

## CERTIFICATE

No. P15219385/A8



Product	Optocoupler
Applicant	Everlight Electronics Co., Ltd. No.6-8, Zhonghua Rd., Shulin Dist., New Taipei City, Taipei, 23860 Taiwan
Manufacturer	Everlight Electronics Co., Ltd. No.6-8, Zhonghua Rd., Shulin Dist., New Taipei City, Taipei, 23860 Taiwan
Factory	(3) See page 2
Ratings	250Vrms
Trade mark	EVERLIGHT
Model / Type Ref.	EL817./EL816./EL819./EL829./EL826./EL827./ EL717./4N25./4N26./4N27./4N28./4N35./4N36./4N37./4N38./MCT2./MCT2E./ MCT210./CNY17-1./CNY17-2./CNY17-3./CNY17-4./MOC8111./MOC8112./ MOC8113./H11A1./H11A2./H11A3./H11A4./H11A5./TIL111./TIL117./CNX35U.
Principal characteristics	Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C. Tested for 5000m.
A sample of the product was tested and found to be in conformity with	TRON EN 60065:2014;A11   IEC 60065:2014 IEC 60065:2014   OFF EN 60950-1:2006;A11;A1;A12;A2   IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009,   IEC 60950-1:2005/AMD2:2013   LITE   EN 61347-1:2015
	IEC 61347-1:2015 ITAV EN 62368-1:2014;A11 IEC 62368-1:2014
	HOUS EN 60335-1:2012;A11;A13;A1;A14;A2 IEC 60335-1:2010, IEC 60335-1:2010/AMD1:2013
Replaces	This certificate replaces previous certificate No. P15219385/A8, due to addition

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of new models, new factory location and new materials (outer mold: KHG200, inner mold: KHW8200, coating silicone: KMT-1171EL, outer mold: CEL-8240HF10GK).

This certificate documents conformity with the standards shown, and also applies as license for use of Nemkos name and certification mark. The certificate and license is valid as long as the applicable conditions are complied with, and provided that any changes to the product are notified to Nemko for acceptance prior to implementation.

New standards or amendments to the standards may imply that the product design must be updated and/or that re-testing and re-certification is necessary.

Additional information

Validity

Additional model(s)

(47) See page 3

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#### Additional model(s)

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#### Optocoupler

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ELW137./ ELW139./ ELW2601./ ELW2611./ ELW136./ ELW135./ ELW4502./ ELW4503./ ELW138./ ELW260L./ ELW250L./ ELW4504./ELW2200./ ELW2201./ ELW2202./ ELW2219./ ELW2211./ ELW2212.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 11.85mm, minimum internal creepage distance is measured to 7.72mm and minimum distance through insulation is measured to 0.9mm. Tested for reinforced insulation. Maximum operating temperature: 100°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

#### Optocoupler

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EL3120./ EL3140./ EL3150./ EL3180./ EL3184.

#### 250Vrms

IGBT Gate Drive Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Maximum operating temperature: 110°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

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#### Optocoupler

ELW3120./ ELW3140./ ELW3150./ ELW3180./ ELW3184.

#### 250Vrms

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IGBT Gate Drive Optocoupler. Minimum external creepage distance is measured to 11.85mm, minimum internal creepage distance is measured to 7.72mm and minimum distance through insulation is measured to 0.9mm. Tested for reinforced insulation. Maximum operating temperature: 110°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

Optocoupler

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ELD3H5./ ELD3H6./ ELD3H7./ ELD3H4./ ELQ3H4./ ELQ3H5./ ELQ3H7./ ELM314.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Maximum operating temperature: 110°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

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#### Optocoupler

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ELM452./ ELM453./ ELM600./ ELM601./ ELM611./ ELM452L./ ELM453L./ ELM600L./ ELM601L./ ELM611L./ELM454./ELM80L./ ELM81L.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Maximum operating temperature: 100°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

#### Optocoupler

6 ELD851./ELD852./4N29./4N30./4N31./4N32./4N33./H11B1./H11B2./H11B3./ H11B255./TIL113./MOC119./MOC8020./MOC8021./MOC8030./MOC8050./ MOC8080./EL301X./EL302X./EL305X./EL307X./EL303X./EL304X./EL306X./ EL308X./EL3161./EL3162./EL3163./H11L1./H11L2.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 5.5mm and minimum distance through insulation is measured to 0.5mm.Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C. The symbol "X" in type denotes X = Part no. (0,1,2,3,4).

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Optocoupler

EL2200./EL2212./EL2231./EL2201./EL2202./EL2219./EL2211./ EL2232.

#### 250Vrms

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High Speed Optocoupler. Minimum external creepage distance is measured to 8.2mm, minimum internal creepage distance is measured to 5.1mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength tests, between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C

Optocoupler

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ELR3602./ELR3603./ELR2602./ELR2603./ELR1602./ELR1603./ELR3502./ ELR3503./ELR2502./ELR2503./ELR1502./ELR1503./ELR0223./ELR1223./ ELR2223./ELR3223.

#### 250Vrms

Power Triac Optocoupler. Minimum external creepage distance is measured to 8.2mm, minimum internal creepage distance is measured to 5.1mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength tests, between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C

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Optocoupler 9 EL847./EL844./EL845.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 8.0mm, minimum internal creepage distance is measured to 5.1mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength tests, between input and output 4800Vac/1 minute. The symbol "." in type designation may be A to Z, numbers or blank, denote different pin shape. Maximum operating temperature: 110°C

Optocoupler

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EL2801./EL354./EL355./EL356./EL357./EL359./EL121./EL124./EL2701./ EL2705./EL357N./EL356N./EL121N./EL124N./EL2701N./EL354N./EL2705N./ EL3H7./EL281./EL3H4./EL280./EL3H71./ELM301X./ELM302X./ELM305X./ ELM307X./ELM303X./ELM304X./ELM306X./ELM308X.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature:  $110^{\circ}$ C. The symbol "X" in type denotes X = Part no. (0,1,2,3,4).

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Optocoupler 11

ELM60U./ ELM61U.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Maximum operating temperature: 100°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

Optocoupler 12 EL815./ EL814./EL824./ EL825.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 7.9mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C

#### Optocoupler

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EL617./CNY75G./CQY80.G/K233.G/TCDT110.G/TCDT111.G/TCDT112.G/ HS817.G/TCET110.G/TCET111.G/ TCET120.G

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 8.0mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C

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EL205./EL206./EL207./EL208./EL211./EL212./EL213./EL215./EL216./EL217./ ELD207./ELD208./ELD213./ELD217./ELD205./ELD206./ELD211.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 4.4mm, minimum internal creepage distance is measured to 3.5mm and minimum distance through insulation is measured to 0.4mm. Tested for basic and supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 2400Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C

#### Optocoupler

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6N135./6N136./6N137./6N138./6N139./EL2502./EL250L./EL2503./EL4502./ EL4503./EL2530./EL253L./EL2531./EL4534./EL2730./EL2731./EL2601./ EL260L./EL2611./EL261A./EL261N./EL2630./EL263L./EL263A./EL263N./ EL2631./EL4661./EL4504.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 8.0mm, minimum internal creepage distance is measured to 5.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C

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#### Optocoupler

16

EL0500./EL0501./EL0452./EL0453./EL0454./EL0600./EL0601./EL0611./ EL0700./EL050L./EL060L./EL0701./EL061A./EL061N./EL0551./EL0530./ EL0531./EL0533./EL063X./EL0661./EL0730./EL0731./EL053L.

#### 250Vrms

High Speed Optocoupler . Minimum external creepage distance is measured to 4.4mm, minimum internal creepage distance is measured to 3.5mm and minimum distance through insulation is measured to 0.4mm. Tested for basic and supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 2400Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C. The symbol "X" in type denotes X = Part no. (0,1,L,A,N).

#### Optocoupler

17

EL10XX./ EL357L./ EL355L./ EL354L./ EL111X./ EL161X./ EL151X./EL101L

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 8.1mm, minimum internal creepage distance is measured to 5.2mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 125°C.

For model EL101XH.: The symbol "X" in type denotes X = Part no. (0,1,2,3,4,5,6,7,8,9)

For model EX101U.: The symbol "X" may be L or V, and denotes different application.

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#### Optocoupler

EL451./EL452./EL3H7L./ EL351./ EL352./ EL3571N./ EL357NL.

#### 250Vrms

18

Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature:  $110^{\circ}$ C. The symbol "X" in type denotes X = Part no. (0,1,2,3,4).

#### Optocoupler

19 H11L3./H11D1./H11D2./H11D3./H11D4./H11G1./H11G2./H11G3./EL371./ EL725./4N50./4N51./4N52./4N53./4N54./4N55./4N56./4N57./4N58./4N59./ EL852./EL851.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 5.5mm and minimum distance through insulation is measured to 0.5mm.Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C. The symbol "X" in type denotes X = Part no. (0,1,2,3,4).

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#### Optocoupler

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CNX36U./CNX38U./CNX39U./SL5500./SL5501./SL5504./SL5511./ MOC8100./MOC8101./MOC8102./MOC8103./MOC8104./MOC8105./ MOC8106./MOC8107./MOC8108./EL9001./CNY17F-1./CNY17F-2./ CNY17F-3./CNY17F-4./H11AA1./H11AA2./H11AA3./H11AA4./HS817./ K817P./TCET110.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C. Tested for 5000m.

#### Optocoupler

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TCET111./TCET120./VO610A./VO615A./CNY17G./CNY75./CQY80./K233./ TCDT110./TCDT111./TCDT112./EL2501./EL2561./EL8171./CNY171-1./ CNY171-2./CNY171-3./CNY171-4./CNY17F1-1./CNY17F1-2./CNY17F1-3./ CNY17F1-4./EL610./EL817L.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C. Tested for 5000m.

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Optocoupler

ELM456. / ELM61L. / ELM680. / ELM511.

#### 250Vrms

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High Speed Optocoupler. Minimum external creepage distance is measured to 8.4mm, minimum internal creepage distance is measured to 5.56mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100 °C.

Optocoupler 23 EL080L./EL081L./EL083L./ EL086L.

#### 250Vrms

High Speed Optocoupler . Minimum external creepage distance is measured to 4.4mm, minimum internal creepage distance is measured to 3.5mm and minimum distance through insulation is measured to 0.4mm. Tested for basic and supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 2400Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C. The symbol "X" in type denotes X = Part no. (0,1,L,A,N).

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#### Optocoupler

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ELS500./ELS501./ELS511./ELS050L./ELS051L./ELS052L./ELS600./ELS601./ ELS611./ELS060L./ELS061L./ELS062L.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 8.4mm, minimum internal creepage distance is measured to 5.56mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100 °C.

Optocoupler

25 ELM460A./ELM840A./ELM860A.

#### 250Vrms

Solid State Relay.Minimum external creepage distance is measured to 5.7mm, minimum internal creepage distance is measured to 4.31mm and minimum distance through insulation is measured to 0.3mm. Tested for basic and supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 125 °C.

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Optocoupler 26

EL101XH.

#### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 8.1mm, minimum internal creepage distance is measured to 5.2mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 125°C.

For model EL101XH.: The symbol "X" in type denotes X = Part no. (0,1,2,3,4,5,6,7,8,9)

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Trade mark (if different from page 1)

Optocoupler 27 EX357NH. / EX3H7H. / EX3H7U.

### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. The symbol "X" may be L or V, and denotes different application. Maximum operating temperature: 125°C

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### Optocoupler

28 EL817H.

### 250Vrms

Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. The symbol "X" may be L or V, and denotes different application. Maximum operating temperature: 125°C

Optocoupler 29 ELM60U. / ELM61U.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Maximum operating temperature: 100°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.

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Optocoupler 30

ELS60U. / ELS61U. / ELS62U.

#### 250Vrms

High Speed Optocoupler . Minimum external creepage distance is measured to 8.4mm, minimum internal creepage distance is measured to 5.56mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation.

Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100 °C.

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Trade mark (if different from page 1)

Product Pos. No Model / Type Ref. Trade mark (if different from page 1) Rating Principal characteristics Optocoupler 31

ELS270. / ELS271. / ELS272.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 8.4mm, minimum internal creepage distance is measured to 5.56mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100 °C.

Optocoupler

32

EL2514.

### 250Vrms

Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C. Tested for 5000m.

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Optocoupler 33 ELM453H. / ELM611H.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 8.4mm, minimum internal creepage distance is measured to 5.56mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank. A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100 °C.

#### Optocoupler

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34 EL0200. / EL0201. / EL0202. / EL0210. / EL0211. / EL0212.

#### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 4.4mm, minimum internal creepage distance is measured to 3.5mm and minimum distance through insulation is measured to 0.4mm. Tested for basic and supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 2400Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C. The symbol "X" in type denotes X = Part no. (0,1,L,A,N).

Optocoupler

35

ELL300.

#### 250Vrms

Linear Optocoupler. Minimum external creepage distance is measured to 8.0mm, minimum internal creepage distance is measured to 0.90mm and minimum distance through insulation is measured to 0.90mm. Tested for basic/supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110 °C.

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Optocoupler 36 ELM440A./ELM640A./ELM660A.

#### 250Vrms

Solid State Relay. Minimum external creepage distance is measured to 5.7mm, minimum internal creepage distance is measured to 4.31mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 125 °C.

Optocoupler 37 EX3H4U.

#### 250Vrms

Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. The symbol "X" may be L or V, and denotes different application. Maximum operating temperature: 125°C

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Principal characteristics

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Optocoupler 38

EX101U.

#### 250Vrms

Minimum external creepage distance is measured to 8.1mm, minimum internal creepage distance is measured to 5.2mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 125°C. For model EL101XH.: The symbol "X" in type denotes X = Part no. (0,1,2,3,4,5,6,7,8,9) For model EX101U.: The symbol "X" may be L or V, and denotes different application.

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Trade mark (if different from page 1)

Optocoupler 39 EX354NU. / EX357NU.

#### 250Vrms

Minimum external creepage distance is measured to 5.0mm, minimum internal creepage distance is measured to 4.0mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. The symbol "X" may be L or V, and denotes different application. Maximum operating temperature: 125°C

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Oldel No. 397004

Product Pos. No Model / Type Ref. Trade mark (if different from page 1) Rating Principal characteristics

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Product Pos. No Model / Type Ref.

Trade mark (if different from page 1) Rating Principal characteristics Optocoupler 40

ELM406A.

#### 250Vrms

Solid State Relay. Minimum external creepage distance is measured to 5.7mm, minimum internal creepage distance is measured to 4.31mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 125 °C.

### Optocoupler

41

ELS3120. / ELS3140. / ELS3150. / ELS3180. / ELS3184.

### 250Vrms

High Speed Optocoupler. Minimum external creepage distance is measured to 8.4mm, minimum internal creepage distance is measured to 5.56mm and minimum distance through insulation is measured to 0.4mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110  $^{\circ}$ C

### Optocoupler

42

ELR0323. / ELR1323. / ELR2323. / ELR3323. / ELR0313. / ELR1313. / ELR2313. / ELR3313. / ELR0213. / ELR1213. / ELR2213. / ELR3213.

### 250Vrms

Power Triac Optocoupler. Minimum external creepage distance is measured to 8.2mm, minimum internal creepage distance is measured to 5.1mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 85 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength tests, between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 85°C

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Product Pos. No Model / Type Ref. Trade mark (if different from page 1) Rating Principal characteristics

Product Pos. No Model / Type Ref. Trade mark (if different from page 1) Rating Principal characteristics

Product Pos. No Model / Type Ref. Trade mark (if different from page 1) Rating Principal characteristics Optocoupler 43 EX354NU. / EX357NU.

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#### 250Vrms

Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110°C. Tested for 5000m.

Optocoupler 44 ELS680.

#### 250Vrms

High Speed Optocoupler . Minimum external creepage distance is measured to 4.4mm, minimum internal creepage distance is measured to 3.5mm and minimum distance through insulation is measured to 0.4mm. Tested for basic and supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 100 degree C, 1h in 25degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 2400Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 100°C. The symbol "X" in type denotes X = Part no. (0,1,L,A,N).

#### Optocoupler

45

ELL200.

#### 250Vrms

Linear Optocoupler. Minimum external creepage distance is measured to 8.0mm, minimum internal creepage distance is measured to 0.90mm and minimum distance through insulation is measured to 0.90mm. Tested for basic/supplementary insulation. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape. Maximum operating temperature: 110 °C.

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Product Pos. No Model / Turne Def	Optocoupler 46 EL 2000 / EL 2100 / EL 2200 / EL 2250 / EL 2250 / EL 2400 / EL 2000 /
Model / Type Ref.	EL806A./ EL810A./ EL820A./ EL825A./ EL835A./ EL840A./ EL860A./ EL406A./ EL410A./ EL420A./ EL425A./ EL435A./ EL440A./ EL460A./ EL606A./ EL610A./ EL620A./ EL625A./ EL635A./ EL640A./ EL660A.
Trade mark (if different from page 1)	
Rating Principal characteristics	250Vrms Solid State Relay. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Maximum operating temperature: 125°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 125 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.
Product	Optocoupler
Pos. No Model / Type Ref.	47 ELT301X./ ELT302X./ ELT305X./ ELT303X./ ELT304X./ ELT306X./ ELT308X./ ELT307X.
Trade mark (if different from page 1)	
Rating	250Vrms
Principal characteristics	Triac Optocoupler. Minimum external creepage distance is measured to 7.7mm, minimum internal creepage distance is measured to 6.0mm and minimum distance through insulation is measured to 0.5mm. Tested for reinforced insulation. Maximum operating temperature: 110°C. Thermal cycling test, 10 cycles. Each cycle: 68h in 110 degree C, 1h in 25 degree C, 2h in 0 degree C and 1h in 25 degree C. After the cycling test a humidity test for 48h in 93% relative humidity. Electric strength test between input and output 4800Vac/1 minute. The symbol "X" in type denotes X = Part no. $(0,1,2,3,4)$ . The symbol "." in type designation may be blank, A~Z or numbers, and denote different pin shape.
Factories	

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