FEATURES

1. This specification shall be applied to photocoupler. Model No. MOC3063 as an option.
2. Applicable Models (Business dealing name)
   * Dual-in-line package :
     MOC3063-V : 1-channel type
   * Wide lead spacing package :
     MOC3063M-V : 1-channel type
   * Surface mounting package :
     MOC3063S-V : 1-channel type
   * Tape and reel packaging :
     MOC3063S TA1-V
3. The relevant models are the models Approved by VDE
   according to DIN VDE 0884:1992-06

   Approved Model No.: MOC3063 / MOC3063M / MOC3063S /

   VDE approved No.: 094722

   (According to the specification DIN VDE 0884:1992-06)

   * Operating isolation voltage V_{IORM} : 850V (Peak)
   * Transient voltage V_{TR} : 6000V (Peak)
   * Pollution : 2 (According to VDE 0110-1 : 1997-04)
   * Clearances distance (Between input and output) : 7.0mm (MIN.)
   * Creepage distance (Between input and output) : 7.0mm (MIN.)
   * Isolation thickness between input and output : 0.4mm (MIN.)
   * Safety limit values Current (Isi) : 400mA (Diode side)
     Power (Psi) : 700mW (Phototransistor side)
     Temperature(Tsi) : 175°C

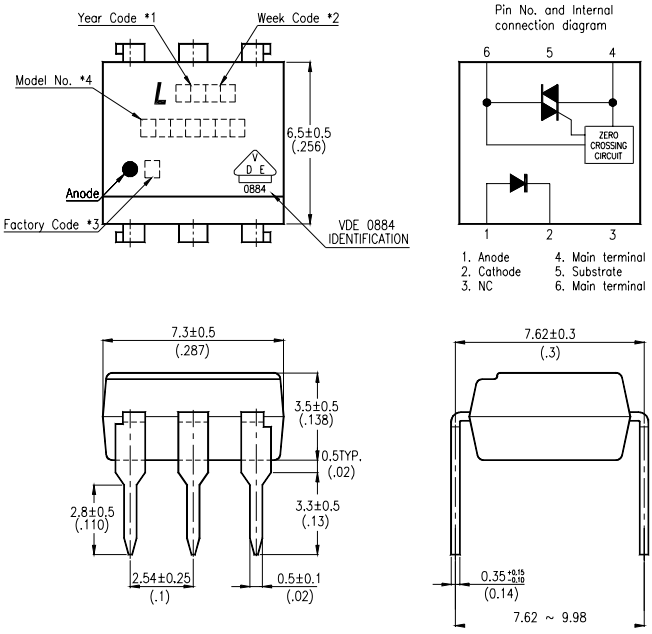
     In order to keep safety electric isolation of photocoupler, please set the protective circuit to keep within safety limit values when the actual application equipment troubled.

   * Indication of VDE 0884 approval prints " 

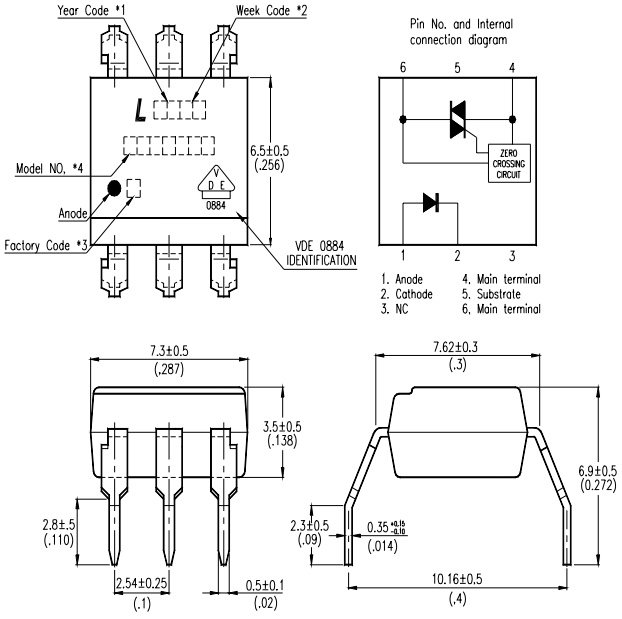
" on sleeve package.

OUTLINE DIMENSIONS

Dual-in-line package :



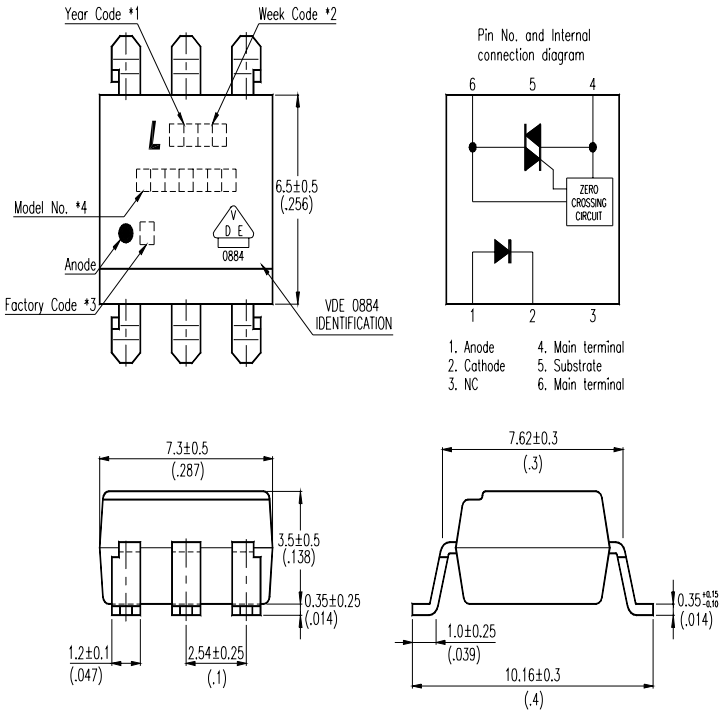
Wide lead spacing package:



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

OUTLINE DIMENSIONS

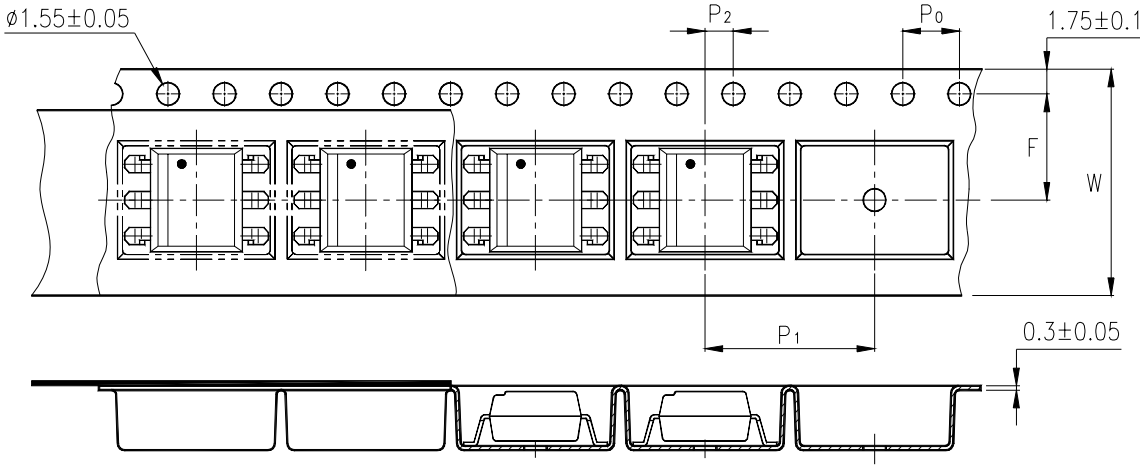
Surface mounting package :



*1. Year date code.
*2. 2-digit work week.
*3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand, X : China).
*4. Model MOC3063

TAPING DIMENSIONS

Tape and reel package (TYPE I):
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 P_2	7.5 ± 0.1 (.295) 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	600	1500	—	V/μs	
COUPLED	*3 Led Trigger Current, Current Required to Latch Output, Either Direction	I_{FT}	—	—	5	mA	Main Terminal Voltage = 3V
	Holding Current, Either Direction	I_H	—	400	—	μA	
	Turn-On Time	T_{ON}	—	8	20	μs	V_P=9V, I_F=20mA R_L = 100Ω
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-V) and absolute max I_F (50mA)

ISOLATION SPECIFICATION ACCORDING TO VDE 0884

Parameter		Symbol	Conditions	Rating	Unit	Remark
Class of environmental test		-	DIN IEC68	30/100/21	-	
Pollution		-	DIN VDE0110	2	-	
Maximum Operating Isolation Voltage		V_{IORM}	-	850	V_{PEAK}	Refer to the Diagram 1, 2
Partial Discharge Test Voltage (Between Input and Output)	Diagram 1	Vpr	tp=60s, qc<5pC	1275	V_{PEAK}	
	Diagram 2		tp=1s, qc<5pC	1594	V_{PEAK}	
Maximum Over-voltage		$V_{INITIAL}$	t_{INI} = 10s	6000	V_{PEAK}	
Safety Maximum Ratings						Refer to the Figure 1, 3
1) Case Temperature		Tsi	I_F = 0, Pc = 0	130	°C	
2) Input Current		Isi	Pc=0	55	mA	
3) Electric Power (Output or Total Power Issipation)		Psi	-	160	mW	
Isolation Resistance (Test Voltage Between Input and Output : DC500V)		R_{ISO}	Ta=Tsi	MIN.10^9	Ω	
			Ta=Topr(MAX.)	MIN.10^{11}		
			Ta=25 °C	MIN.10^{12}		

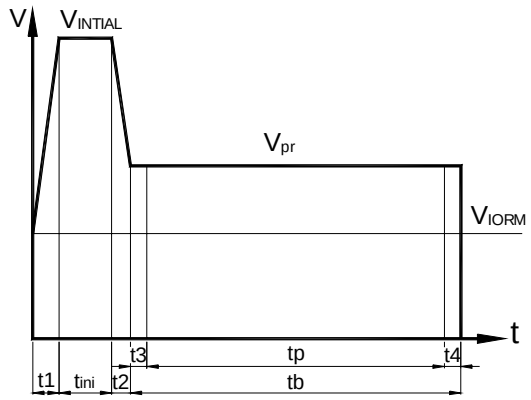
Precautions in performing isolation test

* Partial discharge test methods shall be the ones according to the specifications of VDE 0884:1992-06

* Please don't carry out isolation test (Viso) over $V_{INITIAL}$,This product deteriorates isolation characteristics by partial discharge due to applying high voltage (ex. $V_{INITIAL}$). And there is possibility that this product occurs partial discharge in operating isolation voltage (V_{IORM})

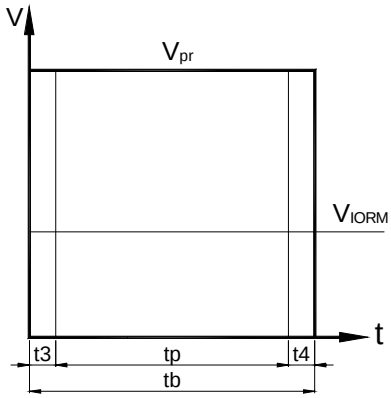
PARTIAL DISCHARGE TEST METHOD

Method (A) for type testing and random testing.



t1, t2 = 1 to 10s
t3, t4 = 1s
tp (Partial Discharge Measuring Time)= 60s
tb = 62s
tini = 10s

Method (B) for routine testing.



t3, t4 = 0.1s
tp (Partial Discharge Measuring Time)= 1s
tb = 1.2s

The partial discharge level shall not exceed 5 pC during the partial discharge measuring time interval t_p under the test conditions shown above.

CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

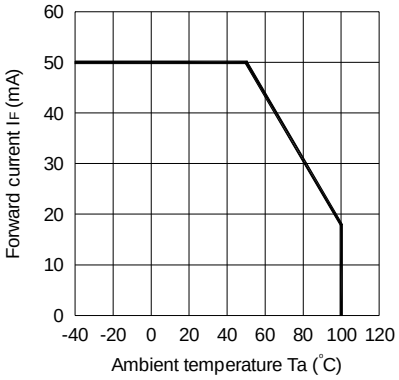


Fig.2 On-state Current vs. Ambient Temperature

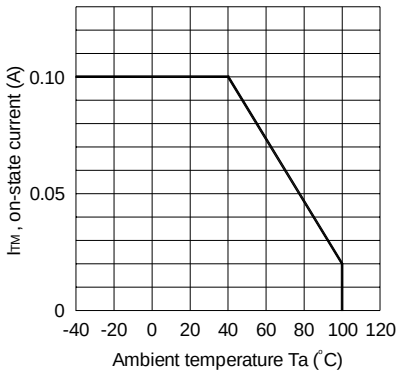


Fig.3 Minimum Trigger Current vs. Ambient Temperature

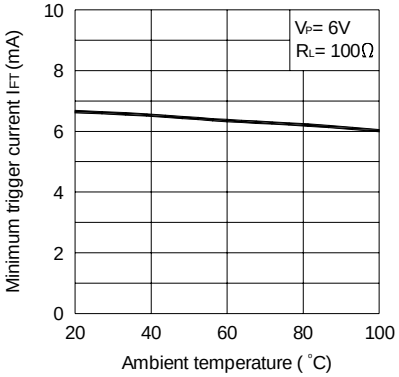


Fig.4 Forward Current vs. Forward Voltage

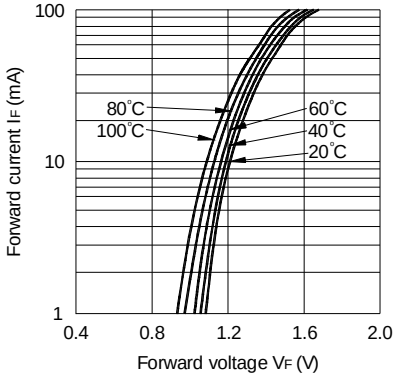


Fig.5 On-state Voltage vs. Ambient Temperature

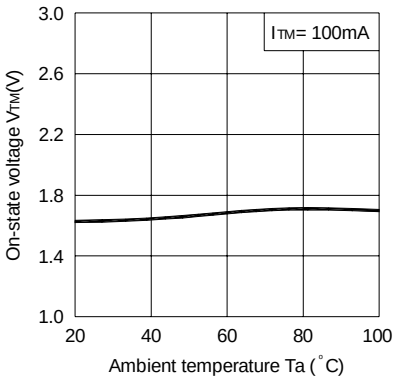
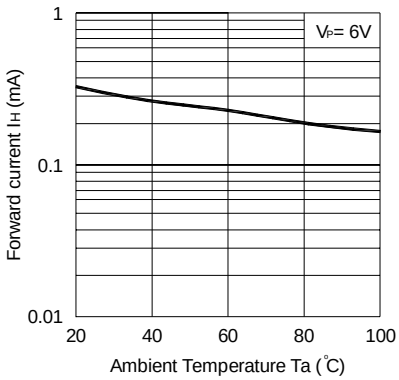


Fig.6 Holding Current vs. Ambient Temperature



CHARACTERISTICS CURVES

Fig.7 Turn-on Time vs. Forward Current

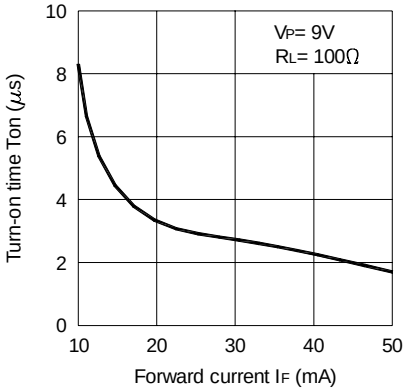


Fig.8 Repetitive Peak Off-state Current vs. Temperature

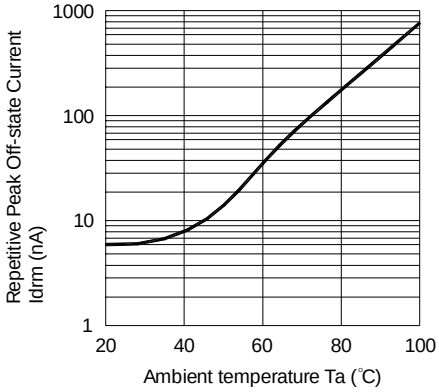
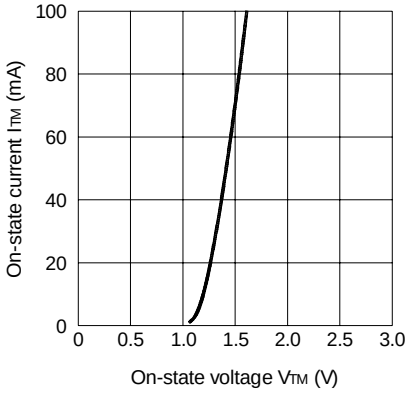
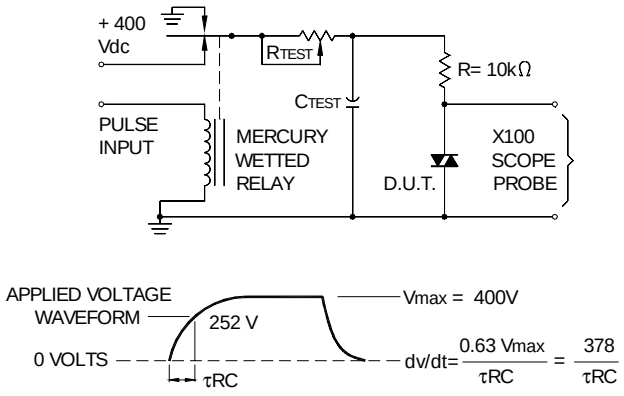


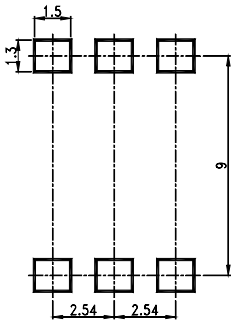
Fig.9 On-state Current vs. On-state Voltage



Static dv/dt Test Circuit



RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)



Unit : mm