

LITEON LITE-ON TECHNOLOGY CORPORATION

Property of Lite-on Only

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. 800V
- * High critical rate of rise of off-state voltage
(dv/dt : MIN. 800V / μ s)
- * Dual-in-line package :
MOC3083
- * Wide lead spacing package :
MOC3083M
- * Surface mounting package :
MOC3083S
- * Tape and reel packaging :
MOC3083S-TA1
- * UL approved (No. E113898)
- * CUL approved (No. E113898)
- * FIMKO approved (No. 15469)
- * NEMKO approved (No. P00102123)
- * DEMKO approved (No. 309968-01)
- * SEMKO approved (No. 0032019/01-11)
- * VDE approved (No. 094722)

APPLICATIONS

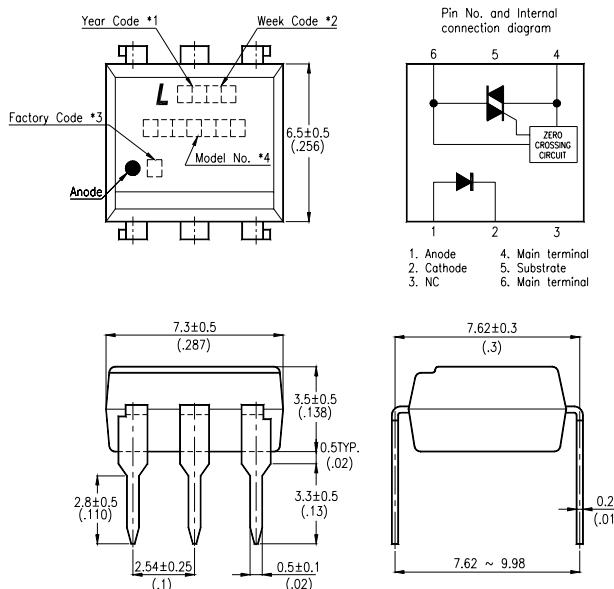
- * AC Motor Drives
- * AC Motor Starters
- * E.M. Contactors
- * Lighting Controls
- * Solenoid/Valve Controls
- * Solid State Relays
- * Static Power Switches
- * Temperature Controls

LITEON LITE-ON TECHNOLOGY CORPORATION

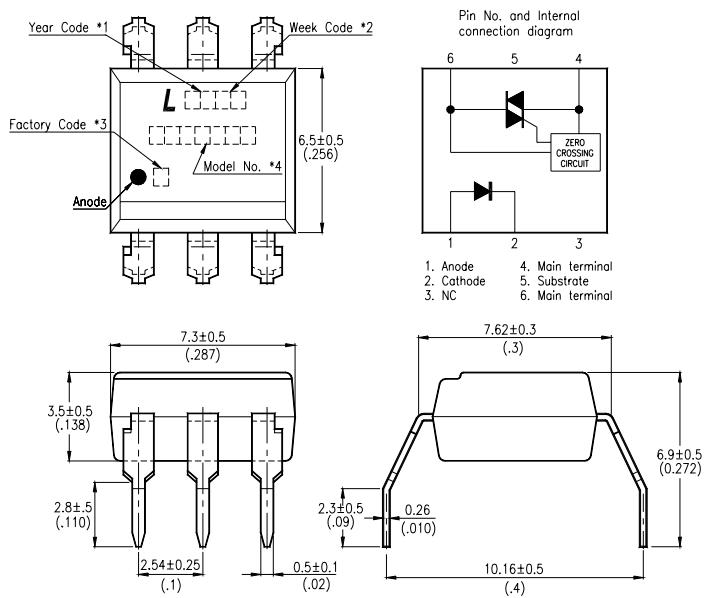
Property of Lite-on Only

OUTLINE DIMENSIONS

Dual-in-line package :



Wide lead spacing package:



*1. Year date code.

*2. 2-digit work week.

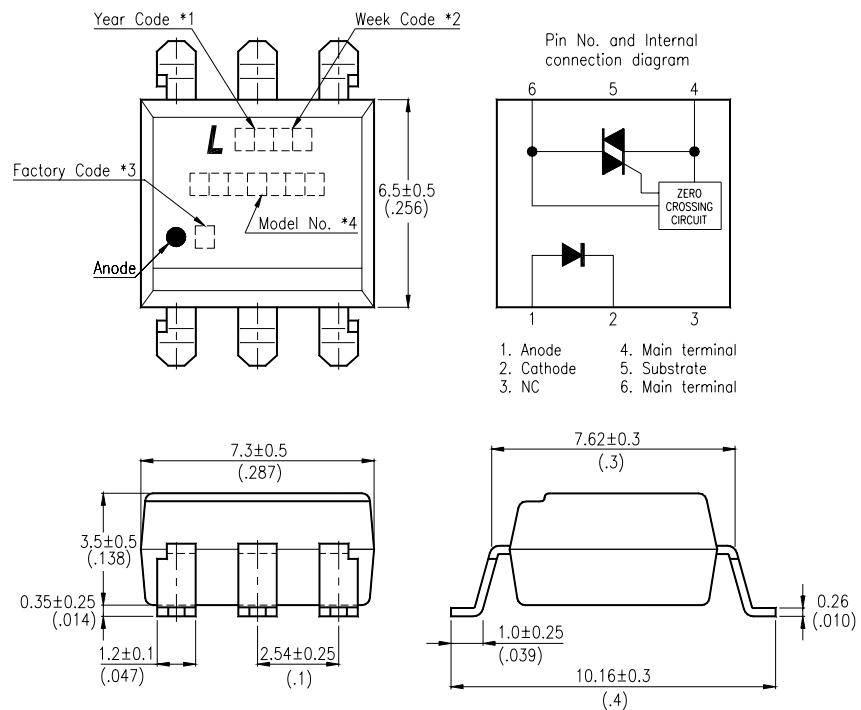
*3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand).

*4. Model No.: MOC3083

LITEON LITE-ON TECHNOLOGY CORPORATION
Property of Lite-on Only

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).

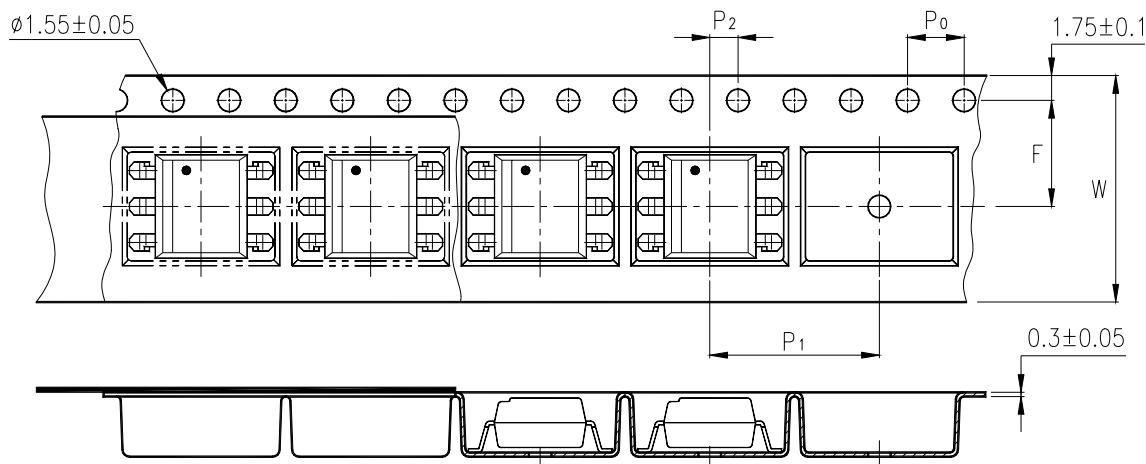
*4. Model No.: MOC3083

LITEON LITE-ON TECHNOLOGY CORPORATION
Property of Lite-on Only

TAPING DIMENSIONS

Tape and reel package :

MOC3083S-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	7.5 ± 0.1 (.295)
Distance of compartment to compartment	P_2	2 ± 0.1 (.079)
	P_1	12 ± 0.1 (.472)

LITEON LITE-ON TECHNOLOGY CORPORATION
Property of Lite-on Only

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}	800	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

LITEON LITE-ON TECHNOLOGY CORPORATION
Property of Lite-on Only

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} = 800V
	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	800	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 MOC3083 and absolute max I_F (50mA)

LITEON LITE-ON TECHNOLOGY CORPORATION

Property of Lite-on Only

CHARACTERISTICS CURVES

Fig.1 Forward Current vs.
Ambient Temperature

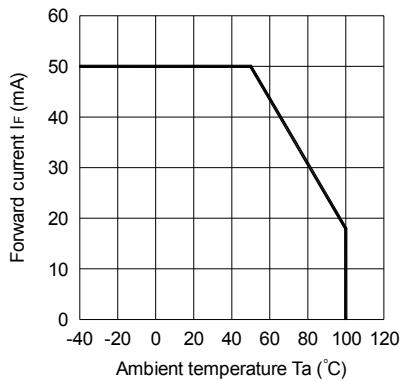


Fig.2 On-state Current vs. Ambient
Temperature

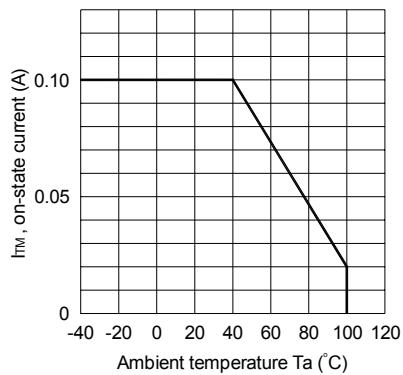


Fig.3 Minimum Trigger Current
vs. Ambient Temperature

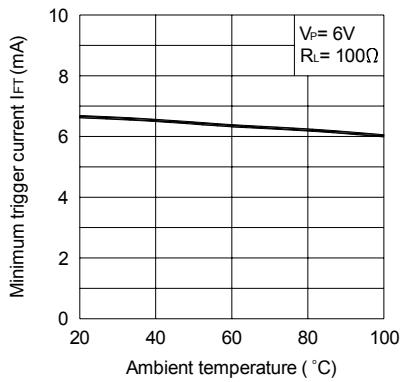


Fig.4 Forward Current vs. Forward
Voltage

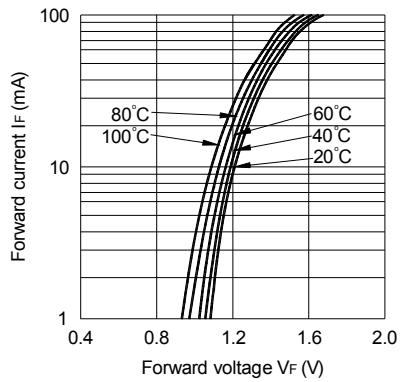


Fig.5 On-state Voltage vs. Ambient
Temperature

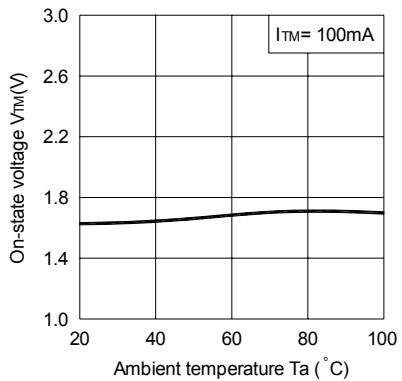
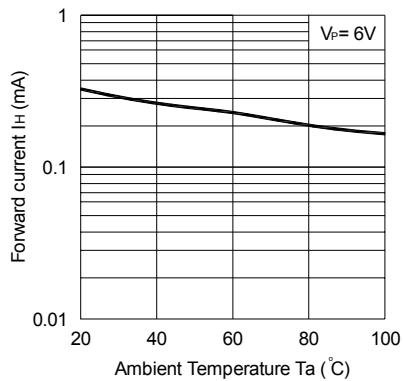


Fig.6 Holding Current vs.
Ambient Temperature



LITEON LITE-ON TECHNOLOGY CORPORATION

Property of Lite-on Only

CHARACTERISTICS CURVES

Fig.7 Turn-on Time vs. Forward Current

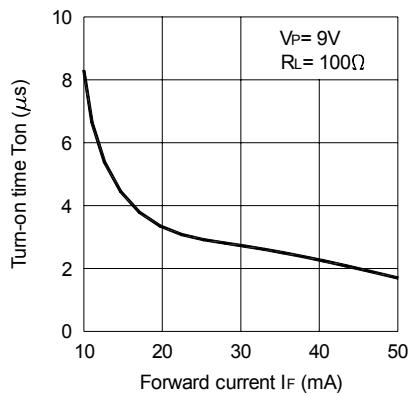


Fig.8 Repetitive Peak Off-state Current vs. Temperature

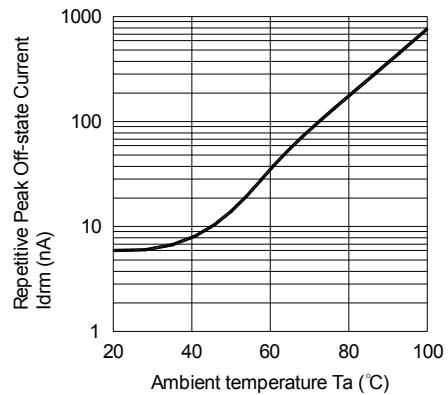
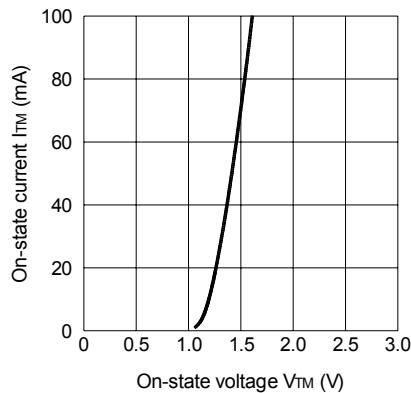
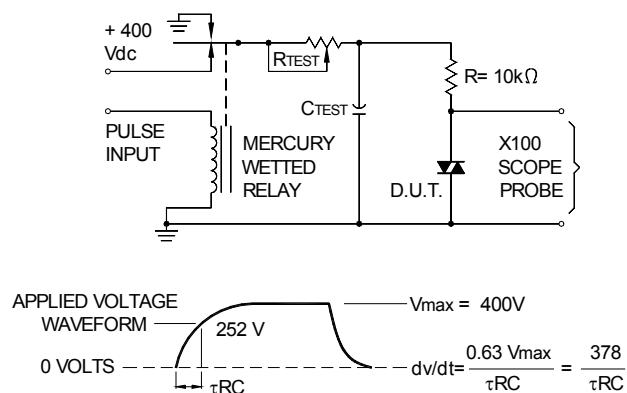


Fig.9 On-state Current vs. On-state Voltage



Static dv/dt Test Circuit



RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)

