ACPL-P345 and ACPL-W345

1.0 Amp Output Current Power & SiC MOSFET Gate Drive Optocoupler with Rail-to-Rail Output Voltage in Stretched SO6

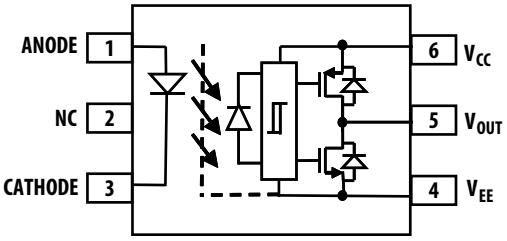
AVAGO TECHNOLOGIES

Data Sheet

Description

The ACPL-P345/W345 contains an AlGaAs LED, which is optically coupled to an integrated circuit with a power output stage. This optocoupler is ideally suited for driving power and SiC(Silicon Carbide) MOSFETs used in inverter or AC-DC/DC-DC converter applications. The high operating voltage range of the output stage provides the drive voltages required by gate controlled devices. The voltage and high peak output current supplied by this optocoupler make it ideally suited for direct driving MOSFETs at high frequency for high efficiency conversion. The ACPL-P345 and ACPL-W345 have the highest insulation voltage of V_{IORM}= 891Vpeak and V_{IORM}= 1140V_{peak} respectively in the IEC/ EN/DIN EN 60747-5-5.

Functional Diagram



Note: A 1 µF bypass capacitor must be connected between pins V_{CC} and V_{EE}.

Truth Table

LED	VCC – VEE "POSITIVE GOING" (i.e., TURN-ON)	VCC – VEE "NEGATIVE GOING" (i.e., TURN-OFF)	VO
OFF	0 - 20 V	0 – 20 V	LOW
ON	0 – 8.1 V	0 – 7.1 V	LOW
ON	8.1 – 9.1 V	7.1 – 8.1 V	TRANSITION
ON	9.1 – 20V	8.1 – 20 V	HIGH

Features

- 1.0 A maximum peak output current
- 0.8 A minimum peak output current
- Rail-to-rail output voltage
- 120 ns maximum propagation delay
- 50 ns maximum propagation delay difference
- LED current input with hysteresis
- 50 kV/µs minimum Common Mode Rejection (CMR) at V_{CM} = 1500 V
- I_{CC} = 4.0 mA maximum supply current
- Under Voltage Lock-Out protection (UVLO) with hysteresis
- Wide operating V_{CC} Range: 10 to 20 V
- Industrial temperature range: -40 °C to 105 °C
- Safety Approval
  - UL Recognized 3750/5000 V_{RMS} for 1min.
  - CSA
  - IEC/EN/DIN EN 60747-5-5 V_{IORM} = 891/1140 V_{peak}

Applications

- Power and SiC MOSFET gate drive
- AC and Brushless DC motor drives
- Switching power supplies

CAUTION: *It is advised that normal static precautions be taken in handling and assembly of this component to prevent damage and/or degradation which may be induced by ESD.*

Ordering Information

ACPL-P345 is UL Recognized with 3750 V_{RMS} for 1 minute per UL1577.

ACPL-W345 is UL Recognized with 5000 V_{RMS} for 1 minute per UL1577.

Part number	Option RoHS Compliant	Package	Surface Mount	Tape& Reel	IEC/EN/DIN EN 60747-5-5	Quantity
ACPL-P345 ACPL-W345	-000E	Stretched SO-6	X			100 per tube
	-500E		X	X		1000 per reel
	-060E		X		X	100 per tube
	-560E		X	X	X	1000 per reel

To order, choose a part number from the part number column and combine with the desired option from the option column to form an order entry.

Example 1:

ACPL-P345-560E to order product of Stretched SO-6 Surface Mount package in Tape and Reel packaging with IEC/EN/DIN EN 60747-5-5 Safety Approval in RoHS compliant.

Example 2:

ACPL-W345-000E to order product of Stretched SO-6 Surface Mount package in Tube packaging and RoHS compliant.

Option datasheets are available. Contact your Avago sales representative or authorized distributor for information.

Related Documents

AV02-0421EN	Application Note 5336	Gate Drive Optocoupler Basic Design for IGBT / MOSFET
AV02-3698EN	Application Note 1043	Common-Mode Noise: Sources and Solutions
AV02-0310EN	Reliability Data	Plastics Optocouplers Product ESD and Moisture Sensitivity

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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