

TOSHIBA Photocoupler GaAs Ired & Photo-Triac

TLP762J

Office Machine

Household Use Equipment

Triac Driver

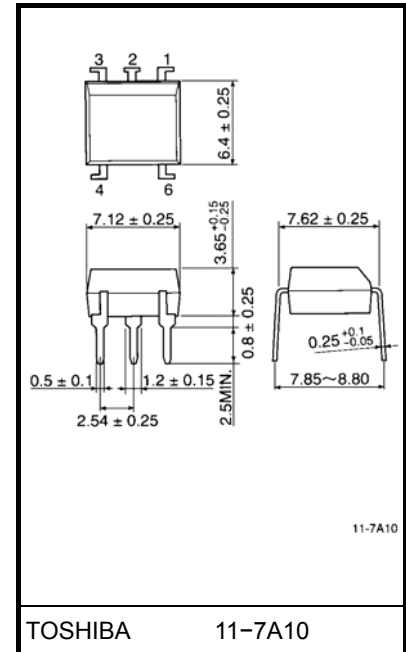
Solid State Relay

Unit: mm

The TOSHIBA TLP762J consists of a GaAs infrared LED optically coupled to a photo-triac in a 6 lead plastic DIP.

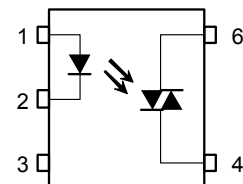
- Peak off-state voltage: 600 V (Min.)
 - Trigger LED current: 10 mA (Max.)
 - On-state current: 100 mA (Max.)
 - Isolation voltage: 4000 Vrms (Min.)
 - UL recognized: UL1577, file no. E67349
 - BSI approved: BS EN60065: 2002,
Certificate No. 8945
BS EN60950-1: 2002,
Certificate No. 8946
 - SEMKO approved: SS EN60065 (EN60065, 1993)
SS EN60950 (EN60950, 1992)
SS EN60335 (EN60335, 1988)
Certificate No. 9522145
 - Option (D4) type
VDE approved: DIN EN 60747-5-2
Certificate No. 40009373
Maximum operating insulation voltage: 890 V_{PK}
Highest permissible over voltage: 6000 V_{PK}

(Note) When an EN60747-5-2 approved type is needed,
please designate the "option (D4)".
- | | | |
|-------------------------|---------------------|----------------------|
| | 7.62 mm pich | 10.16 mm pich |
| | <u>TLP762J type</u> | <u>TLP762JF type</u> |
| • Creepage distance: | 7.0 mm (Min.) | 8.0 mm (Min.) |
| Clearance: | 7.0 mm (Min.) | 8.0 mm (Min.) |
| Internal creepage path: | 4.0 mm (Min.) | 4.0 mm (Min.) |
| Insulation thickness: | 0.5 mm (Min.) | 0.5 mm (Min.) |



Weight: 0.42 g (Typ.)

Pin configuration (top view)



- 1 : Anode
- 2 : Cathode
- 3 : NC
- 4 : Terminal 1
- 6 : Terminal 2

Absolute Maximum Ratings (Ta = 25°C)

| Characteristic | | Symbol | Rating | Unit | |
|--|---|-------------------------------|-----------|---------|----|
| LED | Forward current | I_F | 50 | mA | |
| | Forward current derating (Ta ≥ 53°C) | $\Delta I_F / ^\circ\text{C}$ | -0.7 | mA / °C | |
| | Peak forward current (100 μs pulse, 100 pps) | I_{FP} | 1 | A | |
| | Reverse voltage | V_R | 5 | V | |
| | Junction temperature | T_j | 125 | °C | |
| Detector | Off-state output terminal voltage | V_{DRM} | 600 | V | |
| | On-state RMS current | $I_{T(RMS)}$ | Ta = 25°C | 100 | mA |
| | | | Ta = 70°C | 50 | |
| | On-state current derating (Ta ≥ 25°C) | $\Delta I_T / ^\circ\text{C}$ | -1.1 | mA / °C | |
| | Peak on-state current (100μs pulse, 120 pps) | I_{TP} | 2 | A | |
| | Peak nonrepetitive surge current (PW = 10 ms, DC = 10%) | I_{TSM} | 1.2 | A | |
| | Junction temperature | T_j | 115 | °C | |
| Storage temperature range | T_{stg} | -55~125 | °C | | |
| Operating temperature range | T_{opr} | -40~100 | °C | | |
| Lead soldering temperature (10 s) | T_{sol} | 260 | °C | | |
| Isolation voltage (AC, 1 min., R.H. ≤ 60%) | BV_S | 4000 | Vrms | | |

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Recommended Operating Conditions

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|-----------------------|-----------|------|------|------|----------|
| Supply voltage | V_{AC} | — | — | 240 | V_{ac} |
| Forward current | I_F | 15 | 20 | 25 | mA |
| Peak on-state current | I_{TP} | — | — | 1 | A |
| Operating temperature | T_{opr} | -25 | — | 85 | °C |

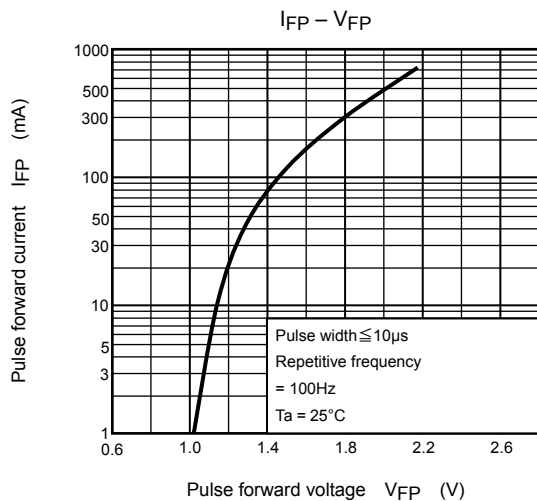
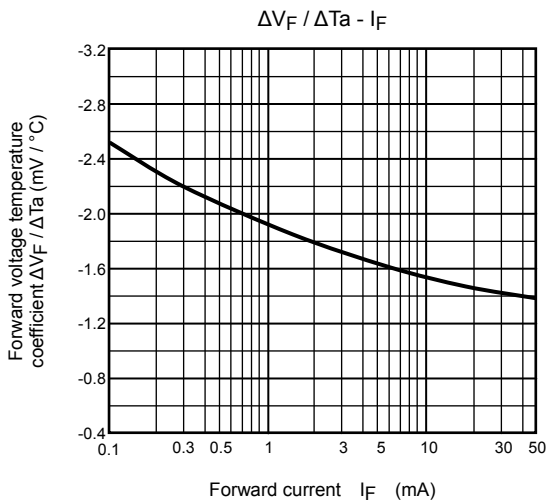
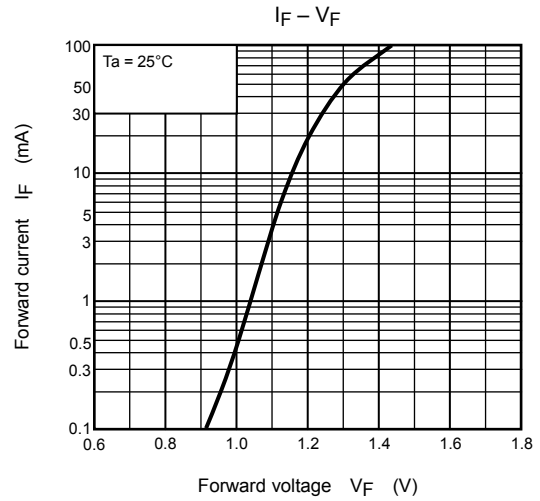
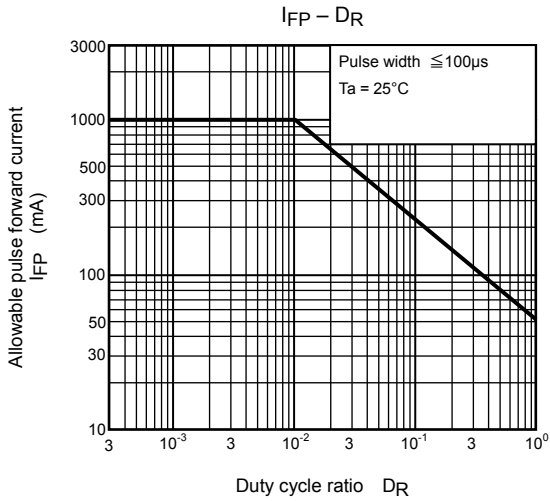
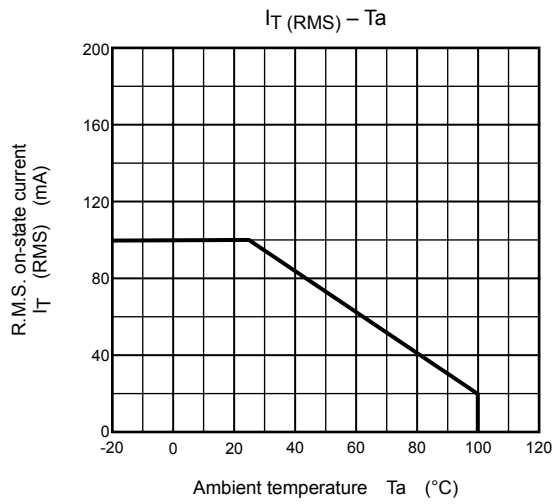
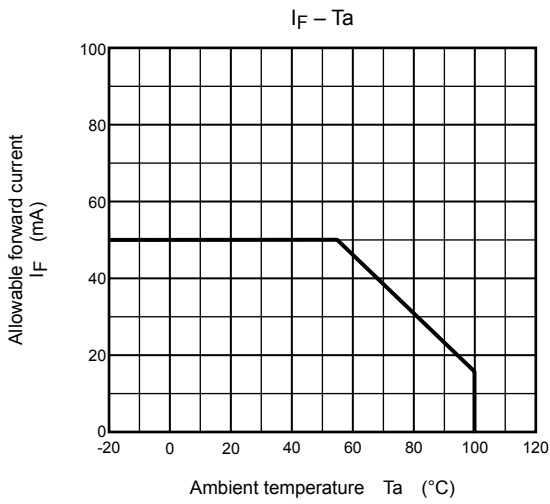
Note: Recommended operating conditions are given as a design guideline to obtain expected performance of the device. Additionally, each item is an independent guideline respectively. In developing designs using this product, please confirm specified characteristics shown in this document.

Individual Electrical Characteristics (Ta = 25°C)

| Characteristic | | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|----------------|--|---------------|--|------|------|------|--------------------------|
| LED | Forward voltage | V_F | $I_F = 10 \text{ mA}$ | 1.0 | 1.15 | 1.3 | V |
| | Reverse current | I_R | $V_R = 5 \text{ V}$ | — | — | 10 | μA |
| | Capacitance | C_T | $V = 0, f = 1 \text{ MHz}$ | — | 30 | — | pF |
| Detector | Peak off-state current | I_{DRM} | $V_{DRM} = 600 \text{ V}$ | — | 10 | 1000 | nA |
| | Peak on-state voltage | V_{TM} | $I_{TM} = 100 \text{ mA}$ | — | 1.7 | 3.0 | V |
| | Holding current | I_H | — | — | 0.6 | — | mA |
| | Critical rate of rise of off-state voltage | dv / dt | $V_{in} = 240 \text{ V}, T_a = 85^\circ\text{C}$ | — | 500 | — | $\text{V} / \mu\text{s}$ |
| | Critical rate of rise of commutating voltage | $dv / dt (c)$ | $V_{in} = 60 \text{ Vrms}, I_T = 15 \text{ mA}$ | — | 0.2 | — | $\text{V} / \mu\text{s}$ |

Coupled Electrical Characteristics (Ta = 25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|-------------------------------|----------|------------------------------|--------------------|-----------|------|----------|
| Trigger LED current | I_{FT} | $V_T = 6 \text{ V}$ | — | — | 10 | mA |
| Capacitance (input to output) | C_S | $V_S = 0, f = 1 \text{ MHz}$ | — | 0.8 | — | pF |
| Isolation resistance | R_S | $V_S = 500 \text{ V}$ | 1×10^{12} | 10^{14} | — | Ω |
| Isolation voltage | BV_S | AC, 1 minute | 4000 | — | — | Vrms |
| | | AC, 1 second, in oil | — | 10000 | — | |
| | | DC, 1 minute, in oil | — | 10000 | — | V_{dc} |



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