Tanisemi

# MOC3063S-TA1

**Photo Transistor Coupler**

## FEATURES

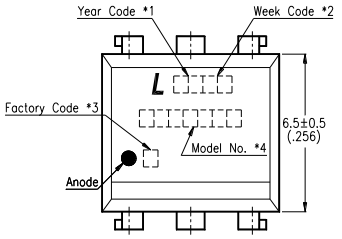
* Isolation voltage between input and output $V_{iso}$ : $5,000V_{rms}$
* 6pin DIP zero-cross optoisolators triac driver output
* High repetitive peak off-state voltage $V_{DRM}$ : Min. 600V
* High critical rate of rise of off-state voltage
  ( dv/dt : MIN. 1000V / μs )
* Dual-in-line package :
  MOC3063
* Wide lead spacing package :
  MOC3063M
* Surface mounting package :
  MOC3063S
* Tape and reel packaging :
  MOC3063S-TA1
* Safety approval
  UL / CSA / FIMKO / VDE* approved
  *Required “V” ordering option
* RoHS compliance

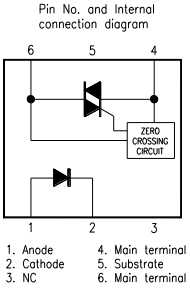
## APPLICATION

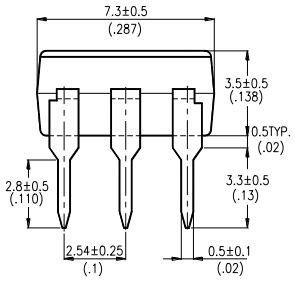
* AC Motor Drives
* AC Motor Starters
* E.M. Contactors
* Lighting Controls
* Solenoid/Valve Controls
* Solid State Relays
* Static Power Switches
* Temperature Controls

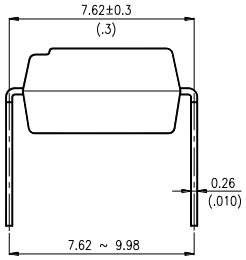
# OUTLINE DIMENSIONS

## Dual-in-line package :

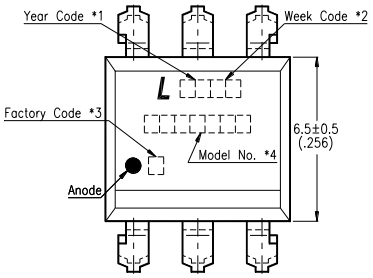


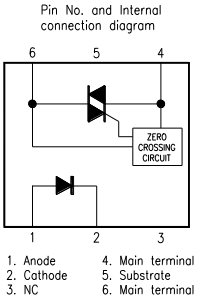



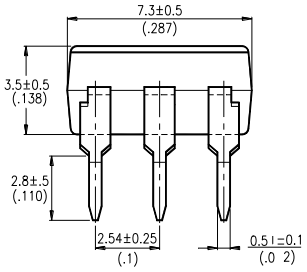



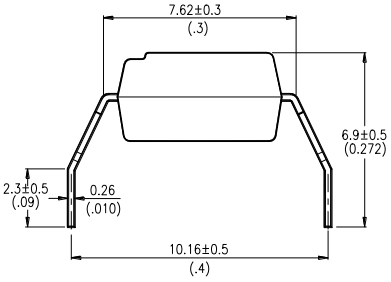




## Wide lead spacing package:



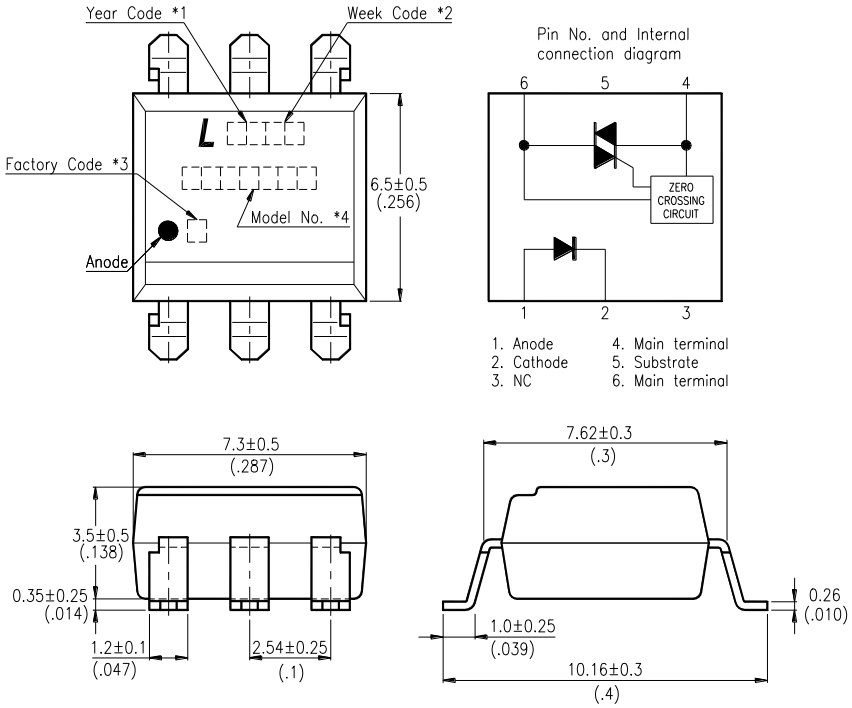




*1. Year date code.
*2. 2-digit work week.
*3. Factory identification mark shall be marked.
(Z : Taiwan, Y : Thailand, X : China-TJ, W : China-CZ)
*4. Model No.: MOC3063

# OUTLINE DIMENSIONS

**Surface mounting package :**

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(Z : Taiwan, Y : Thailand, X : China-TJ, W : China-CZ)
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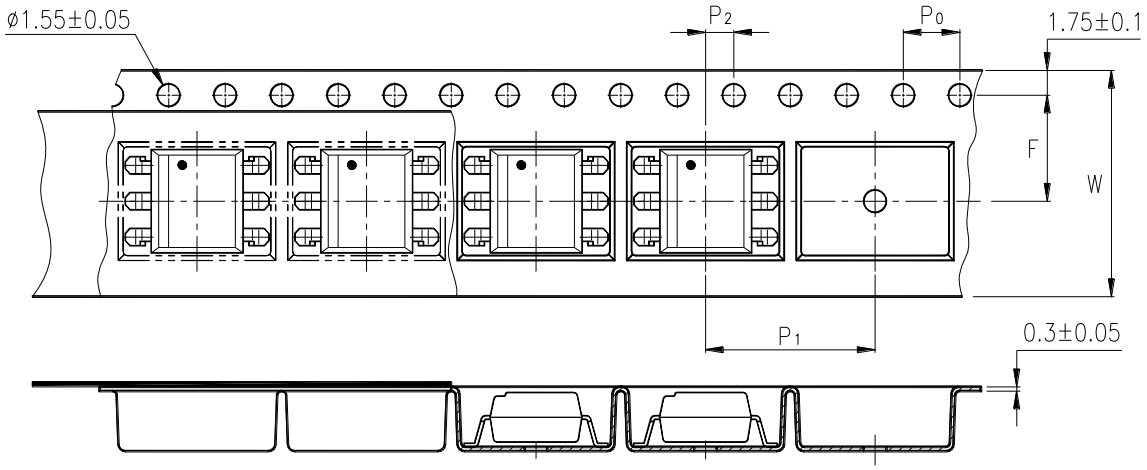
# TAPING DIMENSIONS

**Tape and reel package :**

**MOC3063S-TA1**




| Description | Symbol | Dimensions in mm ( inches ) |
|---|---|---|
| Tape wide | W | 16 ± 0.3 ( .63 ) |
| Pitch of sprocket holes | $P_0$ | 4 ± 0.1 ( .15 ) |
| Distance of compartment | F<br>$P_2$ | 7.5 ± 0.1 ( .295 )<br>2 ± 0.1 ( .079 ) |
| Distance of compartment to compartment | $P_1$ | 12 ± 0.1 ( .472 ) |

# ABSOLUTE MAXIMUM RATING

( Ta = 25°C )

| PARAMETER | | SYMBOL | RATING | UNIT |
|---|---|---|---|---|
| INPUT | Forward Current | $I_F$ | 50 | mA |
| | Reverse Voltage | $V_R$ | 6 | V |
| | Power Dissipation | $P_D$ | 120 | mW |
| OUTPUT | Off-State Output Terminal Voltage | $V_{DRM}$ | 600 | V |
| | Peak Repetitive Surge Current ( PW=100μs, 120pps ) | $I_{TSM}$ | 1 | A |
| | Collector Power Dissipation | $P_C$ | 150 | mW |
| Total Power Dissipation | | $P_{tot}$ | 250 | mW |
| *1 Isolation Voltage | | $V_{iso}$ | 5,000 | Vrms |
| Ambient Operating Temperature Range | | $T_A$ | -40 ~ +100 | °C |
| Storage Temperature Range | | $T_{stg}$ | -55 ~ +150 | °C |
| *2 Soldering Temperature | | $T_L$ | 260 | °C |

*1. AC For 1 Minute, R.H. = 40 ~ 60%

Isolation voltage shall be measured using the following method.

(1) Short between anode and cathode on the primary side and between collector, emitter on the secondary side.

(2) The isolation voltage tester with zero-cross circuit shall be used.

(3) The waveform of applied voltage shall be a sine wave.

*2. For 10 Seconds

# ELECTRICAL - OPTICAL CHARACTERISTICS

( Ta = 25°C )

| PARAMETER | | | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS |
|---|---|---|---|---|---|---|---|---|
| INPUT | Forward Voltage | | $V_F$ | — | 1.2 | 1.4 | V | $I_F$=20mA |
| | Reverse Current | | $I_R$ | — | 0.05 | 10 | μA | $V_R$=6V |
| OUTPUT | *1 Peak Blocking Current, Either Direction | | $I_{DRM1}$ | — | — | 500 | nA | $V_{DRM}$ = 600V |
| | Peak On-State Voltage, Either Direction | | $V_{TM}$ | — | — | 3.0 | V | $I_{TM}$=100 mA Peak |
| | *2 Critical rate of Rise of Off-State Voltage | | dv/dt | 1000 | — | — | V/μs | |
| COUPLED | *3 Led Trigger Current, Current Required to Latch Output, Either Direction | MOC3063 | $I_{FT}$ | — | — | 5 | mA | Main Terminal Voltage = 3V |
| | Holding Current, Either Direction | | $I_H$ | — | 400 | — | μA | |
| ZERO CROSSING | Inhibit Voltage | | $V_{INH}$ | — | 5 | 20 | Volts | $I_F$=Rated $I_{FT}$, MT1-MT2 Voltage above which device will not trigger. |
| | Leakage in Inhibited State | | $I_{DRM2}$ | — | — | 500 | μA | $I_F$ = Rated $I_{FT}$, Rated $V_{DRM}$, Off State |

*1 Test voltage must be applied within dv/dt rating.
*2 This is static dv/dt. Commutating dv/dt is a function of the load-driving thyristor(s) only.
*3 All devices are guaranteed to trigger at an $I_F$ value less than or equal to max $I_{FT}$. Therefore, recommended operating $I_F$ lies between max $I_{FT}$ 5mA for MOC3063 and absolute max $I_F$ (50mA)

# CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

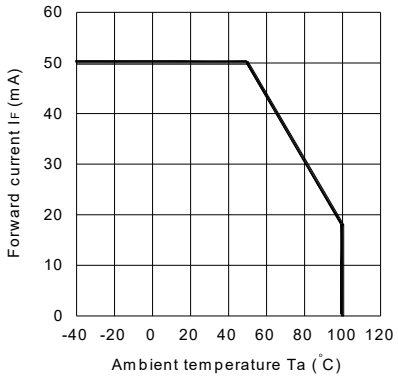



Fig.2 On-state Current vs. Ambient Temperature

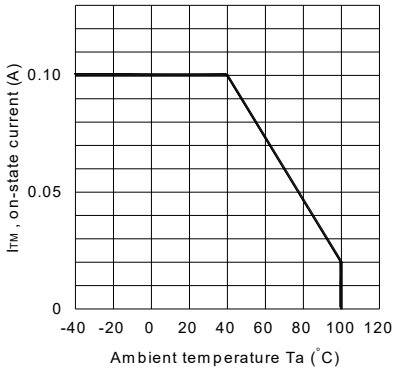



Fig.3 Minimum Trigger Current vs. Ambient Temperature

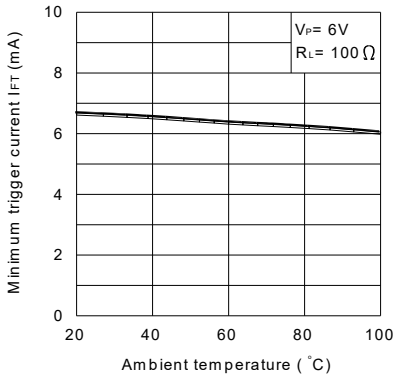



Fig.4 Forward Current vs. Forward Voltage

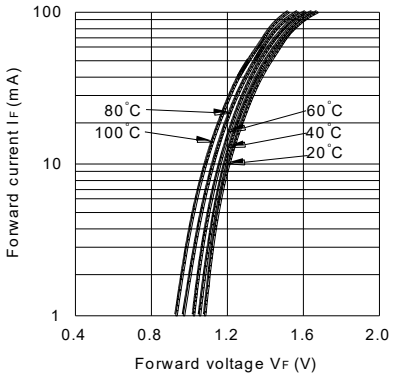



Fig.5 On-state Voltage vs. Ambient Temperature

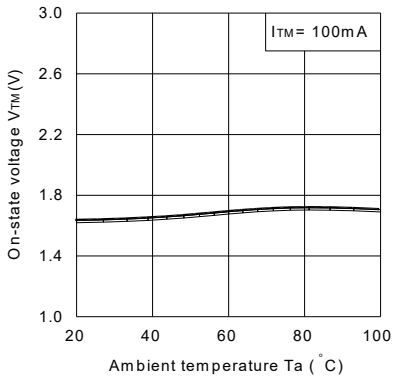
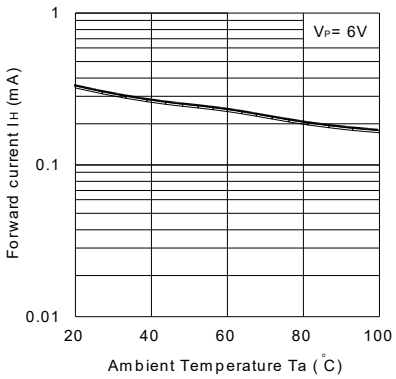



Fig.6 Holding Current vs. Ambient Temperature



## CHARACTERISTICS CURVES

Fig.7 Repetitive Peak Off-state Current vs. Temperature

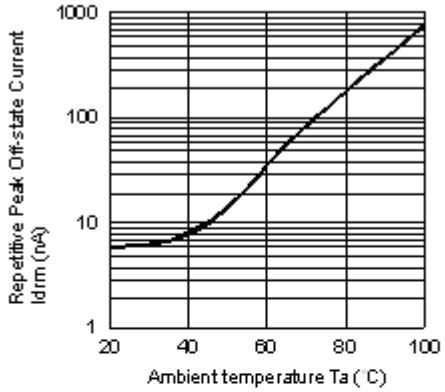
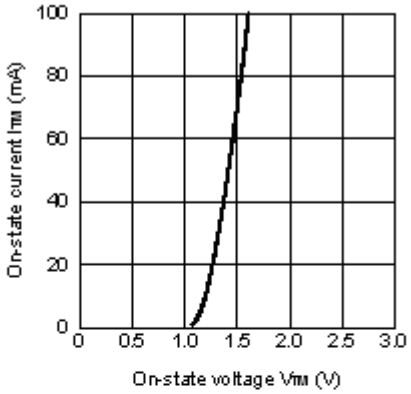
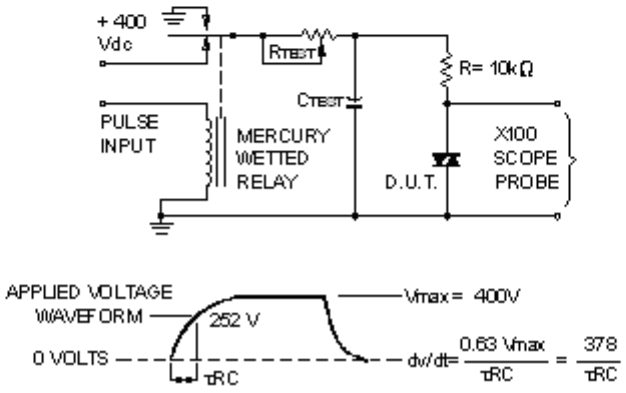


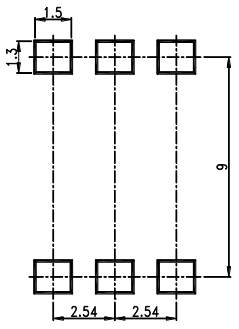

Fig.8 On-state Current vs. On-state Voltage




Static dv/dt Test Circuit




## RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)




Unit : mm

## Contact Information

TANI website: **http://www.tanisemi.com** Email:tani@tanisemi.com For additional information, please contact your local Sales Representative.



***Product Specification Statement***

*The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.*

*The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up -to- date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.*

*TANI reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with TANI to ensure that the prod uct specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult TANI in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.*

*Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.*

*The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.*

*Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third- party legal rights. TANI shall assume no responsibility for any disputes or controv ersies arising from the above-mentioned issues in any form.*