

TLP206G

PBX

MODEM · FAX CARD

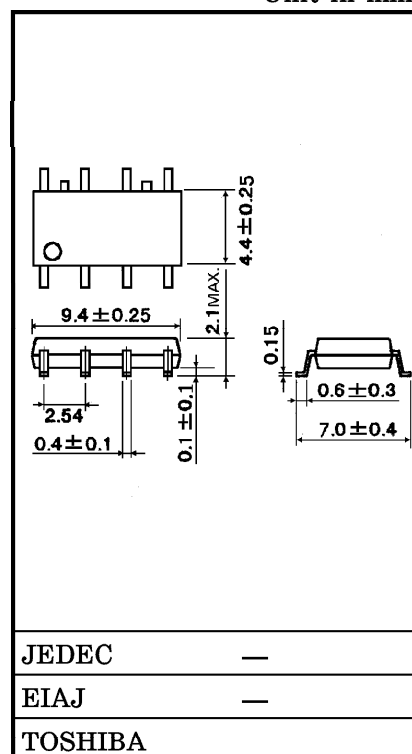
MEASUREMENT INSTRUMENT

The TOSHIBA TLP206G consists of gallium arsenide infrared emitting diode optically coupled to a photo-MOS FET in a 8 pin SOP.

The TLP206G is a 2-Form-A switch which is suitable for replacement of mechanical relays in many applications.

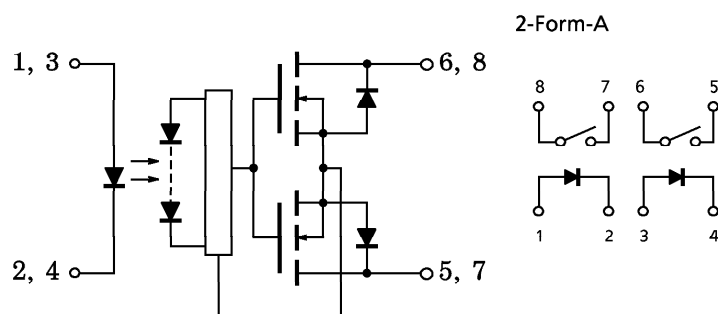
- SOP 8 pin (2.54SOP8) : 2-Form-A
- Peak Off-State Voltage : 350 V (min)
- Trigger LED Current : 3 mA (max)
- On-State Current : 120 mA (max)
- On-State Resistance : 35 Ω (max)
- Isolation Voltage : 1500 V_{rms} (min)
- UL Recognized : UL1577, File No. E67349
- BSI Approved : BS EN60065 : 1994, Certificate No. 8273
BS EN60950 : 1992, Certificate No. 8274
- SEMKO Approved : SS EN60065
SS EN60950
- Option (V4) type
TUV Approved : DIN VDE0884 / 06.92,
Certificate No. R9850580

Unit in mm

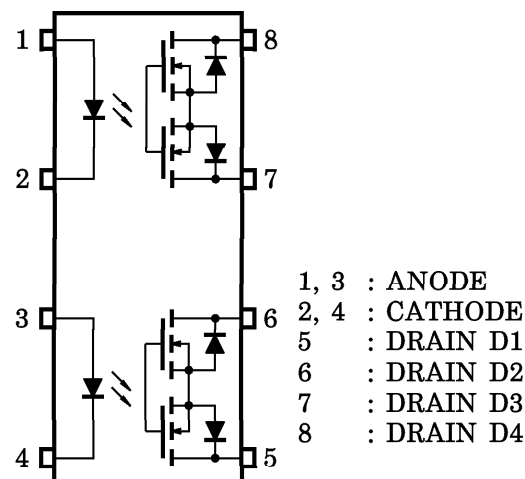


Weight : 0.2 g

SCHEMATIC



PIN CONFIGURATION (TOP VIEW)



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MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------------------------------|-----------------------------------------------|-----------------------|---------|------------------|
| LED | Forward Current | I _F | 50 | mA |
| | Forward Current Derating (Ta ≥ 25°C) | ΔI _F / °C | −0.5 | mA / °C |
| | Pulse 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 _{OFF} | 350 | V |
| | On-State Current | I _{ON} | 100 | mA |
| | | | 120 | |
| | On-State RMS Current Derating (Ta ≥ 25°C) | ΔI _{ON} / °C | −1.0 | mA / °C |
| | | | −1.2 | |
| | Junction Temperature | T _j | 125 | °C |
| Storage Temperature Range | | T _{stg} | −55~125 | °C |
| Operating Temperature Range | | T _{opr} | −40~85 | °C |
| Lead Soldering Temperature (10 s) | | T _{sol} | 260 | °C |
| Isolation Voltage (AC, 1 min., R.H. ≤ 60%) (Note 2) | | BV _S | 1500 | V _{rms} |

(Note 1) : Two channels operating simultaneously.

(Note 2) : Device considered a two-terminal device : pins 1, 2, 3 and 4 shorted together and pins 5, 6, 7 and 8 shorted together.

RECOMMENDED OPERATING CONDITIONS

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|-----------------------|------------------|------|------|------|------|
| Supply Voltage | V _{DD} | — | — | 280 | V |
| Forward Current | I _F | 5 | 7.5 | 25 | mA |
| On-State Current | I _{ON} | — | — | 100 | mA |
| Operating Temperature | T _{opr} | −20 | — | 65 | °C |

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
- The products described in this document are subject to the foreign exchange and foreign trade laws.
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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 | Off-State Current | I_{OFF} | $V_{OFF} = 350 \text{ V}$ | — | — | 1 | μA |
| | Capacitance | C_{OFF} | $V = 0, f = 1 \text{ MHz}$ | — | 40 | — | pF |

COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------|----------|-----------------------------------------------|------|------|------|----------|
| Trigger LED Current | I_{FT} | $I_{ON} = 120 \text{ mA}$ | — | 1 | 3 | mA |
| On-State Resistance | R_{ON} | $I_{ON} = 120 \text{ mA}, I_F = 5 \text{ mA}$ | — | 22 | 35 | Ω |

ISOLATION CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-----------------------------|--------|----------------------------------------------|--------------------|-----------|------|-----------|
| Capacitance Input to Output | C_S | $V_S = 0, f = 1 \text{ MHz}$ | — | 0.8 | — | pF |
| Isolation Resistance | R_S | $V_S = 500 \text{ V}, \text{R.H.} \leq 60\%$ | 5×10^{10} | 10^{14} | — | Ω |
| Isolation Voltage | BV_S | AC, 1 minute | 1500 | — | — | V_{rms} |
| | | AC, 1 second, in oil | — | 3000 | — | |
| | | DC, 1 minute, in oil | — | 3000 | — | Vdc |

SWITCHING CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------|-----------|---------------------------------------------|------|------|------|------|
| Turn-on Time | t_{ON} | $R_L = 200 \Omega$ (Note 3) | — | 0.3 | 1 | ms |
| Turn-off Time | t_{OFF} | $V_{DD} = 20 \text{ V}, I_F = 5 \text{ mA}$ | — | 0.1 | 1 | |

(Note 3) : Switching Time Test Circuit

