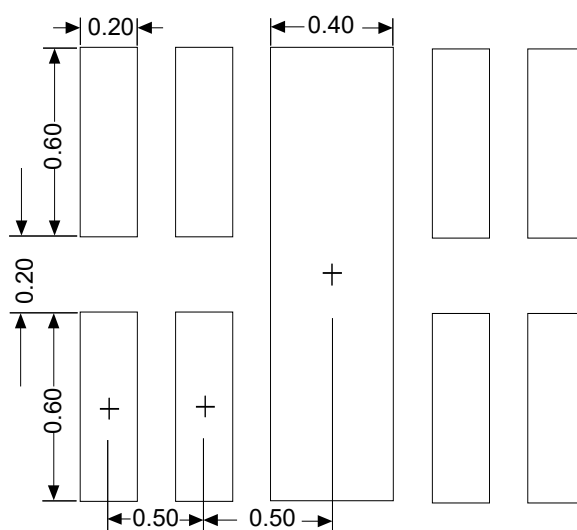
For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- Do not make false economies and save copper for the ground connection.
- Place via holes to ground as close as possible to the anode of the TVS diode.
- Use as many via holes as possible for the ground connection.
- Keep the length of via holes in mind! The longer the more inductance they will have.

## Product dimension (DFN2510-10L)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.40	2.60	0.094	0.102
B	0.90	1.10	0.035	0.043
C	0.13		0.005	
D	0.00	0.05	0.00	0.002
E	0.50	0.65	0.020	0.026
F	0.45	0.55	0.017	0.022
G	0.30	0.425	0.012	0.017
H	0.35	0.45	0.014	0.018
J	0.5 BSC		0.020 BSC	
K	1.20	1.30	0.047	0.056
L	0.15	0.25	0.006	0.010

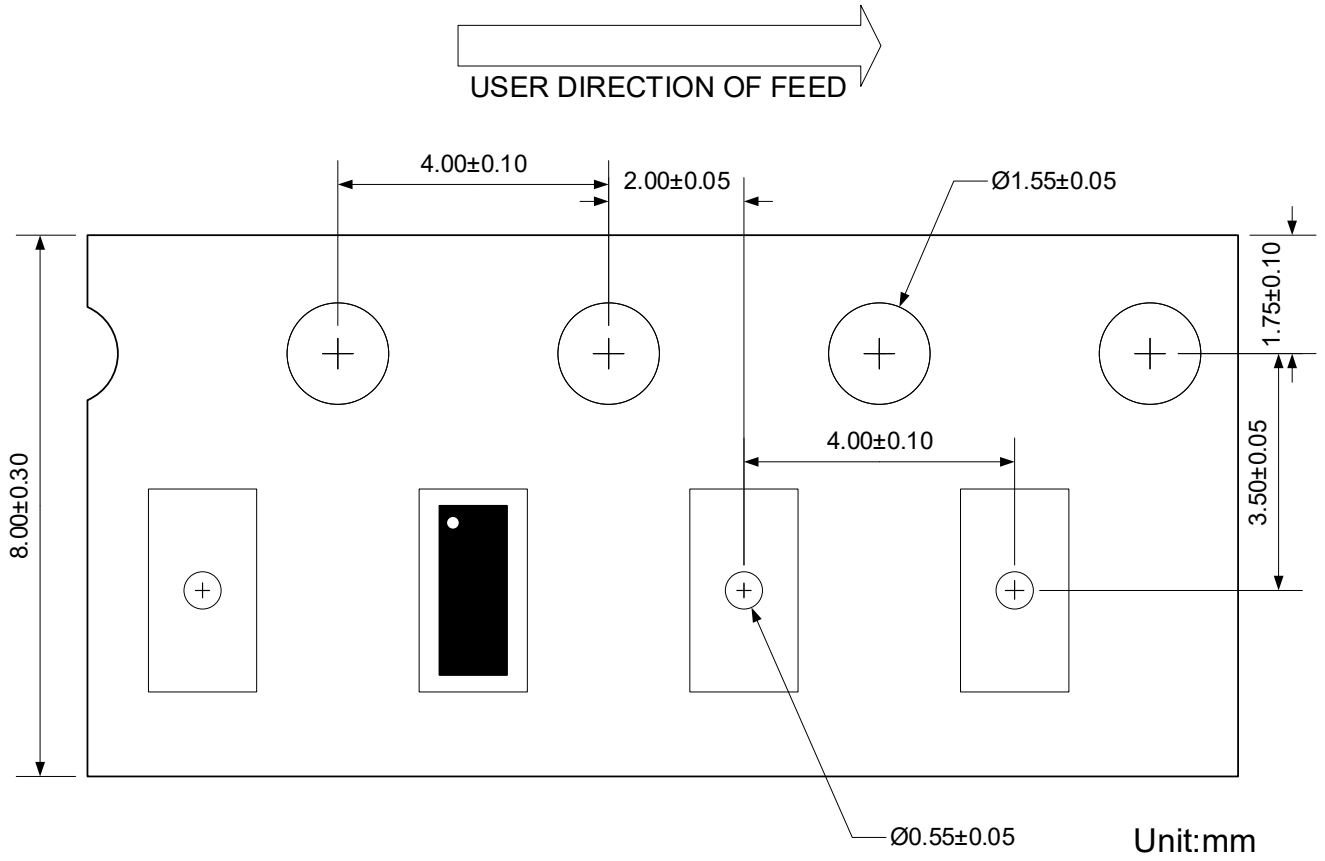


Unit:mm


### Ordering information

Device	Package	Shipping
PESDALC10N5VU	DFN2510-10L (Pb-Free)	3000 / Tape & Reel

Load with information




**IMPORTANT NOTICE**

 and **Prisemi**<sup>®</sup> are registered trademarks of **Prisemi Electronics Co., Ltd (Prisemi)** ,Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. “Typical” parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Website: <http://www.prisemi.com>

For additional information, please contact your local Sales Representative.

©Copyright 2009, Prisemi Electronics

 **Prisemi**<sup>®</sup> is a registered trademark of Prisemi Electronics.

All rights are reserved.