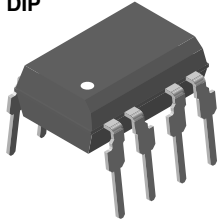
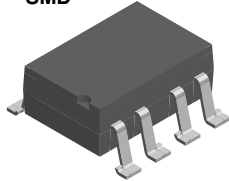


## Dual Photovoltaic MOSFET Driver Solid-State Relay

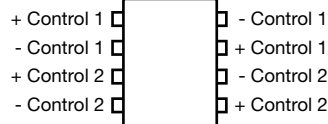
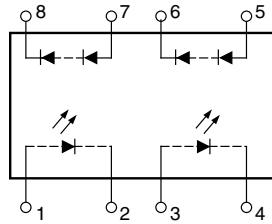
DIP



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)

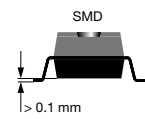
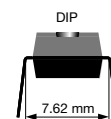
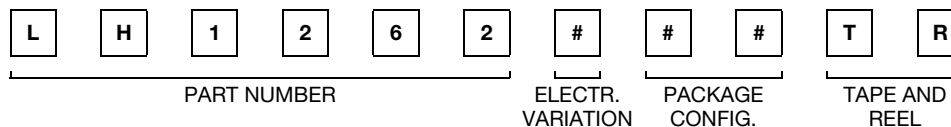
### DESCRIPTION

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



PACKAGE	UL, BSI, VDE, FIMKO
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

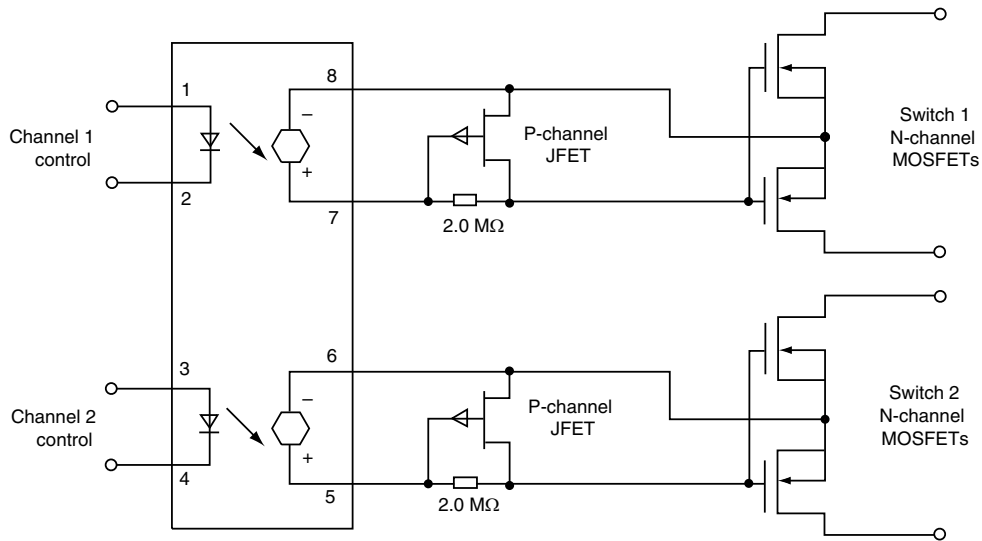
Note

- (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.

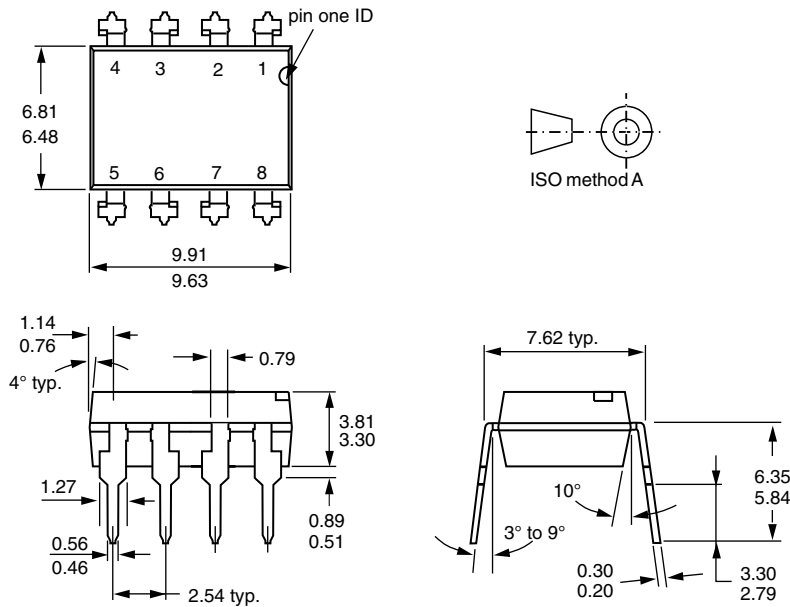


ih1262cb\_08

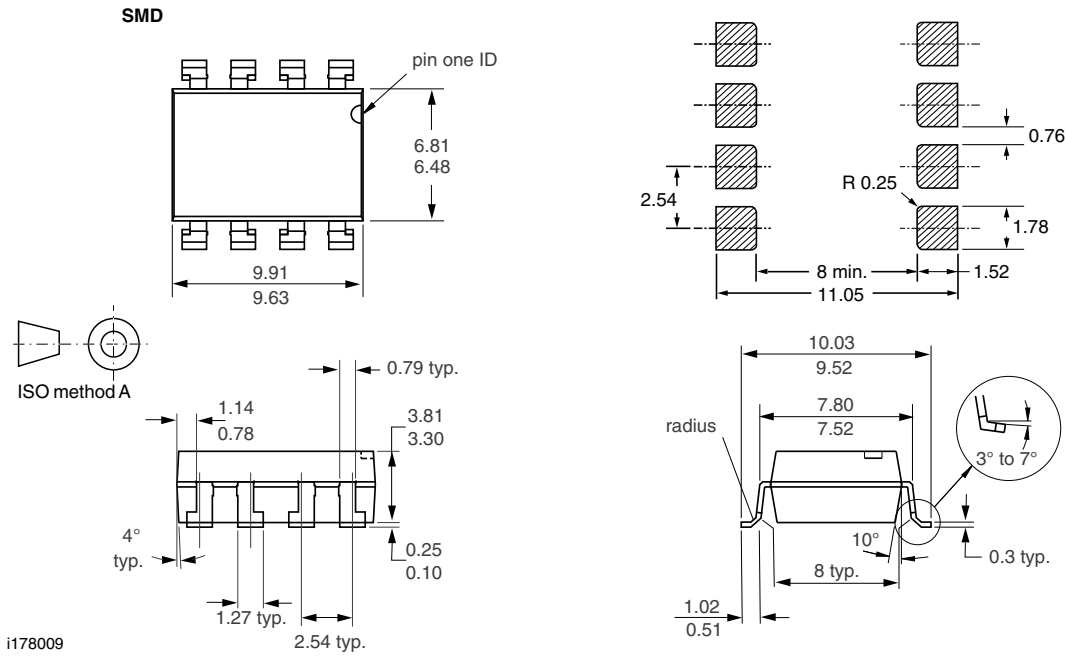
Fig. 1 - Typical Dual Form A Solid-State Relay Application

## PACKAGE DIMENSIONS in inches (millimeters)

DIP



i178008





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