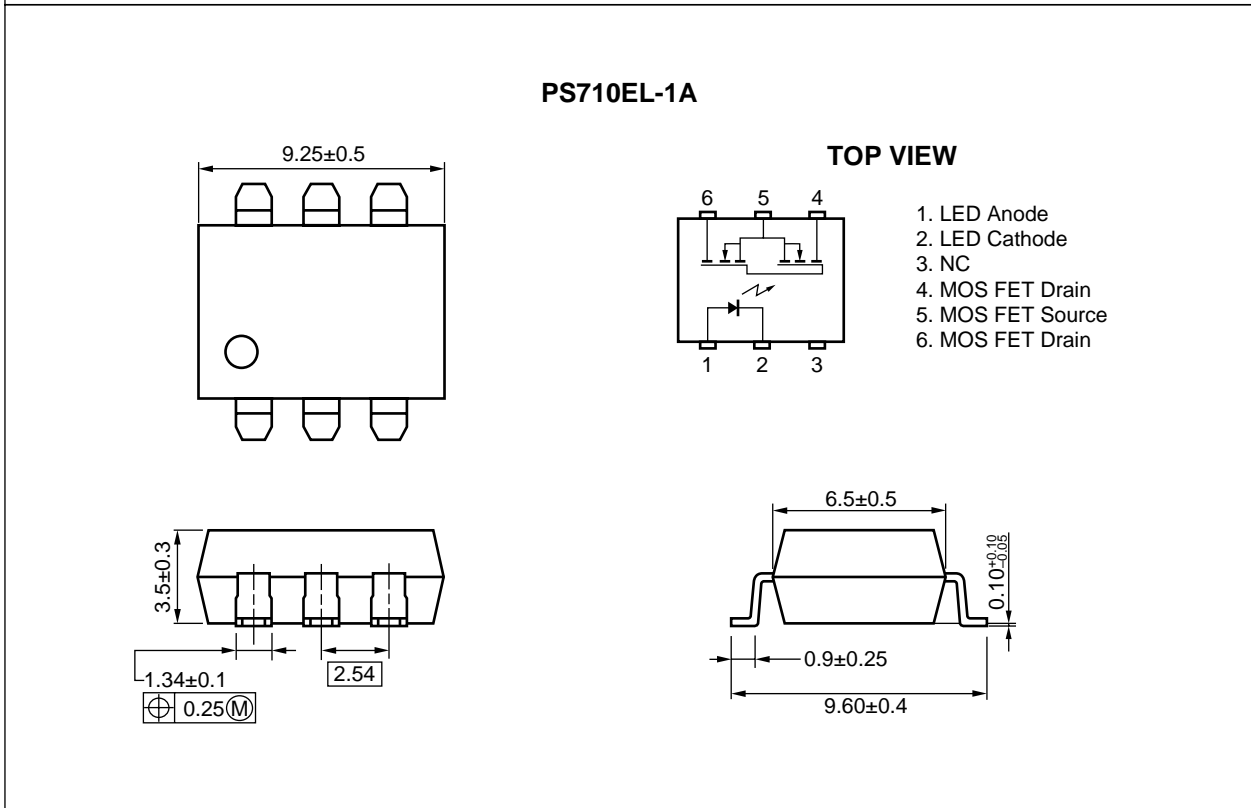
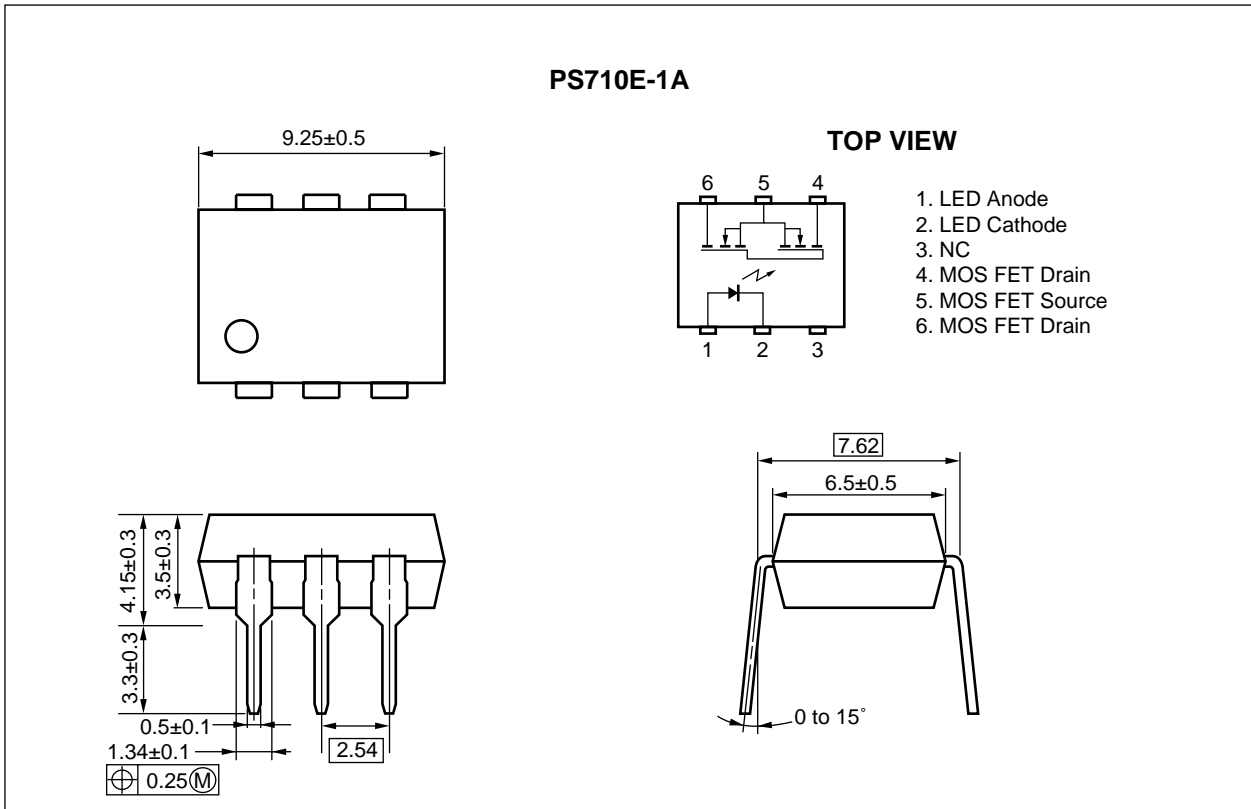
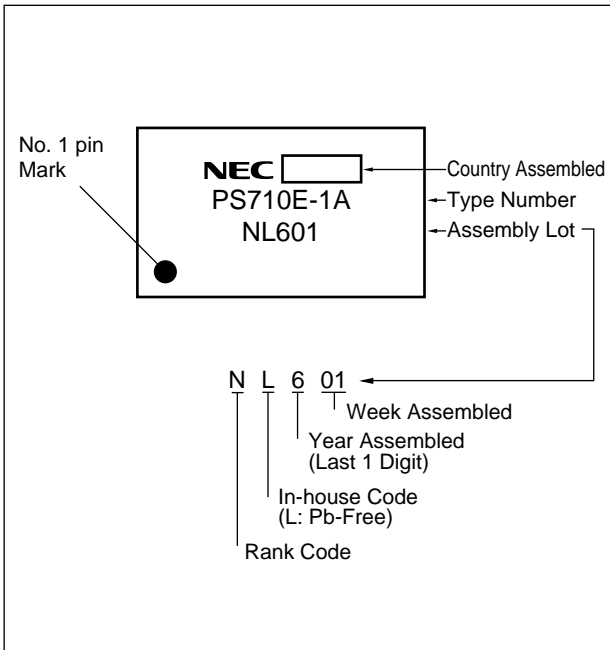


PACKAGE DIMENSIONS (UNIT: mm)



<R> MARKING EXAMPLE



<R> **ORDERING INFORMATION**

| Part Number | Order Number | Solder Plating Specification | Packing Style | Safety Standard Approval | Application Part Number ^{*1} |
|---------------|-----------------|------------------------------|------------------------------|------------------------------------|---------------------------------------|
| PS710E-1A | PS710E-1A-A | Pb-Free | Magazine case 50 pcs | Standard products (UL approved) | PS710E-1A |
| PS710EL-1A | PS710EL-1A-A | | | | |
| PS710EL-1A-E3 | PS710EL-1A-E3-A | | Embossed Tape 1 000 pcs/reel | | |
| PS710EL-1A-E4 | PS710EL-1A-E4-A | | | | |

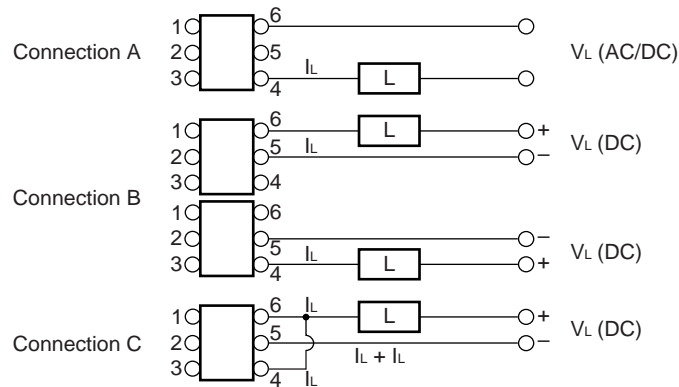
*1 For the application of the Safety Standard, following part number should be used.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified)

| Parameter | | Symbol | Ratings | Unit | |
|---------------------------------|--|------------------|----------------|---------|---|
| Diode | Forward Current (DC) | I _F | 50 | mA | |
| | Reverse Voltage | V _R | 5.0 | V | |
| | Power Dissipation | P _D | 50 | mW | |
| | Peak Forward Current ^{*1} | I _{FP} | 1 | A | |
| MOS FET | Load Voltage | V _L | 80 | V | |
| | Continuous Load Current ^{*2} | Connection A | I _L | 2.0 | A |
| | | Connection B | | 3.0 | |
| | | Connection C | | 4.0 | |
| | Pulse Load Current ^{*3} (AC/DC Connection) | I _{LP} | 4.0 | A | |
| Power Dissipation | P _D | 600 | mW | | |
| Isolation Voltage ^{*4} | | BV | 1 500 | Vr.m.s. | |
| Total Power Dissipation | | P _T | 650 | mW | |
| Operating Ambient Temperature | | T _A | -40 to +85 | °C | |
| Storage Temperature | | T _{stg} | -40 to +100 | °C | |

*1 PW = 100 μs, Duty Cycle = 1%

*2 Conditions: I_F ≥ 2 mA. The following types of load connections are available.



*3 PW = 100 ms, 1 shot

*4 AC voltage for 1 minute at T_A = 25°C, RH = 60% between input and output
Pins 1-3 shorted together, 4-6 shorted together.

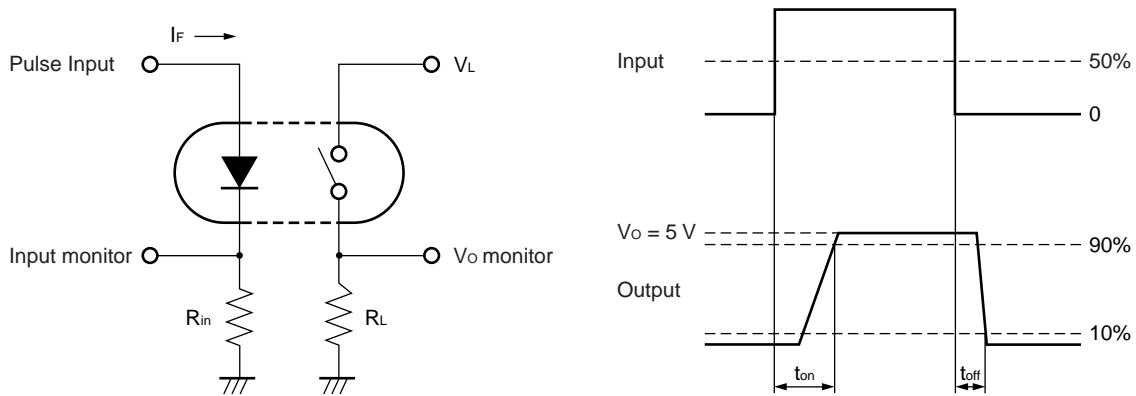
RECOMMENDED OPERATING CONDITIONS (T_A = 25°C)

| Parameter | Symbol | MIN. | TYP. | MAX. | Unit |
|-----------------------|----------------|------|------|------|------|
| LED Operating Current | I _F | 2 | 10 | 20 | mA |
| LED Off Voltage | V _F | 0 | | 0.5 | V |

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

| Parameter | | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|-----------|-------------------------------|-------------------|---|------|-----------------|------|------|
| Diode | Forward Voltage | V _F | I _F = 10 mA | | 1.2 | 1.4 | V |
| | Reverse Current | I _R | V _R = 5 V | | | 5.0 | μA |
| MOS FET | Off-state Leakage Current | I _{Loff} | V _D = 80 V | | | 50 | nA |
| | Output Capacitance | C _{out} | V _D = 0 V, f = 1 MHz | | 480 | | pF |
| Coupled | LED On-state Current | I _{Fon} | I _L = 2.0 A | | | 2.0 | mA |
| | On-state Resistance | R _{on} | I _F = 10 mA, I _L = 2.0 A, t ≤ 10 ms | | 0.083 | 0.15 | Ω |
| | Turn-on Time ^{*1,2} | t _{on} | I _F = 10 mA, V _O = 5 V, R _L = 500 Ω, | | 1.0 | 2.0 | ms |
| | Turn-off Time ^{*1,2} | t _{off} | PW ≥ 10 ms | | 0.02 | 0.2 | |
| | Isolation Resistance | R _{I-O} | V _{I-O} = 1.0 kV _{DC} | | 10 ⁹ | | Ω |
| | Isolation Capacitance | C _{I-O} | V = 0 V, f = 1 MHz | | | 0.5 | pF |

***1 Test Circuit for Switching Time**

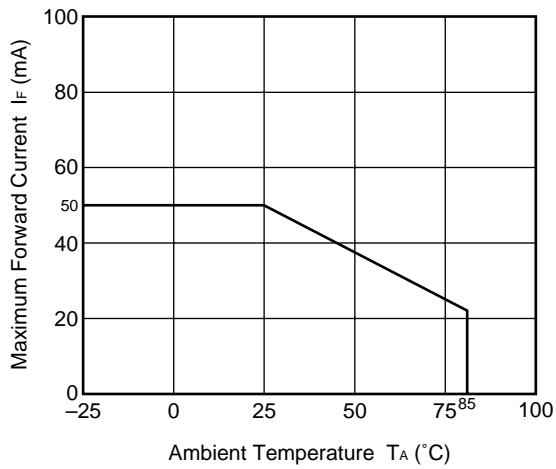


***2** The turn-on time and turn-off time are specified as input-pulse width ≥ 10 ms.

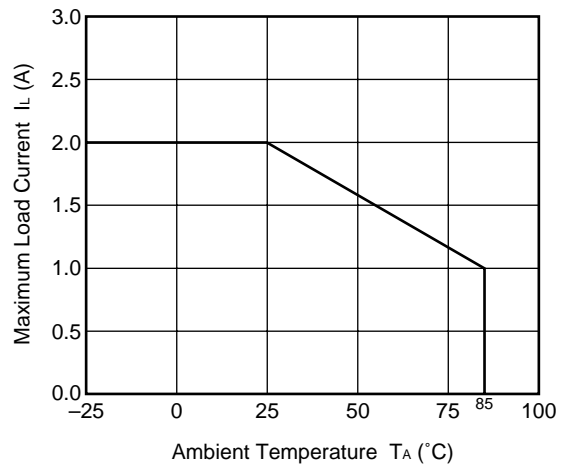
Be aware that when the device operates with an input-pulse width less than 10 ms, the turn-on time and turn-off time will increase.

TYPICAL CHARACTERISTICS (T_A = 25°C, unless otherwise specified)

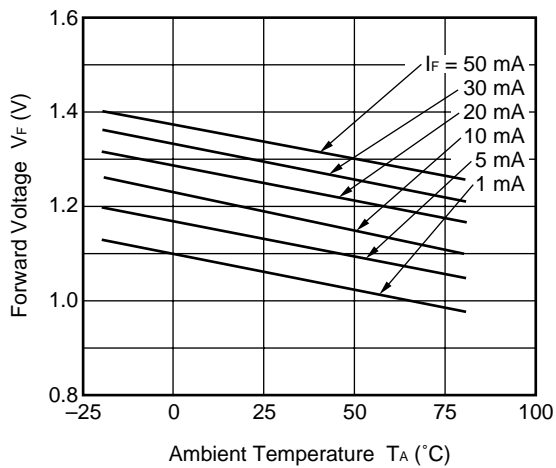
MAXIMUM FORWARD CURRENT vs. AMBIENT TEMPERATURE



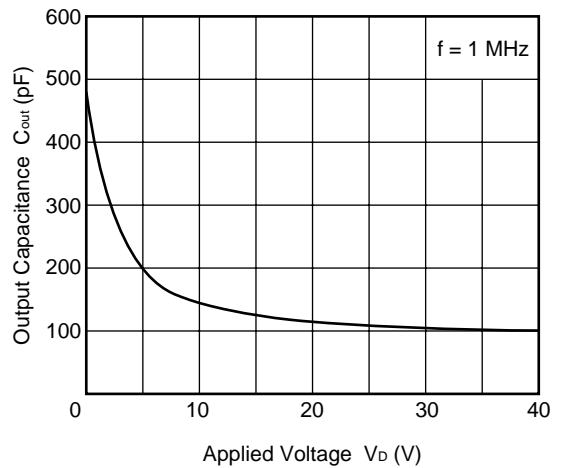
MAXIMUM LOAD CURRENT vs. AMBIENT TEMPERATURE



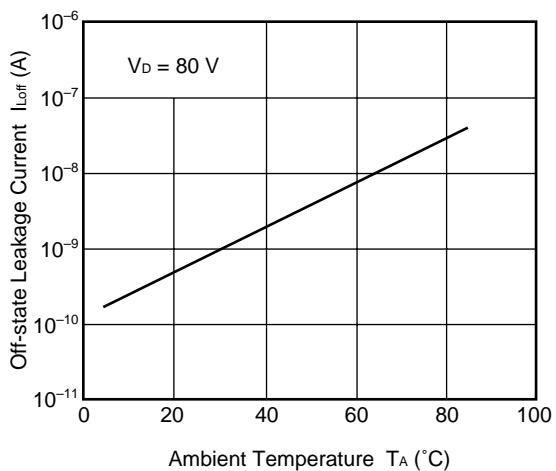
FORWARD VOLTAGE vs. AMBIENT TEMPERATURE



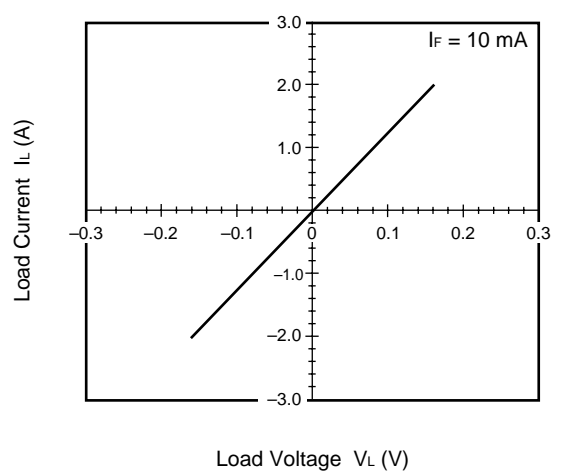
OUTPUT CAPACITANCE vs. APPLIED VOLTAGE



OFF-STATE LEAKAGE CURRENT vs. AMBIENT TEMPERATURE

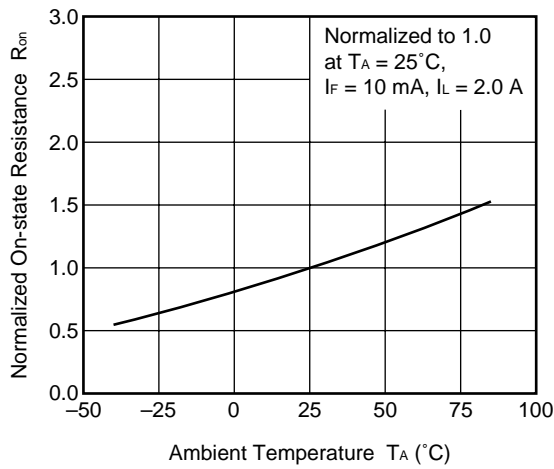


LOAD CURRENT vs. LOAD VOLTAGE

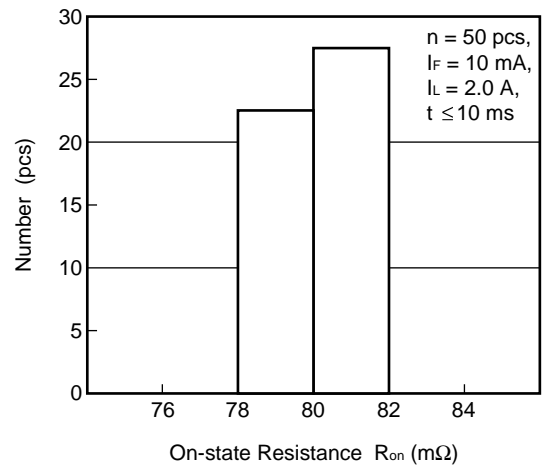


Remark The graphs indicate nominal characteristics.

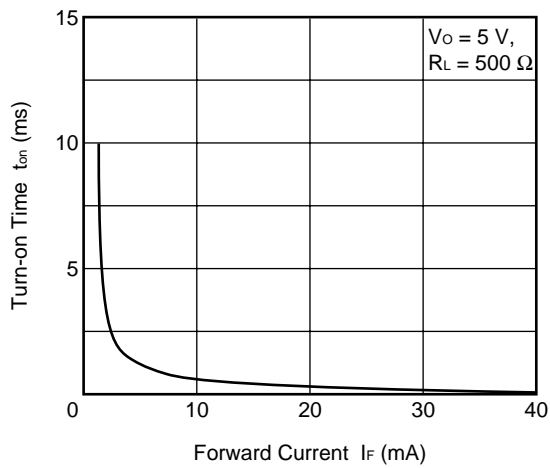
NORMALIZED ON-STATE RESISTANCE vs. AMBIENT TEMPERATURE



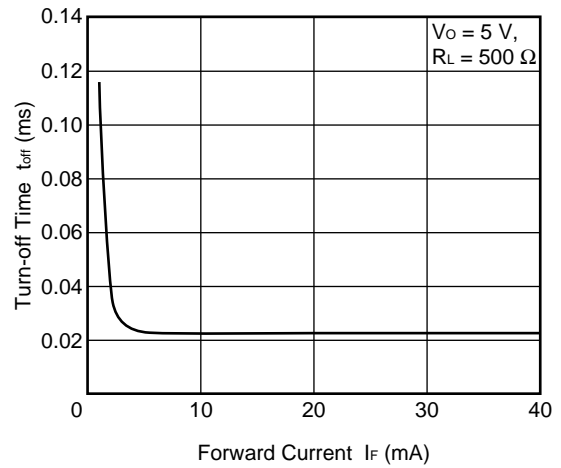
ON-STATE RESISTANCE DISTRIBUTION



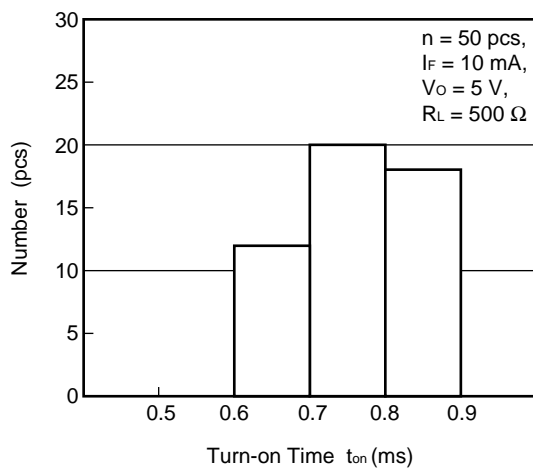
TURN-ON TIME vs. FORWARD CURRENT



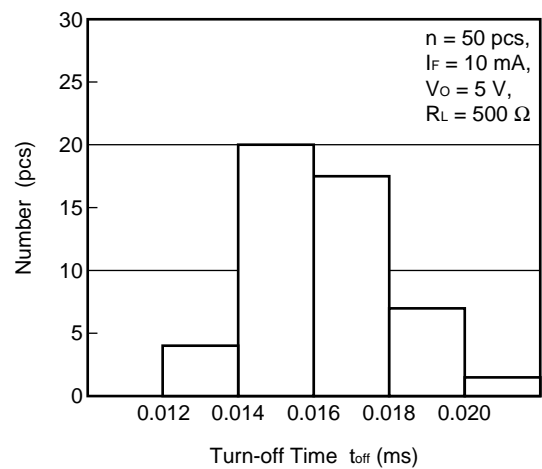
TURN-OFF TIME vs. FORWARD CURRENT



TURN-ON TIME DISTRIBUTION

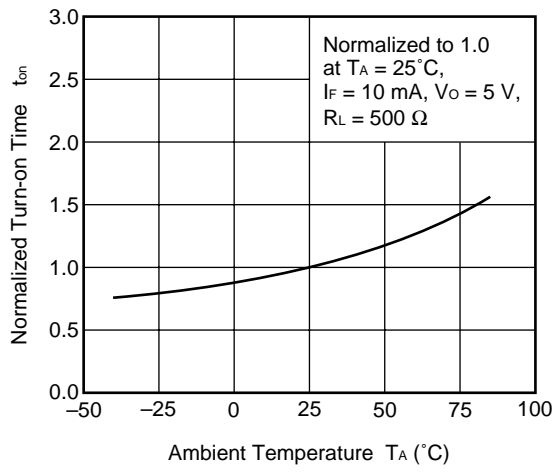


TURN-OFF TIME DISTRIBUTION

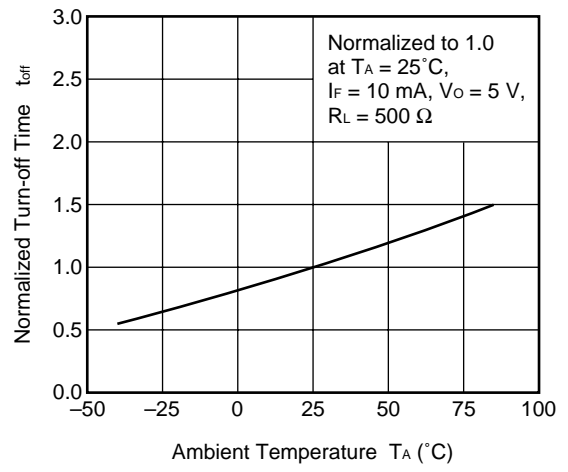


Remark The graphs indicate nominal characteristics.

NORMALIZED TURN-ON TIME vs. AMBIENT TEMPERATURE



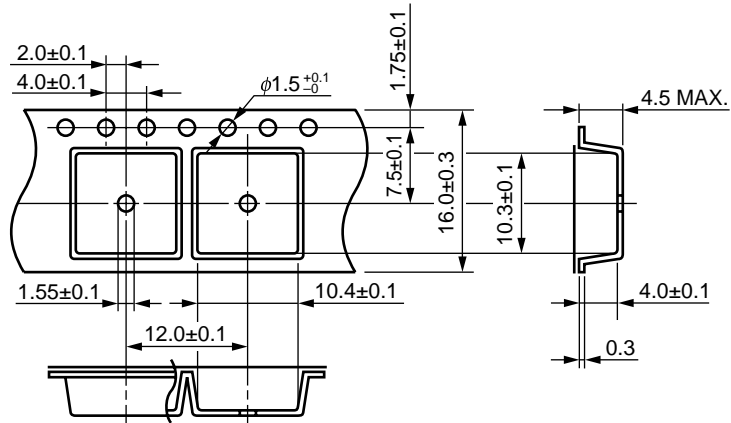
NORMALIZED TURN-OFF TIME vs. AMBIENT TEMPERATURE



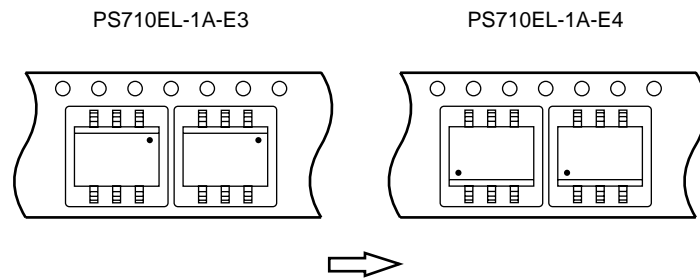
Remark The graphs indicate nominal characteristics.

TAPING SPECIFICATIONS (UNIT: mm)

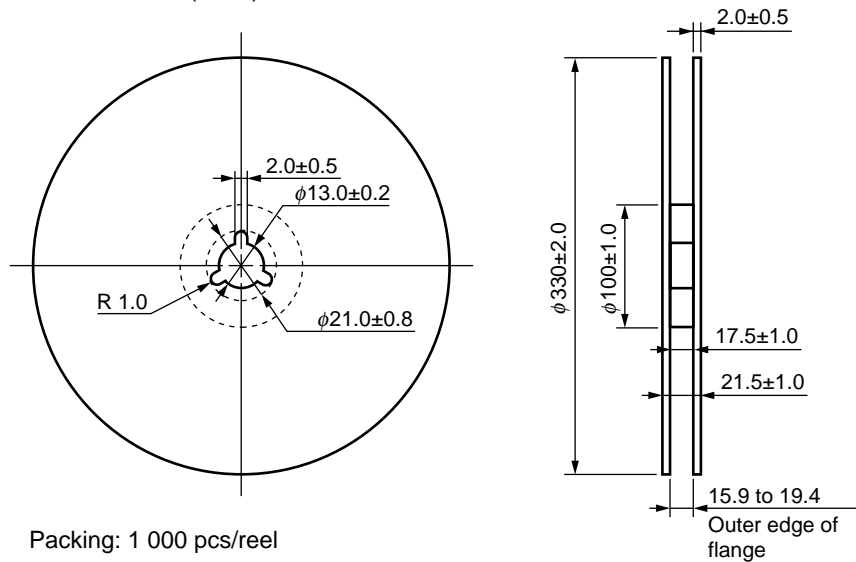
Outline and Dimensions (Tape)



Tape Direction



Outline and Dimensions (Reel)

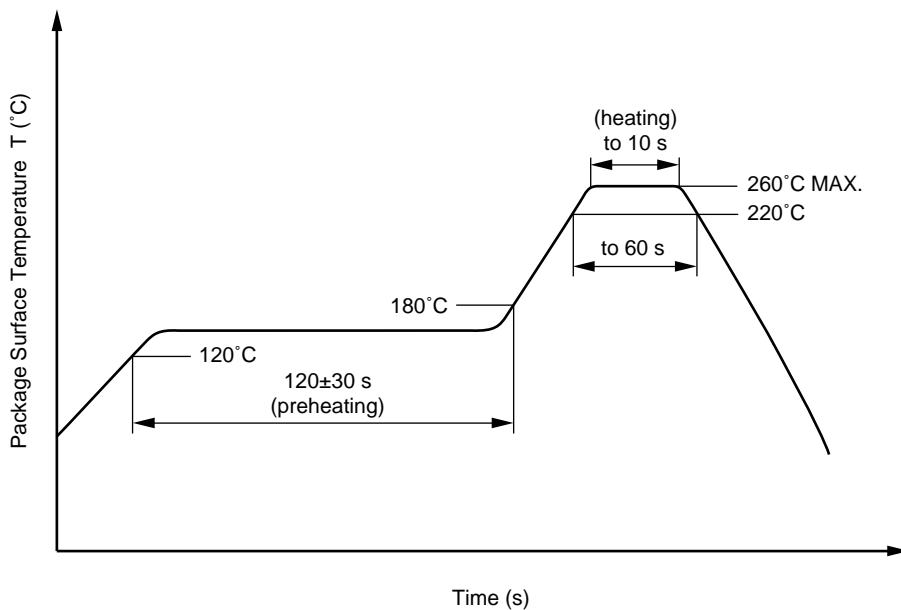


RECOMMENDED SOLDERING CONDITIONS

(1) Infrared reflow soldering

- Peak reflow temperature 260°C or below (package surface temperature)
- Time of peak reflow temperature 10 seconds or less
- Time of temperature higher than 220°C 60 seconds or less
- Time to preheat temperature from 120 to 180°C 120±30 s
- Number of reflows Three
- Flux Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt% is recommended.)

Recommended Temperature Profile of Infrared Reflow



(2) Wave soldering

- Temperature 260°C or below (molten solder temperature)
- Time 10 seconds or less
- Preheating conditions 120°C or below (package surface temperature)
- Number of times One
- Flux Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt% is recommended.)

<R>

(3) Soldering by soldering iron

- Peak temperature (lead part temperature) 350°C or below
- Time (each pins) 3 seconds or less
- Flux Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt% is recommended.)

- (a) Soldering of leads should be made at the point 1.5 to 2.0 mm from the root of the lead.
- (b) Please be sure that the temperature of the package would not be heated over 100°C.

(4) Cautions

- Fluxes
Avoid removing the residual flux with freon-based and chlorine-based cleaning solvent.

<R>

USAGE CAUTIONS

1. Protect against static electricity when handling.
2. Avoid storage at a high temperature and high humidity.

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