FAIRCHILD SEMICONDUCTOR®

September 2010

MOC3081M, MOC3082M, MOC3083M
6-Pin Zero-Cross Optoisolators Triac Driver Output (800 Volt Peak)

Features

- Underwriters Laboratories (UL) recognized – file #E90700, Volume 2
- VDE recognized – file #102497 – add option V (e.g., MOC3083VM)
- Simplifies logic control of 240 VAC power
- Zero voltage crossing
- dv/dt of 1500V/μs typical, 600V/μs guaranteed
- Compatible with Fairchild's FKPF12N80 discrete power triac

Applications

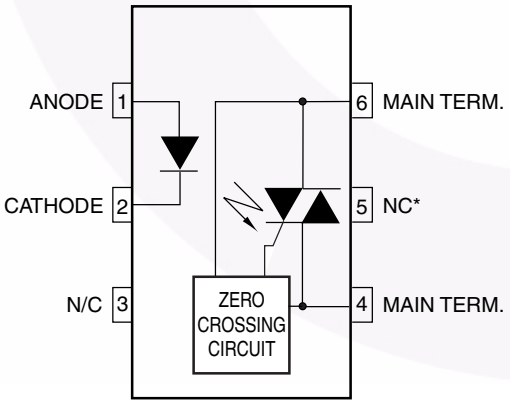
- Solenoid/valve controls
- Lighting controls
- Static power switches
- AC motor drives
- Temperature controls
- E.M. contactors
- AC motor starters
- Solid state relays

Description

The MOC3081M, MOC3082M and MOC3083M devices consist of a GaAs infrared emitting diode optically coupled to a monolithic silicon detector performing the function of a zero voltage crossing bilateral triac driver.

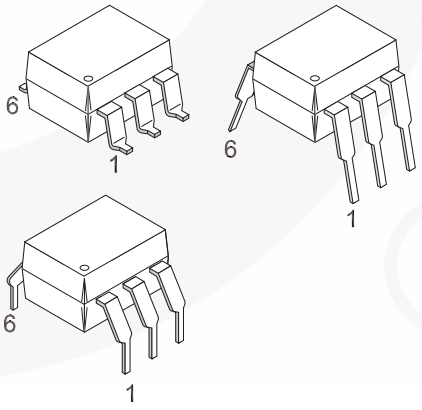
They are designed for use with a discrete power triac in the interface of logic systems to equipment powered from 240 VAC lines, such as solid-state relays, industrial controls, motors, solenoids and consumer appliances, etc.

Schematic



*DO NOT CONNECT
(TRIAC SUBSTRATE)

Package Outlines



Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

Symbol	Parameters	Value	Units
TOTAL DEVICE			
T_{STG}	Storage Temperature	-40 to +150	°C
T_{OPR}	Operating Temperature	-40 to +85	°C
T_{SOL}	Lead Solder Temperature	260 for 10 sec	°C
T_J	Junction Temperature Range	-40 to +100	°C
V_{ISO}	Isolation Surge Voltage[1] (peak AC voltage, 60Hz, 1 sec. duration)	7500	Vac(pk)
P_D	Total Device Power Dissipation @ 25°C Ambient	250	mW
	Derate above 25°C	2.94	mW/°C
EMITTER			
I_F	Continuous Forward Current	60	mA
V_R	Reverse Voltage	6	V
P_D	Total Power Dissipation @ 25°C Ambient	120	mW
	Derate above 25°C	1.41	mW/°C
DETECTOR			
V_{DRM}	Off-State Output Terminal Voltage	800	V
I_{TSM}	Peak Repetitive Surge Current (PW = 100μs, 120pps)	1	A
P_D	Total Power Dissipation @ 25°C Ambient	150	mW
	Derate above 25°C	1.76	mW/°C

Note:

1. Isolation surge voltage, V_{ISO}, is an internal device dielectric breakdown rating. For this test, Pins 1 and 2 are common, and Pins 4, 5 and 6 are common.