

9097250 TOSHIBA (DISCRETE/OPTO)

99D 17423 D

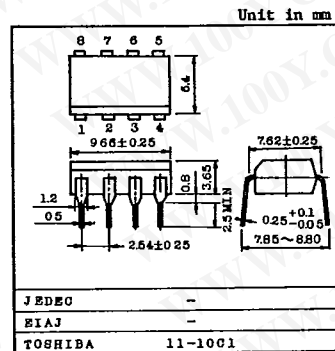
T-41-87

TLP511GA

GaAs IRED & PHOTO-THYRISTOR

The TOSHIBA TLP511GA consists of a photo-thyristor connected inverse parallel optically coupled to a gallium arsenide infrared emitting diode in an eight lead plastic DIP package.

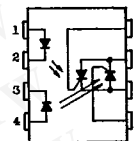
- Peak Off-State Voltage: 400V Min.
- Trigger LED Current : 7mA Max.
- On-State Current : 200mA Max.
- Isolation Voltage : 2500Vrms Min.
- UL Recognized : File No. E67349



MAXIMUM RATINGS (Ta = 25 °C)

| | CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--|--|-----------------------------|---------|-------|
| LED | Forward Current | I_F | 50 | mA |
| | Forward Current Derating (Ta>25°C) | $\Delta I_F/^\circ\text{C}$ | -0.5 | mA/°C |
| | Peak Forward Current (100µs pulse, 100pps) | I_{FP} | 1 | A |
| | Power Dissipation | P_D | 100 | mW |
| | Power Dissipation Derating (Ta>25°C) | $\Delta P_D/^\circ\text{C}$ | -1.0 | mW/°C |
| | Reverse Voltage | V_R | 5 | V |
| | Junction Temperature | T_j | 125 | °C |
| DETECTOR | Peak Forward Voltage (R _{GK} =27KΩ) | V_{DFM} | 400 | V |
| | Peak Reverse Voltage (R _{GK} =27KΩ) | V_{DRM} | 400 | V |
| | On-State Current | $I_T(\text{RHS})$ | 200 | mA |
| | On-State Current Derating (Ta>25°C) | $\Delta I_T/^\circ\text{C}$ | -2.7 | mA/°C |
| | Peak On-State Current (100µs pulse, 120pps) | I_{TP} | 3 | A |
| | Peak One Cycle Surge Current | I_{TSM} | 2 | A |
| | Peak Reverse Gate Voltage | V_{GH} | 5 | V |
| | Power Dissipation | P_D | 200 | mW |
| | Power Dissipation Derating (Ta>25°C) | $\Delta P_D/^\circ\text{C}$ | -2.7 | mW/°C |
| | Junction Temperature | T_j | 100 | °C |
| | Storage Temperature Range | T_{stg} | -55~150 | °C |
| | Operating Temperature Range | T_{opr} | -55~100 | °C |
| | Lead Soldering Temperature (10sec.) | T_{sold} | 260 | °C |
| Total Package Power Dissipation | P_T | 300 | mW | |
| Total Package Power Dissipation Derating (Ta>25°C) | $\Delta P_T/^\circ\text{C}$ | -4.0 | mW/°C | |
| Isolation Voltage (AC, 1 min, RH:60%) | BVS | 2500 | Vrms | |

PIN CONFIGURATION (TOP VIEW)



- 1, 4: ANODE
 2, 8: CATHODE
 5, 8: GATE
 6: CATHODE, ANODE
 7: ANODE, CATHODE

RECOMMENDED OPERATING CONDITIONS

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|----------------------------|-----------|------|------|------|------|
| Supply Voltage | V_{AC} | - | - | 120 | Vac |
| Forward Current | I_F | 14 | 16 | 25 | mA |
| Operating Temperature | T_{opr} | -25 | - | 85 | °C |
| Gate to Cathode Resistance | R_{GK} | - | 27 | 33 | kΩ |
| Gate to Cathode Capacity | C_{GK} | - | 0.01 | 0.1 | µF |

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787

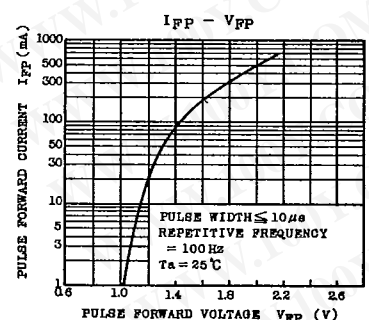
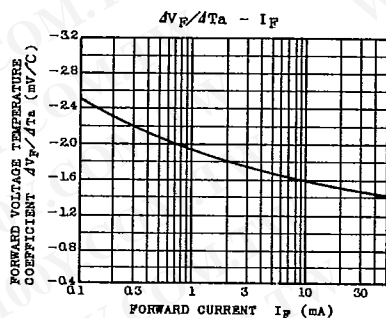
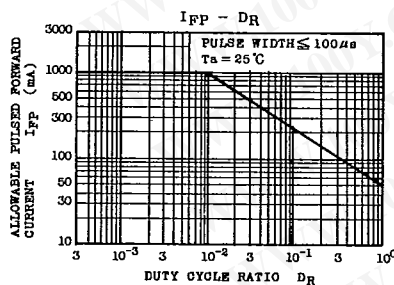
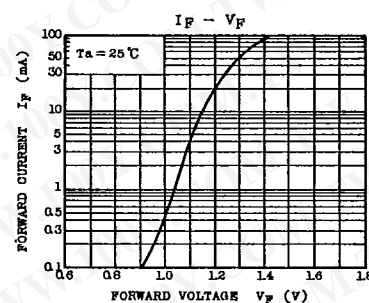
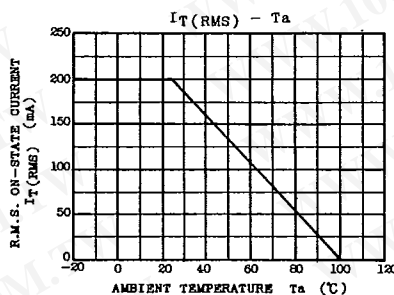
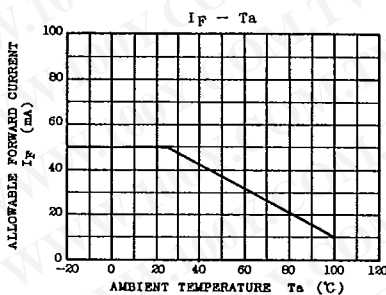
[Http://www.100y.com.tw](http://www.100y.com.tw)

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT | |
|----------------|-------------------|---|--|----------|------|------|------|----|
| LED | Forward Voltage | V _F | I _F =10mA | 1.0 | 1.15 | 1.3 | V | |
| | Reverse Current | I _R | V _R =5V | - | - | 10 | μA | |
| | Capacitance | C _T | V=0, f=1MHz | - | 30 | - | pF | |
| DETECTOR | Off-State Current | I _{DRM} | V _{AK} =400V R _{GK} =27kΩ | Ta=25°C | - | 10 | 5000 | nA |
| | | | Ta=100°C | - | 1 | 100 | μA | |
| | Reverse Current | I _{RRM} | V _{KA} =400V R _{GK} =27kΩ | Ta=25°C | - | 10 | 5000 | nA |
| | | | | Ta=100°C | - | 1 | 100 | μA |
| | On-State Voltage | V _{TM} | I _{TM} =100mA | - | 0.9 | 1.3 | V | |
| | Holding Current | I _H | R _{GK} =27kΩ | - | 0.2 | - | mA | |
| | Off-State dv/dt | dv/dt | V _{AK} =280V, R _{GK} =27kΩ | 5 | 10 | - | V/μs | |
| Capacitance | C _j | V=0, f=1MHz Anode to Gate Gate to Cathode | - | 20 | - | pF | | |
| | | | - | 350 | - | pF | | |

COUPLED CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-----------------------------|-----------------|---|--------------------|------------------|------|------------------|
| Trigger LED Current | I _{FT} | V _{AK} =6V, R _{GK} =27kΩ | 1 | 4 | 7 | mA |
| Turn-on Time | t _{on} | I _F =30mA, V _{AA} =50V R _{GK} =27kΩ | - | 10 | - | μs |
| Coupled dv/dt | dv/dt | V _S =500V, R _{GK} =27kΩ | 500 | - | - | V/μs |
| Capacitance Input to Output | C _S | V _S =0, f=1MHz | - | 0.8 | - | pF |
| Isolation Resistance | R _S | V _S =500V | 5x10 ¹⁰ | 10 ¹⁴ | - | Ω |
| | | AC, 1 minute | 2500 | - | - | V _{rms} |
| | | DC, 1 minute | - | 5000 | - | V _{dc} |



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