FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

COMPONENT - OPTICAL ISOLATORS
(FPQU2,FPQU8)

Manufacturer: SEE ADDENDUM FOR MANUFACTURER LOCATIONS

161116 (Party Site)
Applicant: EVERLIGHT ELECTRONICS CO LTD
(812081-001) 6-8 ZHONGHUA RD SHULIN DISTRICT
NEW TAIPEI
23860 TAIWAN

161116 (Party Site)
Recognized Company: SAME AS APPLICANT
(812081-001)

This Follow-Up Service Procedure authorizes the above Manufacturer(s) to use the marking specified by UL LLC, or any authorized licensee of UL LLC, including the UL Contracting Party, only on products when constructed, tested and found to be in compliance with the requirements of this Follow-Up Service Procedure and in accordance with the terms of the applicable service agreement with UL Contracting Party and any applicable Service Terms. The UL Contracting Party for Follow-Up Services is listed on addendum to this Follow-Up Service Procedure ("UL Contracting Party"). UL Contracting Party and UL LLC are referred to jointly herein as "UL."

UL further defines responsibilities, duties and requirements for both Manufacturers and UL representatives in the document titled, "UL Mark Surveillance Requirements" that can be located at the following web-site: http://www.ul.com/fus and in the document titled "UL and Subscriber Responsibilities" that can be located at the following website: http://www.ul.com/responsibilities. Manufacturers without Internet access may obtain the current version of these documents from their local UL customer service representative or UL field representative. For assistance, or to obtain a paper copy of these documents or the applicable Service Terms, please contact UL's Customer Service at http://ul.com/aboutul/locations/, select a location and enter your request, or call the number listed for that location.

The Applicant, the specified Manufacturer(s) and any Recognized Company in this Follow-Up Service Procedure must agree to receive Follow-Up Services from UL Contracting Party. If your applicable agreement is a Global Services Agreement ("GSA") with an effective date of January 1, 2012 or later and this Follow-Up Service Procedure is issued on or after that effective date, the Applicant, the specified Manufacturer(s) and any Recognized Company will be bound to a Service Agreement for Follow-Up Services upon the earliest by any Subscriber of use of the prescribed UL Mark, acceptance of the factory inspection, or payment of the Follow-Up Service fees which will incorporate such GSA, this Follow-Up Service Procedure and the Follow-Up Service Terms which can be accessed by clicking here: http://www.ul.com/contracts/Terms-After-12-31-2011. In all other events, Follow-Up Services will be governed by and incorporate the terms of your applicable service agreement and this Follow-Up Service Procedure.

It is the responsibility of the Recognized Company to make sure that only the products meeting the aforementioned requirements bear the authorized Marks of UL LLC, or any authorized licensee of UL LLC.

This Follow-Up Service Procedure contains information for the use of the above Manufacturer(s) and representatives of UL and is not to be used for any other purpose. It is provided to the Manufacturer with the understanding that it will be returned upon request and is not to be copied in whole or in part.

This Follow-Up Service Procedure, and any subsequent revisions, is the property of UL and is not transferable. This Follow-Up Service Procedure contains confidential information for use only by the above named Manufacturer(s) and representatives of UL and is not to be used for any other purpose. It is provided to the Subscribers with the understanding that it is not to be copied, either wholly or in part unless specifically allowed, and that it will be returned to UL, upon request.

Capitalized terms used but not defined herein have the meanings set forth in the GSA and the applicable Service Terms or any other applicable UL service agreement.

UL shall not incur any obligation or liability for any loss, expense or damages, including incidental, consequential or punitive damages arising out of or in connection with the use or reliance upon this Follow-Up Service Procedure to anyone other than the above Manufacturer(s) as provided in the agreement between UL LLC or an authorized licensee of UL LLC, including UL Contracting Party, and the Manufacturer(s).

UL LLC has signed below solely in its capacity as the accredited entity to indicate that this Follow-Up Service Procedure is in compliance with the accreditation requirements.

Bruce A. Mahrenholz
Director
North American Certification Program

LOCATION

164131 (Party Site)
(100105-150) EVERLIGHT ELECTRONIC (CHINA) CO LTD
2135 ZHONG SHAN NORTH RD
WUJIANG ECONOMY DEVELOPMENT ZONE
(YUN XI AREA), SONGLING TOWN
WUJIANG CITY,
JIANG SU 215000 CHINA
Factory ID: NONE
UL Contracting Party for above site is: UL AG

1732897 (Party Site)
Everlight Electronics Co Ltd Tongluo Plant
26 Zhongxing Rd
Tongluo Township
Miaoli Hsien
36647 TAIWAN
Factory ID: T
UL Contracting Party for above site is: UL AG

Recognized Component Marking Data Page (RCMDP)

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

RECOGNIZED COMPONENT MARKING

Products Recognized under UL's Component Recognition Service are identified by marking elements consisting of:

1. The Recognized Company's identification specified in this document.
2. A catalog, model or other applicable product designation specified in the descriptive sections of this document.
3. The UL Recognized Component Mark shown below is optional unless required elsewhere in the Procedure.

Only those components, which actually bear the Marking, should be considered as being covered under the Recognition Program. The UL Listing or Classification Mark is not authorized for use on or in connection with Recognized Components.

Recognized Component Mark

Minimum size of the Recognized Component Mark is not specified as long as it is legible. Minimum height of the registered symbol ® shall be 3/64 inch but may be omitted if it is out of proportion to the Recognized Component Mark or not legible to the naked eye.

The manufacturer may reproduce the Mark electronically. Any decision regarding the acceptability of the manufacturer's Mark reproduction will be made at the Reviewing Office.

THIS FORM PAGE IS TO BE REVISED BY THE NORTHBROOK LABEL DEPARTMENT ONLY

Recognized Component Marking Data Page (RCMDP)

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

RECOGNIZED COMPONENT MARKING

Products Recognized under UL's Component Recognition Service are identified by marking elements consisting of:

1. The Recognized Company's identification specified in this document.
2. A catalog, model or other applicable product designation specified in the descriptive sections of this document.
3. The UL Recognized Component Mark shown below:
   (A) Recognized only to Canadian safety requirements, or;
   (B) Recognized to both U.S. and Canadian safety requirements.

Only those components, which actually bear the Marking, should be considered as being covered under the Recognition Program. The UL Listing or Classification Mark is not authorized for use on or in connection with Recognized Components.

Recognized Component Mark

(A)

(B)

Minimum size of the Recognized Component Mark is not specified as long as it is legible. Minimum height of the registered symbol ® shall be 3/64 inch but may be omitted if it is out of proportion to the Recognized Component Mark or not legible to the naked eye.

The manufacturer may reproduce the Mark electronically. Any decision regarding the acceptability of the manufacturer's Mark reproduction will be made at the Reviewing Office.

THIS FORM PAGE IS TO BE REVISED BY THE NORTHBROOK LABEL DEPARTMENT ONLY

GENERAL

PRODUCT COVERED:

Component - Optical Isolators.

MANUFACTURING LOCATION and Identification:

(MULTIPLE) MANUFACTURING LOCATIONS:

The products in this Follow-Up Service Procedure are manufactured at more than one location. The Manufacturer's I.D. Marking shown below shall be marked on each unit to identify the unit as the product of a particular factory. Permanency of Marking is not required for the Manufacturer's ID Markings.

Please see the Addendum to Authorization Page for Factory Location and ID ▫

MARKING:

USR - Recognized company name or trademark, and model designation provided on each unit.

CNR - Recognized company name or trademark, model designation, and the Recognized Component Mark for Canada , provided on each unit.

TRADEMARK DESIGNATION:

The following trademark or trade name, if any, may be used to identify products described in this Procedure in lieu of the Listee and/or Recognized Company name. The company identification is the Recognized Company's name or trademark.

Or Or

Everlight , EL

RATINGS:

Specification Sheet - The rating information specified below shall appear in the manufacturer's specifications for the product and may be expressed in tabular or graphic format:

1. Maximum continuous power, a current, and voltage rating for both the photo-emitter and the photo-sensor circuits.
2. A dielectric insulation-voltage rating between input and output terminals, specified in volts rms, or dc, as applicable.
3. The maximum operating temperature.
4. Derating specifications related to ambient temperatures.

GENERAL CONSTRUCTION:

Corrosion Protection - All ferrous parts are of corrosion resistant material or are plated or painted as corrosion protection.

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Model Numbers	Section	Date	Requirements Evaluated to (US and/or CN)
Double Protection Optical isolators, Models 817, CNY75, CQY80, EL101, EL101L, EL101XH, EL111, EL121, EL121N, EL124, EL124N, EL151, EL161, EL354, EL354L, EL354N, EL355, EL355L, EL356, EL356N, EL357, EL357L, EL357N, EL357NH, EL357NL, EL3571N, EL359, EL610, EL617, EL7X7, EL8X4, EL8X5, EL8X6, EL8X7, EL8X9, EL844, EL845, EL847, EL2501, EL2561, EL2701, EL2701N, EL2705, EL2705N, EL817H, EL817L, EL8171, EL9001, HS817, K233, K817P, TCDT110, TCDT111, TCDT112, TCET110, TCET111, TCET120, VO610A, and, VO615A. "X" may be **0** to 9. Double Protection Optical isolators, Models 4N, MCT2, CNY17, MOC811, H11A, MOC810, TIL11, CNX3 and SL55. Double Protection Optical Isolators, Models EL3010, EL3011, EL3012, EL3013, EL3014, EL3020, EL3021, EL3022, EL3023, EL3024, EL3050, EL3051, EL3052, EL3053, EL3054, EL3030, EL3031, EL3032, EL3033, EL3034, EL3040, EL3041, EL3042, EL3043, EL3044, EL3060, EL3061, EL3062, EL3063, EL3064, EL3070, EL3071, EL3072, EL3073, EL3074, EL3080, EL3081, EL3082, EL3083, EL3084, EL3161, EL3162, EL3163, ELM4, ELM6, H11AA1, H11AA2, H11AA3, H11AA4, 4N29, 4N30, 4N31, 4N32, 4N33, H11B1, H11B2, H11B3, H11B255, H11L1, H11L2, H11L3, MOC119, MOC8020, MOC8021, MOC8030, MOC8050, MOC8080, TIL113. Double Protection Optical isolators, Models EL280, EL281, EL2801, EL3H4, EL3H7, EL3H7H, EL3H7L, and EL3H71. Double Protection Optical Isolators, Models EL205, EL206, EL207, EL208, EL211, EL212, EL213, EL215, EL216, EL217, ELD205, ELD206, ELD207, ELD208, ELD211, ELD213, and ELD217. Double Protection Optical Isolators, Models ELD3H4, ELD3H5, ELD3H6, ELD3H7, ELQ3H4, ELQ3H5, ELQ3H7. All Models may be followed by any letters or numbers.	1	2001-02-27	US, CN

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File E214129
Project 00CA06189

February 27, 2001

REPORT

ON

COMPONENT - OPTICAL ISOLATORS

Everlight Electronics Co., Ltd.
Tucheng, Taipei, Taiwan

DESCRIPTION

PRODUCT COVERED:

USR, CNR Component – Double Protection Optical isolators, Models 817, CNY75, CQY80, EL101, EL101L, EL101XH, EL111, EL121, EL121N, EL124, EL124N, EL151, EL161, EL354, EL354L, EL354N, EL355, EL355L, EL356, EL356N, EL357, EL357L, EL357N, EL357NH, EL357NL, EL3571N, EL359, EL610, EL617, EL7X7, EL8X4, EL8X5, EL8X6, EL8X7, EL8X9, EL844, EL845, EL847, EL2501, EL2561, EL2701, EL2701N, EL2705, EL2705N, EL817H, EL817L, EL8171, EL9001, HS817, K233, K817P, TCDT110, TCDT111, TCDT112, TCET110, TCET111, TCET120, VO610A, and, VO615A. "X" may be **0** to 9.

USR, CNR Component – Double Protection Optical isolators, Models 4N, MCT2, CNY17, MOC811, H11A, MOC810, TIL11, CNX3 and SL55.

USR, CNR Component – Double Protection Optical Isolators, Models EL3010, EL3011, EL3012, EL3013, EL3014, EL3020, EL3021, EL3022, EL3023, EL3024, EL3050, EL3051, EL3052, EL3053, EL3054, EL3030, EL3031, EL3032, EL3033, EL3034, EL3040, EL3041, EL3042, EL3043, EL3044, EL3060, EL3061, EL3062, EL3063, EL3064, EL3070, EL3071, EL3072, EL3073, EL3074, EL3080, EL3081, EL3082, EL3083, EL3084, EL3161, EL3162, EL3163, ELM4, ELM6, H11AA1, H11AA2, H11AA3, H11AA4, 4N29, 4N30, 4N31, 4N32, 4N33, H11B1, H11B2, H11B3, H11B255, H11L1, H11L2, H11L3, MOC119, MOC8020, MOC8021, MOC8030, MOC8050, MOC8080, TIL113.

USR, CNR Component – Double Protection Optical isolators, Models EL280, EL281, EL2801, EL3H4, EL3H7, EL3H7H, EL3H7L, and EL3H71.

USR, CNR Component – Double Protection Optical Isolators, Models EL205, EL206, EL207, EL208, EL211, EL212, EL213, EL215, EL216, EL217, ELD205, ELD206, ELD207, ELD208, ELD211, ELD213, and ELD217.

USR, CNR Component – Double Protection Optical Isolators, Models ELD3H4, ELD3H5, ELD3H6, ELD3H7, ELQ3H4, ELQ3H5, ELQ3H7.

All Models may be followed by any letters or numbers.

GENERAL:

These devices are photocoupled isolators consisting of a gallium arsenide light emitting diode, optically coupled to a silicone phototransistor. They are intended to be used in applications where the suitability of the combination has been determined by Underwriters Laboratories Inc. Only the insulating function, for the rated dielectric insulation voltage, between the input and output of the device has been investigated.

MAXIMUM RATINGS CONTINUED (at nominal operating temperature) Cont'd:

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL101	60	50	100	150	5000	110	125	125
EL101L	60	50	100	150	5000	110	125	125
EL101XH	**60**	**50**	**100**	**150**	**5000**	**125**	**130**	**150**
EL111	60	50	100	150	5000	110	125	125
EL121, EL121N	50	50	70	150	3750	110	125	125
EL124, EL124N	50	50	70	150	3750	110	125	125
EL205	60	150	90	150	3750	110	125	150
EL151	60	100	100	150	5000	110	125	125
EL161	60	50	100	150	5000	110	125	125
ELD205	60	150	90	150	3750	110	125	150
EL206	60	150	90	150	3750	110	125	150
ELD206	60	150	90	150	3750	110	125	150
EL207	60	150	90	150	3750	110	125	150
ELD207	60	150	90	150	3750	110	125	150
EL208	60	150	90	150	3750	110	125	150
ELD208	60	150	90	150	3750	110	125	150
EL211	60	150	90	150	3750	110	125	150
ELD211	60	150	90	150	3750	110	125	150
EL212	60	150	90	150	3750	110	125	150
EL213	60	150	90	150	3750	110	125	150
ELD213	60	150	90	150	3750	110	125	150
EL215	60	150	90	150	3750	110	125	150
EL216	60	150	90	150	3750	110	125	150
EL217	60	150	90	150	3750	110	125	150
ELD217	60	150	90	150	3750	110	125	150
EL3H4	50	50	70	150	3750	110	125	125
EL3H7	50	50	70	150	3750	110	125	125
EL3H7H	**50**	**50**	**70**	**150**	**3750**	**125**	**130**	**150**
EL3H7L	50	50	70	150	3750	110	125	125
EL3H71	50	50	70	150	3750	110	125	125
EL280	50	50	70	150	3750	110	125	125
EL281	50	50	70	150	3750	110	125	125
EL354, EL354N	50	50	70	150	3750	110	125	125
EL354L	60	50	100	150	5000	110	125	125
EL355	50	80	70	150	3750	110	125	125
EL355L	60	100	100	150	5000	110	125	125
EL356,EL356N	50	50	70	150	3750	110	125	125
EL357,EL357N	50	50	70	150	3750	110	125	125
EL357L	60	50	100	150	5000	110	125	125
EL357NH	**50**	**50**	**70**	**150**	**3750**	**125**	**130**	**150**
EL357NL	50	50	70	150	3750	110	125	125
EL3571N	50	50	70	150	3750	110	125	125
EL359	50	50	70	150	3750	110	125	125
EL610	60	50	100	150	5000	110	125	125
EL617	60	50	100	150	5000	110	125	125
EL7X7	60	50	100	150	5000	110	125	125
4N	60	50	100	150	5000	110	125	125
MCT2	60	50	100	150	5000	110	125	125
CNY17	60	50	100	150	5000	110	125	125
MOC811	60	50	100	150	5000	110	125	125
H11A	60	50	100	150	5000	110	125	125
MOC810	60	50	100	150	5000	110	125	125
TIL11	60	50	100	150	5000	110	125	125
CNX3	60	50	100	150	5000	110	125	125
SL55	60	50	100	150	5000	110	125	125
EL8X4	60	50	100	150	5000	110	125	125
EL8X5	60	80	100	150	5000	110	125	125
EL8X6	60	50	100	150	5000	110	125	125
EL8X7, EL2501, EL2561, 817	60	50	100	150	5000	110	125	125
EL817H	**60**	**50**	**100**	**150**	**5000**	**125**	**130**	**150**
EL817L	60	50	100	150	5000	110	125	125
EL8X9	60	50	100	150	5000	110	125	125
EL2701, EL2701N	50	50	70	150	3750	110	125	125
EL2705, EL2705N	50	50	70	150	3750	110	125	125
EL2801	50	50	70	150	3750	110	125	125

MAXIMUM RATINGS CONTINUED (at nominal operating temperature) Cont'd:

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL8171	60	50	100	150	5000	110	125	125
EL9001	60	50	100	150	5000	110	125	125
H11AA1, H11AA2, H11AA3, H11AA4	60	50	120	150	5000	100	125	125
4N29, 4N30, 4N31, 4N32, 4N33, H11B1, H11B2, H11B3, H11B255, TIL113, MOC119, MOC8020, MOC8021, MOC8030, MOC8050, MOC8080	60	150	120	150	5000	100	125	125
EL3010, EL3011, EL3012, EL3013, EL3014, EL3021, EL3022, EL3020, EL3023, EL3024, EL3050, EL3051, EL3052, EL3053, EL3054, EL3070, EL3071, EL3072, EL3073, EL3074	60	100	100	300	5000	100	125	125
EL3030, EL3031, EL3032, EL3033, EL3034, EL3040, EL3041, EL3042, EL3043, EL3044, EL3061, EL3062, EL3063, EL3060, EL3161, EL3064, EL3162, EL3163, EL3080, EL3081, EL3082, EL3083, EL3084, ELM4, ELM6	60	100	100	300	5000	100	125	125
H11L1, H11L2, H11L3	60	50	120	150	5000	100	125	125
HS817, K817P, TCET110, TCET111, TCET120, VO610A, VO615A	60	50	100	150	5000	110	125	125
CNY75, CQY80, K233, TCDT110, TCDT111, TCDT112	60	50	100	150	5000	110	125	125
ELD3H4, ELD3H6, ELD3H7,	60	50	100	150	3750	110	125	125
ELD3H5	60	100	100	150	3750	110	125	125
ELQ3H4, ELQ3H7	60	50	100	150	3750	110	125	125
ELQ3H5	60	100	100	150	3750	110	125	125
EL844	**60**	**50**	**100**	**150**	**5000**	**110**	**125**	**125**
EL845	**60**	**100**	**100**	**150**	**5000**	**110**	**125**	**125**
EL847	**60**	**50**	**100**	**150**	**5000**	**110**	**125**	**125**

- See ILL. 3 for the Derating Curves of representative models.

ENGINEERING CONSIDERATIONS: (Not for Field Representative's Use)

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Special Considerations - The following items are considerations that were used when evaluating this product.

USR indicates investigation to the U.S. Standard for Safety for Optical Isolators, UL 1577, **5th Edition**.

CNR indicates investigation to the Canadian Standard, CAN/CSA Component Acceptance Service Notice No. 5.

MODEL EL8X7 - FIG. 1

General - Represents Models 817, CNY75, CQY80, EL7X7, EL8X4, EL8X5, EL8X6, EL817L, EL8X9, HS817, EL2501, EL2561, EL8171, K233, K817P, TCDT110, TCDT111, TCDT112, TCET110, TCET111, TCET120, VO610A, VO615A. See ILL. 1 for details of construction.

1. Enclosure - Minimum 0.475 mm thick. Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd. Molded using a high temperature and high pressure process.

   Alternate - Same as above except, Type MP-3000, manufactured by Hitachi Chemical Co. Ltd. (E42956).

* Alternate - Same as above except, Type EME-1100, manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. **(E223871).**

   Alternate - Same as above except, Chang Chun Plastics **Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. (E223871),** Type EME-E110G.

   Alternate - Same as above except, Type CV4180 by Panasonic Electric Works.

2. Window - Epoxy molded resin. Panasonic Electric Works, Ltd., Type CV1400H. Minimum 0.5 mm through insulation spacing between the input and the output circuits. Molded using a high temperature and high pressure process. May be one of the following:

   Alternate - Same as above except, Type NT-8600A, manufactured by Nitto Denko Corp.

   Alternate - Same as above except, Type NT-8600NF, manufactured by Nitto Denko Corp.

   Alternate - Same as above except, Type EC-15, manufactured by Chang Chun Plastics (E59481).

   Alternate - Same as above except, Chang Chun Plastics (E59481), Type EC-15G.

3. Emitter - LED input. Gallium arsenide infrared light emitting diode.

4. Sensor - Bipolar transistor output. Silicon.

5. Junction Coating Material - Silicone resin, Dow Corning, Type JCR-6101UP.

   Alternate - Same as above except, GE-Toshiba, Type TSE3251-H-C.

6. Leads - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

MODEL EL357

*General - Same as models 817, and EL8X7 shown in Fig. 1, except as noted below. See ILL. 2 for construction details. Also represents Models EL101, EL101L, EL111, EL121, EL121N, EL124, EL124N, EL151, EL161, EL354, EL354L, EL354N, EL355, EL355L, EL356, EL356N, EL357L, EL357N, EL357NL, EL359, EL2701, EL2701N, EL2705, EL2705N, and EL3571N.

1. Enclosure - Epoxy molding compound. Minimum 0.4 mm thick. Molded using a high temperature and high pressure process. May be one of the following:

Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd .
*R/C (QMFZ2) EP-Molding. Cat. No. EME-1100, manufactured by Chang Chun Plastics (E59481) /Chang Chun SB (Changshu) Co. Ltd. **(E223871)**.
R/C (QMFZ2) EP-Molding. Cat. No. EME-E110G, manufactured by Chang Chun Plastics Co. Ltd. **(E59481)/Chang** Chun SB (Changshu) Co. Ltd. **(E223871)**.
Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).
R/C (QMFZ2), Type MP-3000, manufactured by Hitachi Chemical Co. Ltd. (E42956).

2. Window - Epoxy molded resin minimum 0.4 mm through insulation spacing between the input and the output circuits. Molded using a high temperature and high pressure process. May be one of the following:

Type CV1400H, manufactured by Panasonic Electric Works, Ltd
Type EC-15L, manufactured by Chang Chun Plastics.
R/C (QMFZ2) EP-Molding. Cat. No. EC-15G, manufactured by Chang Chun Plastics (E59481).
Type NT-8600A, manufactured by Nitto Denko Corp.
Type NT-8600NF, manufactured by Nitto Denko Corp.

3. Emitter - LED input. Gallium arsenide infrared light emitting diode.

MODEL EL357 (CONTINUED)

4. Sensor – Bipolar transistor output. Silicon.

5. Junction Coating Material – Silicone resin, Dow Corning, Type JCR-6101UP.

*6. Leads – **Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.**

*

Model CNY17

General - Also represents Models 4N, MCT2, MOC811, H11A, MOC810, TIL11, CNX3 and SL55.

*1. Enclosure - R/C (QMFZ2) Epoxy molding compound, Type EME-1100, manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. **(E223871)**. Minimum 0.475 mm thick. Molded using a high temperature and high pressure process.

Alternate - Same except, Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd.

Alternate - Same except, Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).

Alternate - Same except, Type EME-E110G, manufactured by Chang Chun Plastics Co. Ltd. **(E59481)/Chang** Chun SB (Changshu) Co. Ltd. **(E223871)**.

2. Window - R/C (QMFZ2), Epoxy molded resin, Chang Chun Plastics, Type EC-15. Minimum 0.5 mm through insulation spacing between the input and the output circuits. Molded using a high temperature and high pressure process.

Alternate - Same except Panasonic Electric Works, Ltd., Type CV1400H.

Alternate - Same except Nitto Denko Corp., Type NT-8600A.

Alternate - Same except Chang Chun Plastics, Type EC-15G.

3. Emitter - LED input. Gallium arsenide infrared light emitting diode.

4. Sensor - Bipolar transistor output. Silicon.

5. Junction Coating Material - Silicone resin, GE-Toshiba, Type TSE3251-H-C.

Alternate - Silicone resin, Dow Corning, Type JCR-6101UP.

6. Leads - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material

MODEL EL617

General - Also represents Models EL610 and EL9001. See ILL. 5 for details.

*1. Enclosure - R/C (QMFZ2/8) Epoxy molding compound, Type EME-1100, manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. **(E223871)**. Minimum 0.475 mm thick. Molded using a high temperature and high pressure process.

Alternate - Same as above except, Type EME-E110G, manufactured by Chang Chun Plastics Co. Ltd. **(E59481)/Chang** Chun SB (Changshu) Co. Ltd. **(E223871)**.

2. Window - R/C (QMFZ2/8), Epoxy molded resin, Chang Chun Plastics, Type EC-15. Minimum 0.5 mm through-insulation thickness between the input and the output circuits. Molded using a high temperature and high pressure process.

Alternate - Same as above except, Chang Chun Plastics (E59481), Type EC-15G.

Alternate - Same except Nitto Denko Corp., Type NT-8600A.

3. Emitter - LED input.

4. Sensor - Bipolar transistor output.

5. Junction Coating Material - Silicone resin, GE-Toshiba, Type TSE3251-H-C.

6. Leads - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

MODEL EL3052

General - Represents Models H11AA1, H11AA2, H11AA3, H11AA4, 4N29, 4N30, 4N31, 4N32, 4N33, H11B1, H11B2, H11B3, H11B255, TIL113, MOC119, MOC8020, MOC8021, MOC8030, MOC8050, MOC8080, EL3010, EL3011, EL3012, EL3013, EL3014, EL3021, EL3020, EL3022, EL3023, EL3024, EL3050, EL3051, EL3053, EL3054, EL3030, EL3031, EL3032, EL3033, EL3034, EL3040, EL3041, EL3042, EL3043, EL3044, EL3060, EL3061, EL3062, EL3063, EL3064, EL3070, EL3071, EL3072, EL3073, EL3074, EL3080, EL3081, EL3082, EL3083, EL3084, EL3161, EL3162, EL3163, ELM4, ELM6, H11L1, H11L2, and H11L3 except where variations are specifically described.

*1. Outer Mold - R/C (QMFZ2) Epoxy molding resin, Cat. No. EME-1100, designated Sumikon, manufactured by Chang Chun Plastics Co. Ltd. (E59481) / Chang Chun SB (Changshu) Co. Ltd. **(E223871)**. Molded using high temperature and high pressure process. Minimum 0.48 mm thick on both top and bottom.

Alternate - Same except, Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).

Alternate - Same except, Type EME-E110G, manufactured by Chang Chun Plastics Co. Ltd. **(E59481)/** Chang Chun SB (Changshu) Co. Ltd. **(E223871)**.

Alternate - Same except, Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd.

2. Inner Mold -Epoxy molding resin, Cat. No. EC-15L, manufactured by Chang Chun Plastics Co Ltd. Molded using a high temperature and high pressure process. Minimum 0.5 mm through insulation spacing between the input and output circuit.

Alternate - Same except Nitto Denko Corp., Type NT-8600A.

Alternate - Same except Chang Chun Plastics, Type EC-15G.

Alternate - Same except Panasonic Electric Works Ltd, Type CV1400H.

3. Lead Frame - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

4. Emitter - LED Input.

5. Sensor –Type tabulated below.

Optical Isolator Models		Sensor Chip Type
H11AA1, H11AA2, H11AA3, H11AA4		Bipolar Transistor
4N29, 4N30, 4N31, 4N32, 4N33, H11B1, H11B2, H11B3, H11B255, TIL113, MOC119, MOC8020, MOC8021, MOC8030, MOC8050, MOC8080		Bipolar Transistor
EL3010, EL3011, EL3012, **EL3013**, **EL3014**, EL3021, EL3020, EL3022, EL3023, **EL3024**, **EL3050**, EL3051, EL3052, **EL3053**, **EL3054**, **EL3070**, **EL3071**, **EL3072**, **EL3073**, **EL3074**		Triac
EL3030, EL3031, EL3032, EL3033, **EL3034**, **EL3040**, EL3041, EL3042, EL3043, **EL3044**, **EL3060**, EL3061, EL3062, EL3063, **EL3064**, **EL3080**, EL3081, EL3082, EL3083, **EL3084**, EL3161, EL3162, EL3163, ELM4, ELM6		Triac
H11L1, H11L2, H11L3		Bipolar Transistor

6. Wire – Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

7. Junction Coating – Silicone. Type JCR-6101UP, manufactured by Dow Corning Toray Co.

MODEL EL3H7

General - Same as models 817, and EL8X7 shown in Fig. 1, except as noted below. Also represents Models EL3H4, EL3H7L, EL3H71, EL280, EL281, and EL2801. See ILL. 4 for details.

1. Enclosure - R/C (QMFZ2), Epoxy molding compound, Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd. Minimum 0.4 mm thick. Molded using a high temperature and high pressure process. (Canadian component requirements satisfied by US Component Certification.)

* Alternate - R/C (QMFZ2/QMFZ8) Epoxy molding compound, Type EME-1100, manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. **(E223871)**. Molded using a high temperature and high pressure process.

Alternate - R/C (QMFZ2) EP-Molding. Cat. No. EME-E110G, manufactured by Chang Chun Plastics (E59481) / Chang Chun SB (Changshu) Co. Ltd. **(E223871)**.

2. Window - Panasonic Electric Works, Ltd., Type CV1400H. Minimum 0.4 mm through insulation spacing between the input and the output circuits. Molded using a high temperature and high pressure process. (Canadian component requirements satisfied by US Component Certification.)

Alternate - R/C (QMFZ2/QMFZ8), Epoxy molded resin, Chang Chun Plastics (E59481), Type EC-15L. Molded using a high temperature and high pressure process.

Alternate - R/C (QMFZ2) EP-Molding. Cat. No. EC-15G, manufactured by Chang Chun Plastics (E59481).

Alternate - Same as above except, Nitto Denko Corp, Type NT-8600A.

3. Emitter - LED input. Gallium arsenide infrared light emitting diode.

4. Sensor - Bipolar transistor output. Silicon.

5. Junction Coating Material - Silicone resin, Dow Corning, Type JCR-6101UP.

6. Leads - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

MODEL EL205

General - Represents Models EL206, EL207, EL208, EL211, EL212, EL213, EL215, EL216, EL217, ELD205, ELD206, ELD207, ELD208, ELD211, ELD213, and ELD217, except where variations are specifically described.

1. Outer Mold - Epoxy molding compound, Cat. No. EME-1100RS, manufactured by Chang Chun Plastics Co Ltd. **(E59481)/Chang Chun SB (Changshu) Co. Ltd. (E223871).** Molded using high temperature and high-pressure process. Minimum 0.33 mm thick on both top and bottom.

* Alternate - R/C (QMFZ2) Epoxy molding compound, Cat. No. EME-E110G, manufactured by Chang Chun Plastics Co **Ltd. (E59481)/** Chang Chun SB **(Changshu)** Co. Ltd. **(E223871).** Molded using high temperature and high-pressure process. Minimum 0.33 mm thick on both top and bottom.

Alternate - Epoxy molding compound, Cat. No. ELER8-500C, manufactured by Edale Technology Co. Ltd. Minimum 0.33 mm thick on both top and bottom. Molded using high temperature and high-pressure process.

2. Inner Mold - Epoxy molding resin, Cat. No. EC-15L, manufactured by Chang Chun Plastics Co Ltd. Molded using a high temperature and high-pressure process. Minimum 0.4 mm through insulation spacing between the input and output circuit.

R/C (QMFZ2), Epoxy molding resin, Cat. No. EC-15G, manufactured by Chang Chun Plastics Co Ltd. Molded using a high temperature and high-pressure process. Minimum 0.4 mm through insulation spacing between the input and output circuit.

Alternate - Same as above except, Nitto Denko Corp, Type NT-8600A.

3. Lead Frame - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

4. Emitter - LED Input.

5. Sensor –Bipolar Transistor type Output.

*6. Wire – **Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.**

7. Junction Coating – Silicone. Type JCR-6101UP, manufactured by Dow Corning Toray Co.

MODELS ELD3H4, ELD3H5, ELD3H6, ELD3H7

General – Represent Models ELQ3H4, ELQ3H5, ELQ3H7 (ILL. 7)

*1. Outer Mold – R/C (QMFZ2) Epoxy molding resin, Type EME-1100, designated Sumikon, manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. **(E223871)**. Molded using high temperature and high pressure process. Minimum 0.4 mm thick on both top and bottom.

Alternate – Same except, Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).

* Alternate – Same except, Type EME-E110G, manufactured by Chang Chun Plastics Co. Ltd. **(E59481)/Chang** Chun SB (ChanGshu) Co. Ltd. **(E223871)**.

Alternate – Same except, Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd.

2. Inner Mold –Epoxy molding resin, Cat. No. EC-15L, manufactured by Chang Chun Plastics Co Ltd. Molded using a high temperature and high pressure process. Minimum 0.4 mm through insulation spacing between the input and output circuit.

Alternate – Same except Nitto Denko Corp., Type NT-8600A.

Alternate – Same except Chang Chun Plastics, Type EC-15G.

Alternate – Same except Panasonic Electric Works Ltd, Type CV1400H.

3. Lead Frame / Bond Wire – Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

4. Emitter – LED Input.

5. Sensor – Bipolar Transistor Output.

6. Junction Coating – Silicone, Type JCR-6101UP, manufactured by Dow Corning Toray Co.

MODEL EL847

General - Same as model EL8X7 shown in Fig. 1, except as noted below. Also represents Models EL844, EL845

1. Enclosure - R/C (QMFZ2), Epoxy molding compound, Type CV3400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd. Minimum 0.475 mm thick. Molded using a high temperature and high pressure process.

* Alternate - R/C (QMFZ2/QMFZ8) Epoxy molding compound, Type EME-1100, manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (Changshu) Co. Ltd. **(E223871)**. Molded using a high temperature and high pressure process.

* Alternate - R/C (QMFZ2) EP-Molding. Type EME-E110G, manufactured by manufactured by Chang Chun Plastics Co. Ltd. **(E59481)/Chang** Chun SB (ChanGshu) Co. Ltd. **(E223871)**.

Alternate - Same except, Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).

2. Window - Panasonic Electric Works Electronic Materials (Shanghai)Co., Ltd, Type CV1400H. Minimum 0.5 mm through insulation thick between the input and the output circuits. Molded using a high temperature and high pressure process.

Alternate - R/C (QMFZ2/QMFZ8), Epoxy molded resin, Chang Chun Plastics (E59481), Type EC-15L. Molded using a high temperature and high pressure process.

Alternate - R/C (QMFZ2) EP-Molding. Type EC-15G, manufactured by Chang Chun Plastics (E59481).

Alternate - Same except Nitto Denko Corp., Type NT-8600A.

3. Emitter - LED input.

4. Sensor - Bipolar transistor output.

5. Junction Coating Material - Silicone resin, Dow Corning, Type JCR-6101UP.

6. Leads/Bond Wire - Metal employed for current-carrying parts shall be of stainless steel, plated steel, copper, silver, gold, nickel, aluminum, an alloy of the same, or an equivalent material.

MODEL EL817H

General – Same as model EL8X7 shown in Fig. 1, except as noted below.

1. Enclosure – R/C (QMFZ2), Epoxy molding compound, Type CV4180, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd. Minimum 0.475 mm thick. Molded using a high temperature and high pressure process.

   Alternate – Same as above except, R/C (QMFZ2), Type EME-E110G, manufactured by manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (ChanGshu) Co. Ltd. (E223871).

   Alternate – Same as above except, R/C (QMFZ2) Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).

2. Window – Type NT-8600A, manufactured by Nitto Denko Corp. Minimum 0.5 mm through insulation thick between the input and the output circuits. Molded using a high temperature and high pressure process.

   Alternate – Same as above except, Type X1400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd.

5. Junction Coating Material – Silicone resin, Dow Corning, Type JCR-6101UP.

MODEL EL101XH

General - Same as model EL8X7 shown in Fig. 1, except as noted below. Also represents Models EL357NH and EL3H7H

1. Enclosure - R/C (QMFZ2), Epoxy molding compound, Type CV4180, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd. Minimum 0.4 mm thick. Molded using a high temperature and high pressure process.

   Alternate - Same as above except, R/C (QMFZ2), Type EME-E110G, manufactured by manufactured by Chang Chun Plastics Co. Ltd. (E59481)/Chang Chun SB (ChanGshu) Co. Ltd. (E223871).

   Alternate - Same as above except, R/C (QMFZ2) Type HC-10 Type 2, manufactured by Hitachi Chemical Co. Ltd. (E42956).

2. Window - Type NT-8600A, manufactured by Nitto Denko Corp. Minimum 0.4 mm through insulation thick between the input and the output circuits. Molded using a high temperature and high pressure process.

   Alternate - Same as above except, Type X1400H, manufactured by Panasonic Electric Works Electronics Materials (Shanghai) Co. Ltd.

5. Junction Coating Material - Silicone resin, Dow Corning, Type JCR-6101UP.

File E214129
Project 08CA17258

August 12, 2008

REPORT

ON

COMPONENT – OPTICAL ISOLATORS

Everlight Electronics Co Ltd
TUCHENG, TAIPEI, TAIWAN

DESCRIPTION

*USR, CNR – Double Protection Optical Isolator, Models 4N5, 6N135, 6N136, 6N137, 6N138, 6N139, CNY64, CNY65, EL050L, EL060L, EL061A, EL061N, EL0452, EL0453, EL0454, EL0500, EL0501, EL0600, EL0601, EL0611, EL070L, EL071L, EL0700, EL0701, EL250L, EL253L, EL260L, EL261A, EL261N, EL263A, EL263L, EL263N, EL371, EL725, EL851, EL852, EL2200, EL2201, EL2202, EL2219, EL2211, EL2212, EL2231, EL2232, EL2502, EL2503, EL2530, EL2531, EL2601, EL2611, EL2630, EL2631, EL2730, EL2731, EL4502, EL4503, EL4504, EL4534, EL4661, ELD851, ELD852, ELW135, ELW136, ELW137, ELW138, ELW139, ELW250L, ELW260L, **ELW2200**, **ELW2201**, **ELW2202**, **ELW2211**, **ELW2212**, **ELW2219**, ELW2601, ELW2611, ELW3120, ELW3140, ELW3150, ELW3180, ELW3184, ELW4502, ELW4503, ELW4504, H11D, H11G1, H11G2, H11G3. Models may be followed by any suffix.

MAXIMUM RATINGS (per channel at nominal operating temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
4N5	80	100	150	300	5300	100	125	150
6N135	25	8	45 @ 1 Mbps	100 @ 1 Mbps	5000	100	125	125
6N136	25	8	45 @ 1 Mbps	100 @ 1 Mbps	5000	100	125	125
6N137	20	50	40 @10 Mbps	85 @10 Mbps	5000	100	125	125
6N138	20	60	35	100	5000	100	125	125
6N139	20	60	35	100	5000	100	125	125
CNY64	75	50	120	150	8200	110	125	125
CNY65	75	50	120	150	8200	110	125	125
EL371	60	150	100	300	5000	100	125	125
EL725	60	150	100	300	5000	100	125	125
EL851	80	100	150	300	5300	100	125	150
EL852	60	150	100	300	5000	100	125	125
EL2200	20	25	40	150	5000	100	125	125
EL2201	20	25	40	150	5000	100	125	125
EL2202	20	25	40	150	5000	100	125	125
EL2219	20	25	40	150	5000	100	125	125
EL2211	20	25	40	150	5000	100	125	125
EL2212	20	25	40	150	5000	100	125	125
EL2231	20	25	40	110	5000	100	125	125
EL2232	20	25	40	110	5000	100	125	125

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL250L	**25**	**8**	**45 @ 1 Mbps**	**100 @ 1 Mbps**	**5000**	**100**	**125**	**125**
EL2502	**25**	**8**	**45 @ 1 Mbps**	**100 @ 1 Mbps**	**5000**	**100**	**125**	**125**
EL2503	**25**	**8**	**45 @ 1 Mbps**	**100 @ 1 Mbps**	**5000**	**100**	**125**	**125**
EL253L	**25**	**8**	**45 @ 1 Mbps**	**35 @ 1 Mbps**	**5000**	**100**	**125**	**125**
EL2530	**25**	**8**	**45 @ 1 Mbps**	**35 @ 1 Mbps**	**5000**	**100**	**125**	**125**
EL2531	**25**	**8**	**45 @ 1 Mbps**	**35 @ 1 Mbps**	**5000**	**100**	**125**	**125**
EL260L	**20**	**50**	**40 @10 Mbps**	**85 @10 Mbps**	**5000**	**100**	**125**	**125**
EL2601	**20**	**50**	**40 @10 Mbps**	**85 @10 Mbps**	**5000**	**100**	**125**	**125**
EL2611	**20**	**50**	**40 @10 Mbps**	**85 @10 Mbps**	**5000**	**100**	**125**	**125**
EL2630	**20**	**50**	**40 @10 Mbps**	**60 @10 Mbps**	**5000**	**100**	**125**	**125**
EL2631	**20**	**50**	**40 @10 Mbps**	**60 @10 Mbps**	**5000**	**100**	**125**	**125**
EL2730	**20**	**60**	**35**	**100**	**5000**	**100**	**125**	**125**
EL2731	**20**	**60**	**35**	**100**	**5000**	**100**	**125**	**125**
EL261A	20	50	40 @10 Mbps	85 @10 Mbps	5000	100	125	125
EL261N	20	50	40 @10 Mbps	85 @10 Mbps	5000	100	125	125
EL2611	20	50	40 @10 Mbps	85 @10 Mbps	5000	100	125	125
EL263A	20	50	40 @10 Mbps	60 @10 Mbps	5000	100	125	125
EL263L	20	50	40 @10 Mbps	60 @10 Mbps	5000	100	125	125
EL263N	20	50	40 @10 Mbps	60 @10 Mbps	5000	100	125	125
EL2630	20	50	40 @10 Mbps	60 @10 Mbps	5000	100	125	125
EL2631	20	50	40 @10 Mbps	60 @10 Mbps	5000	100	125	125
EL2730	20	60	35	100	5000	100	125	125
EL2731	20	60	35	100	5000	100	125	125

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL4502	25	8	45	100	5000	100	125	125
EL4503	25	8	45	100	5000	100	125	125
EL4504	25	8	45	100	5000	100	125	125
EL4534	25	8	45	35	5000	100	125	125
EL4661	20	50	40	60	5000	100	125	125
H11D	80	100	150	300	5300	100	125	150
H11G1	60	150	100	200	5000	100	125	125
H11G2	60	150	100	200	5000	100	125	125
H11G3	60	150	100	200	5000	100	125	125
EL050L	25	8	45	100	3750	100	125	125
EL0500	25	8	45	100	3750	100	125	125
EL0501	25	8	45	100	3750	100	125	125
EL0452	25	8	45	100	3750	100	125	125
EL0453	25	8	45	100	3750	100	125	125
EL0454	25	8	45	100	3750	100	125	125
EL060L	20	50	40	85	3750	100	125	125
EL0600	20	50	40	85	3750	100	125	125
EL0601	20	50	40	85	3750	100	125	125
EL061A	20	50	40	85	3750	100	125	125
EL061N	20	50	40	85	3750	100	125	125
EL0611	20	50	40	85	3750	100	125	125
EL070L	20	50	40	85	3750	100	125	125
EL071L	20	50	40	85	3750	100	125	125
EL0700	20	60	35	100	3750	100	125	125
EL0701	20	60	35	100	3750	100	125	125
ELD851	80	100	150	300	5300	100	125	150
ELD852	60	150	100	300	5000	100	125	125
ELW135	40	16	80	100	5000	100	125	125
ELW136	40	16	80	100	5000	100	125	125
ELW137	40	50	80	85	5000	100	125	125
ELW138	40	60	80	100	5000	100	125	125
ELW139	40	60	80	100	5000	100	125	125
ELW250L	40	16	80	100	5000	100	125	125
ELW260L	40	50	80	85	5000	100	125	125
ELW2200	**20**	**25**	**40**	**150**	**5000**	**100**	**125**	**125**
ELW2201	**20**	**25**	**40**	**150**	**5000**	**100**	**125**	**125**
ELW2202	**20**	**25**	**40**	**150**	**5000**	**100**	**125**	**125**
ELW2211	**20**	**25**	**40**	**150**	**5000**	**100**	**125**	**125**
ELW2212	**20**	**25**	**40**	**150**	**5000**	**100**	**125**	**125**
ELW2219	**20**	**25**	**40**	**150**	**5000**	**100**	**125**	**125**
ELW2601	40	50	80	85	5000	100	125	125
ELW2611	40	50	80	85	5000	100	125	125
ELW3120	50	300	100	300	5000	110	125	125
ELW3140	50	300	100	300	5000	110	125	125
ELW3150	50	300	100	300	5000	110	125	125
ELW3180	50	300	100	300	5000	110	125	125
ELW3184	50	300	100	300	5000	110	125	125
ELW4502	40	16	80	100	5000	100	125	125
ELW4503	40	16	80	100	5000	100	125	125
ELW4504	40	16	80	100	5000	100	125	125

GENERAL:

These devices are photocoupled isolators consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo-sensor , such as a transistor. The emitter and sensor are separated by an insulating window. Internal “chips” are connected to lead frames that are molded into the enclosure.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

***USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL 1577,** Fifth **Edition.**

*CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A.

File E214129
Project 09CA63111

August 26, 2010

Revised:July 14, 2011
REPORT

on

*COMPONENT - OPTICAL ISOLATORS

Everlight Electronics Co Ltd
TAIPEI, TAIWAN

DESCRIPTION

PRODUCT COVERED:

USR, CNR – Double Protection, Optical Isolator, Models **EL351**, **EL352**, EL451, EL452, EL053L, EL0530, EL0531, EL0533, EL0551, EL063A, EL063L, EL063N, **EL083L**, **EL086L**, EL0630, EL0631, EL0661, EL0730, EL0731, **ELM80L**, **ELM81L**, ELM314, ELM452, ELM452L, ELM453, ELM453L, ELM454, ELM600, ELM600L, ELM601, ELM601L, ELM611, ELM611L, ELM3010, ELM3011, ELM3012, ELM3013, ELM3014, ELM3020, ELM3021, ELM3022, ELM3023, ELM3024, ELM3030, ELM3031, ELM3032, ELM3033, ELM3034, EL3040, ELM3041, ELM3042, ELM3043, ELM3044, ELM3050, ELM3051, ELM3052, ELM3053, ELM3054, ELM3060, ELM3061, ELM3062, ELM3063, ELM3064, ELM3070, ELM3071, ELM3072, ELM3073, ELM3074, ELM3080, ELM3081, ELM3082, ELM3083, ELM3084.

All models may be followed by any letters or numbers.

MAXIMUM RATINGS (at nominal operating temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL351	**80**	**100**	**150**	**300**	**3750**	**110**	**125**	**150**
EL352	**60**	**150**	**100**	**300**	**3750**	**110**	**125**	**150**
EL451	80	100	150	300	3750	110	125	150
EL452	60	150	100	300	3750	110	125	150
EL0551	25	8	45	100	3750	100	125	125
EL053L	25	8	45	100	3750	100	125	125
EL0530	25	8	45	100	3750	100	125	125
EL0531	25	8	45	100	3750	100	125	125
EL0533	25	8	45	100	3750	100	125	125
EL063A	20	50	40	85	3750	100	125	125
EL063L	20	50	40	85	3750	100	125	125
EL063N	20	50	40	85	3750	100	125	125
EL083L	**20**	**50**	**40**	**85**	**3750**	**100**	**125**	**125**
EL086L	**20**	**50**	**40**	**85**	**3750**	**100**	**125**	**125**
EL0630	20	50	40	85	3750	100	125	125
EL0631	20	50	40	85	3750	100	125	125
EL0730	20	60	35	100	3750	100	125	125
EL0731	20	60	35	100	3750	100	125	125
ELM3010	60	100	100	300	3750	110	125	150
ELM3011	60	100	100	300	3750	110	125	150
ELM3012	60	100	100	300	3750	110	125	150
ELM3013	60	100	100	300	3750	110	125	150
ELM3014	60	100	100	300	3750	110	125	150
ELM3020	60	100	100	300	3750	110	125	150
ELM3021	60	100	100	300	3750	110	125	150
ELM3022	60	100	100	300	3750	110	125	150
ELM3023	60	100	100	300	3750	110	125	150
ELM3024	60	100	100	300	3750	110	125	150
ELM3050	60	100	100	300	3750	110	125	150
ELM3051	60	100	100	300	3750	110	125	150

Model	Current (mA)		Power (mW)		Isolation Voltage	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
ELM3052	60	100	100	300	3750	110	125	150
ELM3053	60	100	100	300	3750	110	125	150
ELM3054	60	100	100	300	3750	110	125	150
ELM3030	60	100	100	300	3750	110	125	150
ELM3031	60	100	100	300	3750	110	125	150
ELM3032	60	100	100	300	3750	110	125	150
ELM3033	60	100	100	300	3750	110	125	150
ELM3034	60	100	100	300	3750	110	125	150
ELM3040	60	100	100	300	3750	110	125	150
ELM3041	60	100	100	300	3750	110	125	150
ELM3042	60	100	100	300	3750	110	125	150
ELM3043	60	100	100	300	3750	110	125	150
ELM3044	60	100	100	300	3750	110	125	150
ELM3060	60	100	100	300	3750	110	125	150
ELM3061	60	100	100	300	3750	110	125	150
ELM3062	60	100	100	300	3750	110	125	150
ELM3063	60	100	100	300	3750	110	125	150
ELM3064	60	100	100	300	3750	110	125	150
ELM3070	60	100	100	300	3750	110	125	150
ELM3071	60	100	100	300	3750	110	125	150
ELM3072	60	100	100	300	3750	110	125	150
ELM3073	60	100	100	300	3750	110	125	150
ELM3074	60	100	100	300	3750	110	125	150
ELM3080	60	100	100	300	3750	110	125	150
ELM3081	60	100	100	300	3750	110	125	150
ELM3082	60	100	100	300	3750	110	125	150
ELM3083	60	100	100	300	3750	110	125	150
ELM3084	60	100	100	300	3750	110	125	150
ELM80L	**50**	**50**	**100**	**85**	**3750**	**100**	**125**	**125**
ELM81L	**50**	**50**	**100**	**85**	**3750**	**100**	**125**	**125**
ELM314	60	100	100	300	3750	110	125	150
ELM452, ELM452L, ELM453, ELM453L	50	16	45	100	3750	100	125	125
ELM454	50	16	45	100	3750	100	125	125
ELM600, ELM600L, ELM601, ELM601L, ELM611, ELM611L	50	50	100	85	3750	100	125	125

GENERAL:

These devices are photocoupled isolators consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo-sensor, such as a transistor. The emitter and sensor are separated by an insulating window. Internal “chips” are connected to lead frames that are molded into the enclosure.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

***USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL 1577,** Fifth **Edition.**

CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A.

File E214129
Project 10CA27658

September 17, 2010

REPORT

On

COMPONENT - OPTICAL ISOLATORS - COMPONENT

Everlight Electronics Co Ltd
Taipei, Taiwan

DESCRIPTION

PRODUCT COVERED:

USR, CNR – Double Protection Optical Isolator, Models **ELR0223**, **ELR1223**, **ELR2223**, ELR3202, ELR3203, ELR3212, ELR3213, ELR3222, ELR3223, ELR3232, ELR3233, ELR3502, ELR3503, ELR3512, ELR3513, ELR3522, ELR3523, ELR3532, ELR3533, ELR3702, ELR3703, ELR3712, ELR3713, ELR3722, ELR3723, ELR3732, ELR3733.

*USR, CNR – Double Protection Optical Isolator, Models ELR3402, ELR3403, ELR3412, ELR3413, ELR3422, ELR3423, ELR3432, ELR3433, ELR3602, ELR3603, ELR3612, ELR3613, ELR3622, ELR3623, ELR3632, ELR3633, ELR3802, ELR3803, ELR3812, ELR3813, ELR3822, ELR3823, ELR3832, ELR3833.

MAXIMUM RATINGS (at nominal operating temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage (Vac)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
ELR0223	**60**	**300**	**100**	**2000**	**5000**	**100**	**125**	**125**
ELR1223	**60**	**600**	**100**	**2000**	**5000**	**100**	**125**	**125**
ELR2223	**60**	**900**	**100**	**2000**	**5000**	**100**	**125**	**125**
ELR3202, ELR3203, ELR3212, ELR3213, ELR3222, ELR3223, ELR3232, ELR3233, ELR3502, ELR3503, ELR3512, ELR3513, ELR3522, ELR3523, ELR3532, ELR3533, ELR3702, ELR3703, ELR3712, ELR3713, ELR3722, ELR3723, ELR3732, ELR3733	60	1200	100	2000	5000	100	125	125
ELR3402, ELR3403, ELR3412, ELR3413, ELR3422, ELR3423, ELR3432, ELR3433, ELR3602, ELR3603, ELR3612, ELR3613, ELR3622, ELR3623, ELR3632, ELR3633, ELR3802, ELR3803, ELR3812, ELR3813, ELR3822, ELR3823, ELR3832, ELR3833	60	1200	100	2000	5000	100	125	125

GENERAL:

These devices are photocoupled isolators consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo-sensor, such as a transistor. The emitter and sensor are separated by an insulating window. Internal “chips” are connected to lead frames that are molded into the enclosure.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

*USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL 1577, **Fifth** Edition.

CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A.

File E214129
Project 11CA21212

September 02, 2011

REPORT

On

COMPONENT - OPTICAL ISOLATORS

Everlight Electronics Co Ltd
Taipei, Taiwan

DESCRIPTION

PRODUCT COVERED:

USR, CNR – Double Protection Optical Isolator, ELT3010, ELT3011, ELT3012, ELT3013, **ELT3014**, **ELT3020**, ELT3021, ELT3022, ELT3023, ELT3024, **ELT3030**, **ELT3040**, **ELT3050**, ELT3051, ELT3052, ELT3053,ELT3054, ELT3031, ELT3032, ELT3033, ELT3034, ELT3041, ELT3042, ELT3043,ELT3044, **ELT3060**, ELT3061, ELT3062, ELT3063, ELT3064, **ELT3070**, **ELT3071**, **ELT3072**, **ELT3073**, **ELT3074**, **ELT3080**, ELT3081, ELT3082, ELT3083, and ELT3084, may be followed by any letters or numbers.

MAXIMUM RATINGS (at nominal operating temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage (Vac)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
ELT3010 ELT3011 ELT3012 ELT3013 **ELT3014** **ELT3020** ELT3021 ELT3022 ELT3023 ELT3024 **ELT3040** **ELT3050** ELT3051 **ELT3070** **ELT3071** **ELT3072** **ELT3073** **ELT3074** ELT3052 ELT3053 ELT3054	60	100	100	300	5000	110	125	125
*								

MAXIMUM RATINGS (at nominal operating temperature) cont.:

Model	Current (mA)		Power (mW)		Isolation Voltage (Vac)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
ELT3030 ELT3031 ELT3032 ELT3033 ELT3034 ELT3040 ELT3041 ELT3042 ELT3043 ELT3044 ELT3060 ELT3061 ELT3062 ELT3063 ELT3064 ELT3080 ELT3081 ELT3082 ELT3083 ELT3084	60	100	100	300	5000	110	125	125

GENERAL:

These devices are photocoupled isolators consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo-sensor, such as a transistor. The emitter and sensor are separated by an insulating window. Internal “chips” are connected to lead frames that are molded into the enclosure.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL 1577, Fourth Edition last revised January 20, 2010.

CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A dated January 23, 1998.

File E214129
Project 11CA38812

February 22, 2012

REPORT

ON

COMPONENT - OPTICAL ISOLATORS

Everlight Electronics Co Ltd
TUCHENG, TAIPEI, TAIWAN

DESCRIPTION

PRODUCT COVERED:

*USR, CNR – Single Protection Optical Isolator, Models ELM440A, ELM460A, ELM640A, ELM660A, **ELM840A**, and ELM860A. All models may be followed by any letters or numbers.
*USR, CNR – Double Protection Optical Isolator, Models EL3120, EL3140, EL3150, EL3180, EL3184, EL406X, EL410X, EL420X, EL425X, EL435X, EL440X, EL460X, EL606X, EL610X, EL620X, EL625X, EL635X, EL640X, EL660X, EL806A, EL810A, EL820A, EL825A, EL835A, EL840A, EL860A, **ELS500**, **ELS501**, **ELS511**, **ELS050L**, **ELS051L**, **ELS052L**, **ELS600**, **ELS601**, **ELS611**, **ELS060L**, **ELS061L**, **ELS062L** where X may be A or B. All models may be followed by any letters or numbers, except A or B.

MAXIMUM RATINGS (per channel at room temperature):

Model	Current (mA)		Power (mW)		Isolation Voltage (Vrms)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL3120	50	3000#	100	300	5000	110	125	125
EL3140	50	3000#	100	300	5000	110	125	125
EL3150	50	3000#	100	300	5000	110	125	125
EL3180	50	3000#	100	300	5000	110	125	125
EL3184	50	3000#	100	300	5000	110	125	125
EL406X	50	550	75	500	5000	85	125	125
EL410X	50	320	75	500	5000	85	125	125
EL420X	50	180	75	500	5000	85	125	125
EL425X	50	150	75	500	5000	85	125	125
EL435X	50	130	75	500	5000	85	125	125
EL440X	50	120	75	500	5000	85	125	125
EL460X	50	50	75	500	5000	85	125	125
EL606X	50	550	75	500	5000	85	125	125
EL610X	50	320	75	500	5000	85	125	125
EL620X	50	180	75	500	5000	85	125	125
EL625X	50	150	75	500	5000	85	125	125
EL635X	50	130	75	500	5000	85	125	125
EL640X	50	120	75	500	5000	85	125	125
EL660X	50	50	75	500	5000	85	125	125
EL806A	50	550	75	500	5000	85	125	125
EL810A	50	320	75	500	5000	85	125	125
EL820A	50	180	75	500	5000	85	125	125
EL825A	50	150	75	500	5000	85	125	125
EL835A	50	130	75	500	5000	85	125	125

Model	Current (mA)		Power (mW)		Isolation Voltage (Vrms)	Max Operating (Ambient) Temp (°C)	Max Junction Temp (°C)	Max Storage Temp (°C)
	Emitter	Sensor	Emitter	Sensor				
EL840A	50	120	75	500	5000	85	125	125
EL860A	50	50	75	500	5000	85	125	125
ELM440A	50	120	75	500	3750	100	125	125
ELM460A	50	50	75	500	3750	100	125	125
ELM640A	50	120	75	500	3750	100	125	125
ELM660A	50	50	75	500	3750	100	125	125
ELM840A	50	120	75	800	3750	100	125	125
ELM860A	50	50	75	800	3750	100	125	125
*__ELS500__ __ELS501__ __ELS511__ __ELS050L__ __ELS051L__ __ELS052L__	50	8	100	100	5000	100	125	125
* __ELS600__ __ELS601__ __ELS611__ __ELS060L__ __ELS061L__ __ELS062L__	50	50	100	100	5000	100	125	125

Note: This is the client's declared peak value of the output current at a maximum pulse width of 10 µs with maximum duty cycle of 1.1%.

GENERAL:

These devices are photocoupled isolators consisting of a photo-emitter such as a light emitting diode, optically coupled to a photo-sensor, such as a transistor. The emitter and sensor are separated by an insulating window. Internal “chips” are connected to lead frames that are molded into the enclosure.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use – For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

USR indicates this product was investigated under the UL Standard for Safety for Optical Isolators, UL 1577, **Fifth Edition**.

CNR indicates this product was investigated under the Canadian Certification Notice, CSA Component Acceptance Service No. 5A.

Conditions of Acceptability - Each device shall be reviewed with respect to the following conditions of acceptability:

1. The capability of the device to control a load has not been investigated.

2. These devices should be installed in a suitable end product enclosure.

3. If the maximum operating (ambient) temperature exceeds the rating noted in the ratings table, additional means should be used to determine if the maximum junction temperature of the device is exceeded.

4. For single protection devices, the insulation to the case has not been evaluated. For double protection devices, the insulation to the case has been evaluated to the isolation voltage specified in the ratings table.

5. In addition to meeting single protection requirements, double protection optical isolators have also been investigated for use in up to 250 V, 50/60 Hz circuits in audio, video, and similar equipment in applications in which breakdown of the optical isolator may result in a risk of fire, electrical shock, or injury to persons.

6. For Models EL3120, EL3140, EL3150, EL3180, and EL3184, the output current values specified in this report are the client’s declared peak values of the output current at a maximum pulse width of 10 µs at maximum duty cycle of 1.1%. The suitability of using these devices shall be considered in the end applications.