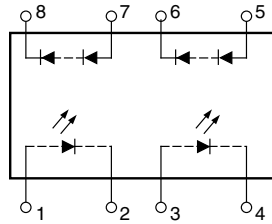
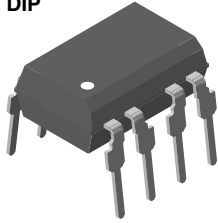
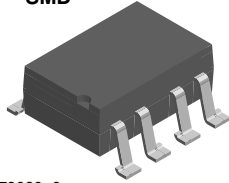


## Dual Photovoltaic MOSFET Driver Solid-State Relay

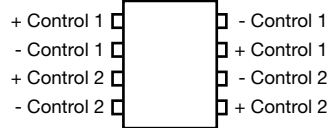
DIP



SMD



i179020\_6



### FEATURES

- High open circuit voltage
- High short circuit current
- Isolation test voltage 5300 V<sub>RMS</sub>
- Logic compatible input
- High reliability
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS  
COMPLIANT

### APPLICATIONS

- High-side driver
- Solid state relays
- Floating power supply
- Power control
- Data acquisition
- ATE
- Isolated switching

### Note

- See "Solid-State Relays" (application note 56)

### DESCRIPTION

The LH1262CB, LH1262CAC photovoltaic MOSFET driver consists of two LEDs optically coupled to two photodiode arrays. The photodiode array provides a floating source with adequate voltage and current to drive high-power MOSFET transistors. Optical coupling provides a high I/O isolation voltage. In order to turn the MOSFET off, an external resistance (gate-to-source) is required for gate discharge.

### AGENCY APPROVALS

UL1577: pending  
 BSI/BABT: pending  
 DIN EN: pending  
 FIMKO: pending

ORDERING INFORMATION	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">L</div> <div style="border: 1px solid black; padding: 2px;">H</div> <div style="border: 1px solid black; padding: 2px;">1</div> <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px;">6</div> <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px;">#</div> <div style="border: 1px solid black; padding: 2px;">#</div> <div style="border: 1px solid black; padding: 2px;">#</div> <div style="border: 1px solid black; padding: 2px;">T</div> <div style="border: 1px solid black; padding: 2px;">R</div> </div> <p style="text-align: center;"> <span style="margin-right: 100px;">PART NUMBER</span> <span style="margin-right: 100px;">ELECTR. VARIATION</span> <span style="margin-right: 100px;">PACKAGE CONFIG.</span> <span style="margin-right: 100px;">TAPE AND REEL</span> </p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">             DIP            7.62 mm         </div> <div style="text-align: center;">             SMD            &gt; 0.1 mm         </div> </div>
<b>PACKAGE</b>	<b>UL, BSI, VDE, FIMKO</b>
SMD-8	LH1262CAC
SMD-8, tape and reel	LH1262CACTR
DIP-8	LH1262CB



ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
<b>SSR</b>				
LED input ratings continuous forward current		I <sub>F</sub>	50	mA
LED input ratings reverse voltage	I <sub>R</sub> ≤ 10 μA	V <sub>R</sub>	5.0	V
Photodiode array reverse voltage	I <sub>R</sub> ≤ 2.0 μA	V <sub>R</sub>	100	V
Ambient operating temperature range		T <sub>amb</sub>	- 40 to + 85	°C
Storage temperature range		T <sub>stg</sub>	- 40 to + 150	°C
Pin soldering time <sup>(1)</sup>	t = 7.0 s max.	T <sub>S</sub>	270	°C
Input to output isolation voltage	t = 60 s min.	V <sub>ISO</sub>	5300	V <sub>RMS</sub>

Notes

- Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute maximum ratings for extended periods of the time can adversely affect reliability.
- (1) Refer to reflow profile for soldering conditions for surface mounted devices (SMD). Refer to wave profile for soldering conditions for through hole devices (DIP).

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
LED forward voltage	I <sub>F</sub> = 10 mA	V <sub>F</sub>	1.15	1.26	1.45	V
Detector forward voltage	I <sub>F</sub> = 10 μA	V <sub>F(PDA)</sub>		14		V
Detector reverse voltage	I <sub>R</sub> = 2.0 μA	V <sub>R(PDA)</sub>		200		V
Open circuit voltage (pins 5, 6 or 7, 8)	I <sub>F</sub> = 5.0 mA	V <sub>OC</sub>	10	12.95	15	V
	I <sub>F</sub> = 10 mA	V <sub>OC</sub>		13.45		V
	I <sub>F</sub> = 20 mA	V <sub>OC</sub>		13.92		V
Short circuit current (pins 5, 6 or 7, 8)	I <sub>F</sub> = 5.0 mA	I <sub>SC</sub>	1.0	1.6	6.5	μA
	I <sub>F</sub> = 10 mA	I <sub>SC</sub>	2.6	3.4	14	μA
	I <sub>F</sub> = 20 mA	I <sub>SC</sub>		6.9		μA

Note

- Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluations. Typical values are for information only and are not part of the testing requirements.

SWITCHING CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Turn-on time	I <sub>F</sub> = 20 mA <sup>(1)</sup>	t <sub>on</sub>		35		μs
Turn-off time	I <sub>F</sub> = 20 mA <sup>(1)</sup>	t <sub>off</sub>		90		μs

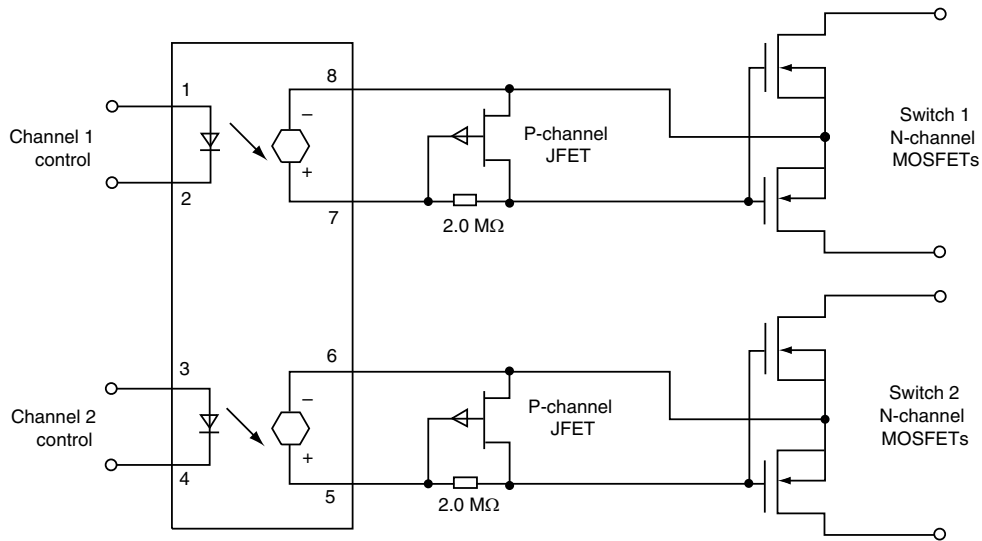
Note

- (1) f = 1.0 kHz, pulse width = 100 μs, load (R<sub>L</sub>) = 1.0 MΩ, 15 pF; measured at 90 % rated voltage (t<sub>on</sub>), 10 % rated voltage (t<sub>off</sub>). Actuation speed depends upon the external t<sub>on</sub> and t<sub>off</sub> circuitry and the capacitance of the MOSFET.

FUNCTIONAL DESCRIPTION

Figure 1 outlines the IV characteristics of the illuminated photodiode array (PDA). For operation at voltages below V<sub>OC</sub>, the PDA acts as a nearly constant current source. The actual region of operation depends upon the load.

The amount of current applied to the LED (pins 1 and 2 or 3 and 4) determines the amount of light produced for the PDA. For high temperature operation, more LED current may be required.

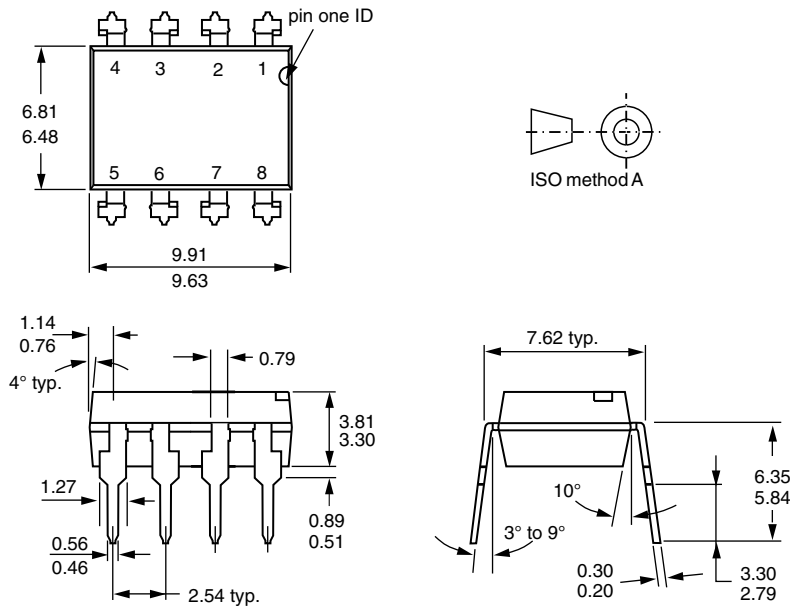


ih1262cb\_08

Fig. 1 - Typical Dual Form A Solid-State Relay Application

## PACKAGE DIMENSIONS in inches (millimeters)

DIP



i178008





## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**