

6-Pin DIP Random-Phase Triac Driver Optocoupler (600 Volt Peak)

MOC3051M, MOC3052M, MOC3053M

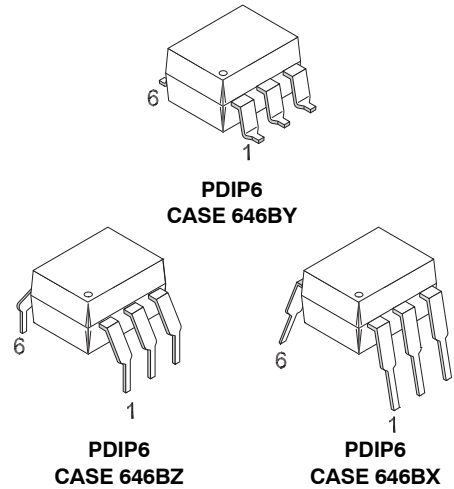
The MOC3051M, MOC3052M and MOC3053M consist of a GaAs infrared emitting diode optically coupled to a non-zero-crossing silicon bilateral AC switch (triac). These devices isolate low voltage logic from 115 V_{AC} and 240 V_{AC} lines to provide random phase control of high current triacs or thyristors. These devices feature greatly enhanced static dv/dt capability to ensure stable switching performance of inductive loads.

Features

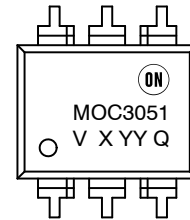
- Excellent I_{FT} Stability—IR Emitting Diode Has Low Degradation
- 600 V Peak Blocking Voltage
- Safety and Regulatory Approvals
 - ◆ UL1577, 4,170 V_{ACRMS} for 1 Minute
 - ◆ DIN EN/IEC60747-5-5

Typical Applications

- Solenoid/Valve Controls
- Lamp Ballasts
- Static AC Power Switch
- Interfacing Microprocessors to 115 V_{AC} and 240 V_{AC} Peripherals
- Solid State Relay
- Incandescent Lamp Dimmers
- Temperature Controls
- Motor Controls

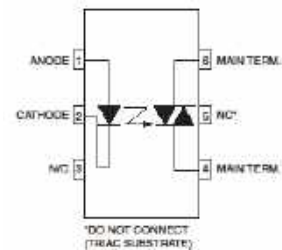


MARKING DIAGRAM



- | | |
|---------|------------------------------|
| ON | = ON Semiconductor Logo |
| MOC3051 | = Device Code |
| V | = DIN EN/IEC60747-5-5 Option |
| X | = One-Digit Year Code |
| YY | = Two-Digit Work Week, |
| Q | = Assembly Package Code |

PIN CONNECTIONS



ORDERING INFORMATION

See detailed ordering, marking and shipping information on page 9 of this data sheet.

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SAFETY AND INSULATIONS RATINGS

As per DIN EN/IEC 60747-5-5, this optocoupler is suitable for "safe electrical insulation" only within the safety limit data. Compliance with the safety ratings shall be ensured by means of protective circuits.

| Parameter | | Characteristics |
|--|------------------------|-----------------|
| Installation Classifications per DIN VDE 0110/1.89 Table 1, For Rated Mains Voltage | < 150 V _{RMS} | I-IV |
| | < 300 V _{RMS} | I-IV |
| Climatic Classification | | 40/85/21 |
| Pollution Degree (DIN VDE 0110/1.89) | | 2 |
| Comparative Tracking Index | | 175 |

| Symbol | Parameter | Value | Unit |
|-------------------|--|-------------------|-------------------|
| V _{PR} | Input-to-Output Test Voltage, Method A, V _{IORM} × 1.6 = V _{PR} , Type and Sample Test with t _m = 10 s, Partial Discharge < 5 pC | 1360 | V _{peak} |
| | Input-to-Output Test Voltage, Method B, V _{IORM} × 1.875 = V _{PR} , 100% Production Test with t _m = 1 s, Partial Discharge < 5 pC | 1594 | V _{peak} |
| V _{IORM} | Maximum Working Insulation Voltage | 850 | V _{peak} |
| V _{IOTM} | Highest Allowable Over-Voltage | 6000 | V _{peak} |
| | External Creepage | ≥ 7 | mm |
| | External Clearance | ≥ 7 | mm |
| | External Clearance (for Option TV, 0.4" Lead Spacing) | ≥ 10 | mm |
| DTI | Distance Through Insulation (Insulation Thickness) | ≥ 0.5 | mm |
| R _{IO} | Insulation Resistance at T _S , V _{IO} = 500 V | > 10 ⁹ | Ω |