

## FEATURES

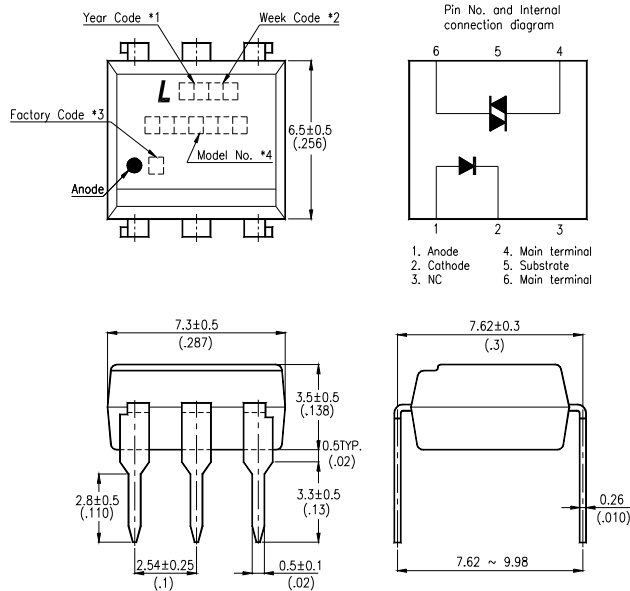
- \* Isolation voltage between input and output  $V_{iso} : 5,000V_{rms}$
- \* 6pin DIP photocoupler, triac driver output
- \* High repetitive peak off-state voltage  $V_{DRM} : \text{Min. } 600V$
- \* High critical rate of rise of off-state voltage  
(  $dv/dt : \text{MIN. } 1000V / \mu s$  )
- \* Dual-in-line package :  
MOC3052
- \* Wide lead spacing package :  
MOC3052M
- \* Surface mounting package :  
MOC3052S
- \* Tape and reel packaging :  
MOC3052S-TA1
- \* UL approved ( No. E113898 )
- \* CSA approved ( No. CA91533-1 )
- \* FIMKO approved ( No. 15469 )
- \* NEMKO approved ( No. P00102123 )
- \* DEMKO approved ( No. 309968-01 )
- \* SEMKO approved ( No. 0032019/01-11 )
- \* VDE approved (No. 094722 )

## APPLICATION

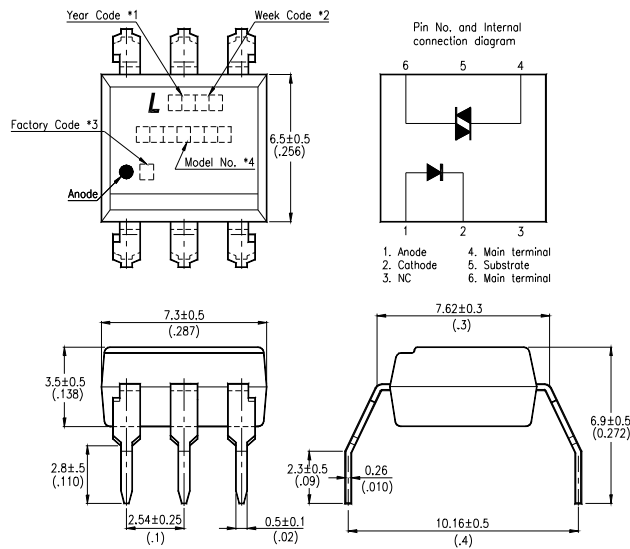
- \* Incandescent Lamp Dimmers
- \* Interfacing Microprocessors to 115 and 240 Vac Peripherals
- \* Lamp Ballasts
- \* Motor Controls
- \* Solid State Relays
- \* Static AC Power Switch
- \* Solenoid / Valve Controls
- \* Temperature Controls

## OUTLINE DIMENSIONS

### Dual-in-line package :



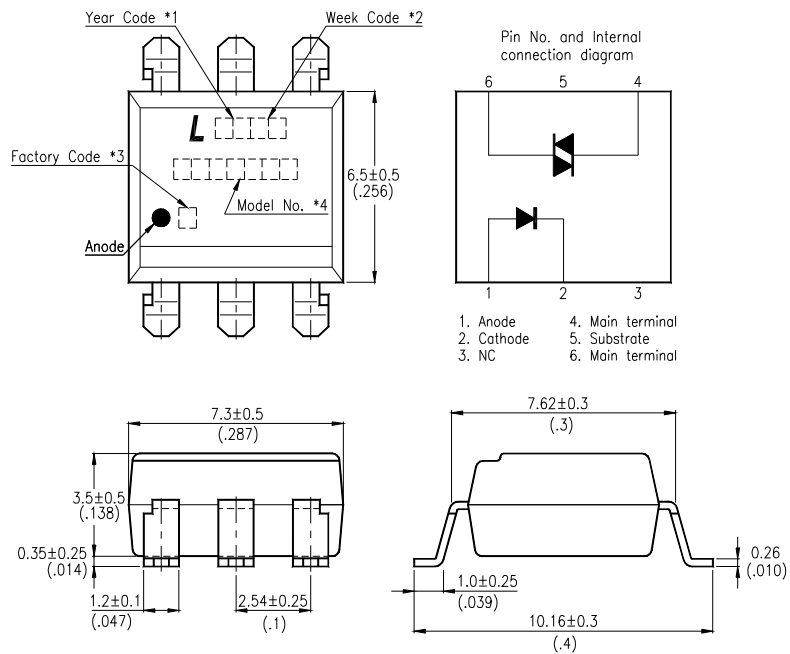
### Wide lead spacing package:



- \*1. Year date code.
- \*2. 2-digit work week.
- \*3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand).
- \*4. Model No.: MOC3052

## OUTLINE DIMENSIONS

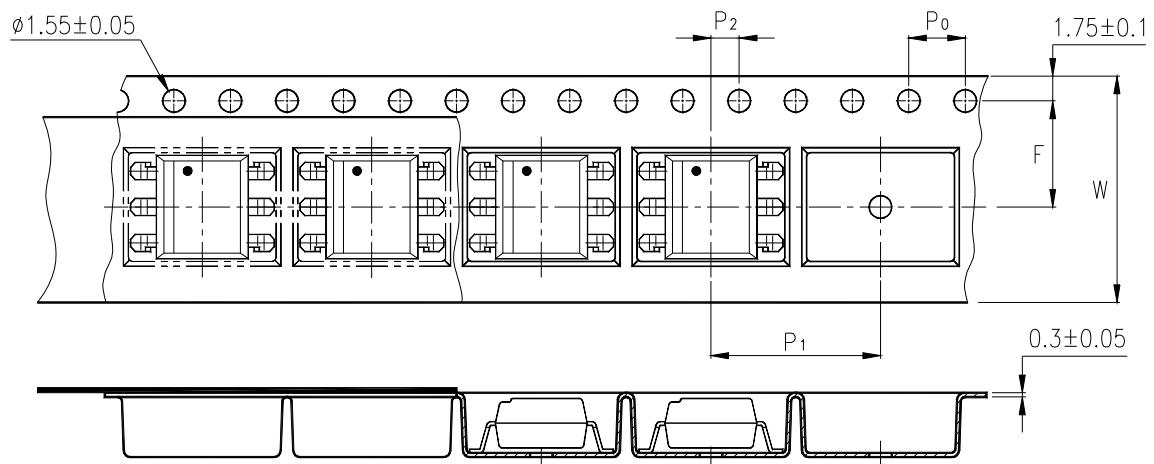
Surface mounting package :



- \*1. Year date code.
- \*2. 2-digit work week.
- \*3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand).
- \*4. Model No.: MOC3052

## TAPING DIMENSIONS

Tape and reel package :  
MOC3052S-TA1



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

## ABSOLUTE MAXIMUM RATING

( Ta = 25°C )

PARAMETER		SYMBOL	RATING	UNIT
INPUT	Forward Current	I <sub>F</sub>	50	mA
	Reverse Voltage	V <sub>R</sub>	6	V
	Power Dissipation	P <sub>D</sub>	100	mW
OUTPUT	Off-State Output Terminal Voltage	V <sub>DRM</sub>	600	V
	Peak Repetitive Surge Current ( PW=100μs, 120pps )	I <sub>TSM</sub>	1	A
	Collector Power Dissipation	P <sub>C</sub>	300	mW
Total Power Dissipation		P <sub>tot</sub>	330	mW
*1	Isolation Voltage	V <sub>iso</sub>	5,000	V <sub>rms</sub>
Ambient Operating Temperature Range		T <sub>A</sub>	-40 ~ +100	°C
Storage Temperature Range		T <sub>stg</sub>	-55 ~ +150	°C
*2	Soldering Temperature	T <sub>L</sub>	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	$\mu A$	$V_R=6V$
OUTPUT	*1 Peak Blocking Current, Either Direction	$I_{DRM}$	—	—	100	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/ $\mu s$	
COUPLED	*3 Led Trigger Current, Current Required to Latch Output, Either Direction	$I_{FT}$	—	—	10	mA	Main Terminal Voltage = 3V
	Holding Current, Either Direction	$I_H$	—	400	—	$\mu A$	

\*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 10mA for MOC3052 and absolute max  $I_F$  (50mA)

## CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

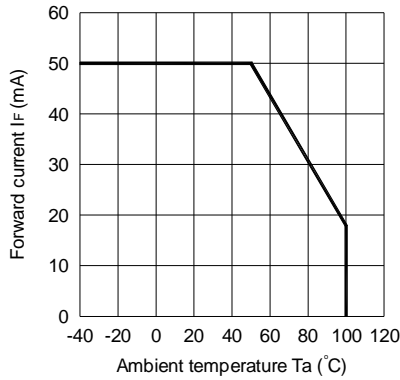


Fig.2 On-state Current vs. Ambient Temperature

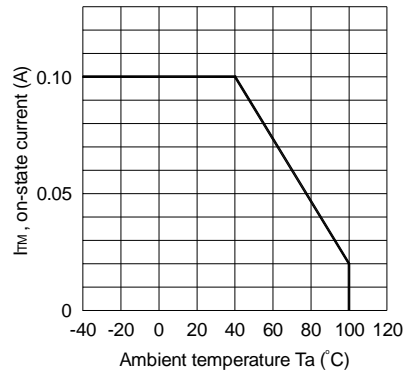


Fig.3 Minimum Trigger Current vs. Ambient Temperature

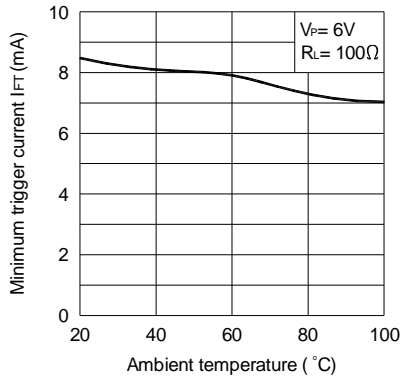


Fig.4 Forward Current vs. Forward Voltage

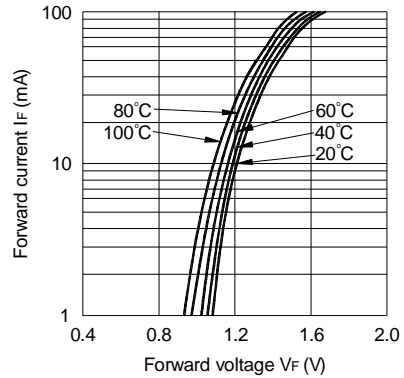


Fig.5 On-state Voltage vs. Ambient Temperature

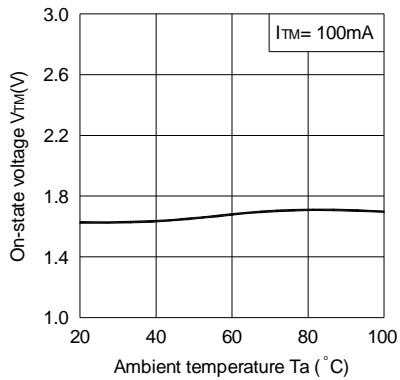
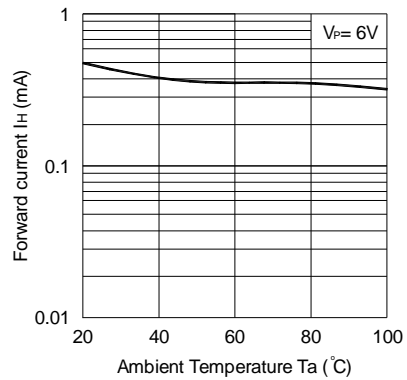


Fig.6 Holding Current vs. Ambient Temperature



## CHARACTERISTICS CURVES

Fig.7 Turn-on Time vs. Forward Current

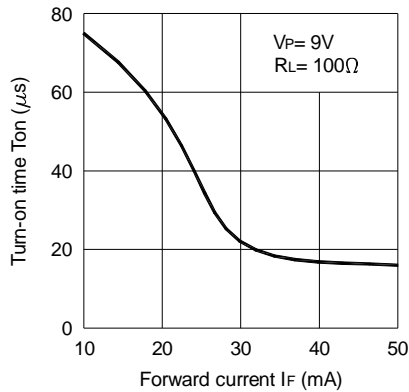


Fig.8 Repetitive Peak Off-state Current vs. Temperature

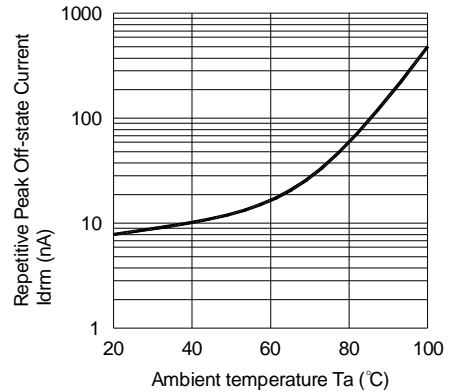
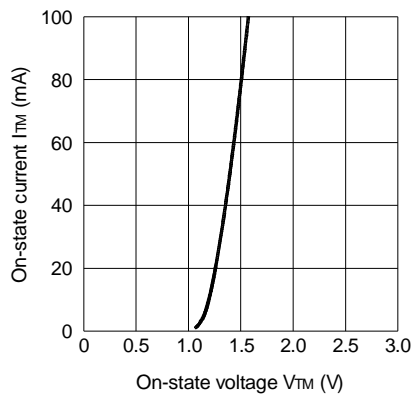
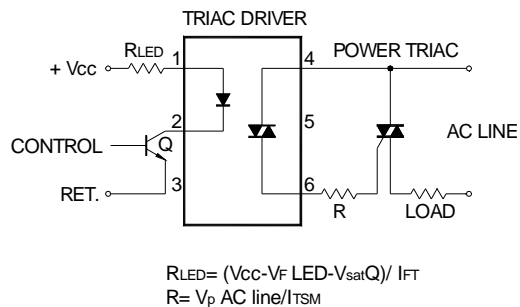


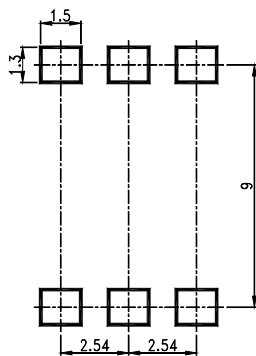
Fig.9 On-state Current vs. On-state Voltage



Basic Driver Circuit



## RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)



Unit : mm



### **Notes:**

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- The products shown in this publication are designed for the general use in electronic applications such as office automation equipment, communications devices, audio/visual equipment, electrical application and instrumentation.
- For equipment/devices where high reliability or safety is required, such as space applications, nuclear power control equipment, medical equipment, etc, please contact our sales representatives.
- When requiring a device for any "specific" application, please contact our sales in advice.
- If there are any questions about the contents of this publication, please contact us at your convenience.
- The contents described herein are subject to change without prior notice.
- No contacting on pin 5.
- Inhibit immersing unit's body in solder paste.