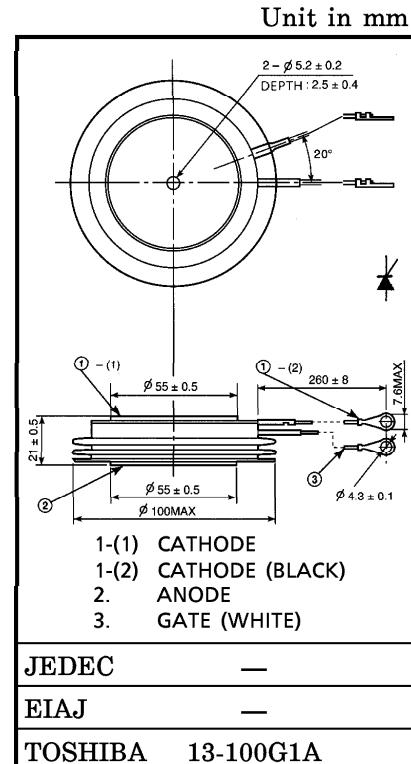# TOSHIBA

**SF1500EX26**

**TENTATIVE
(UNDER DEVELOPMENT)**

TOSHIBA ALLOY-FREE THYRISTOR

# S F 1 5 0 0 E X 2 6

## HIGH POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage : $V_{DRM}$
- Repetitive Peak Reverse Voltage : $V_{RRM}$ $\bigg\} = 2500V$

- Average On-State Current : $I_{T(AV)} = 1500A$

- Turn-Off Time : $t_q = 400\mu s$ (Max.)

- Critical Rate of Rise of On-State Current
  : $di/dt = 200A/\mu s$

- Critical Rate of Rise of Off-State Voltage
  : $dv/dt = 500V/\mu s$

- Weight : 630g

- Flat Package



2 − ⌀5.2 ± 0.2
DEPTH : 2.5 ± 0.4
20°

① − (1)  ⌀55 ± 0.5   ① − (2)  260 ± 8   7.6MAX
21 ± 0.5
② ⌀55 ± 0.5
⌀100MAX  ③ ⌀4.3 ± 0.1

1-(1)  CATHODE
1-(2)  CATHODE (BLACK)
2.     ANODE
3.     GATE (WHITE)

| JEDEC | — |
|-------|---|
| EIAJ | — |
| TOSHIBA | 13-100G1A |

## MAXIMUM RATINGS

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage | $V_{DRM}$ $V_{RRM}$ | 2500 | V |
| Non-Repetitive Peak Reverse Voltage (Non-Repetitive<5ms, $T_j$=0~125°C) | $V_{RSM}$ | 2750 | V |
| R.M.S On-State Current | $I_{T(RMS)}$ | 2355 | A |
| Average On-State Current | $I_{T(AV)}$ | 1500 | A |
| Peak One Cycle Surge On-State Current (Non-Repetitive) | $I_{TSM}$ | 30000 (50Hz) 33000 (60Hz) | A |
| $I^2t$ Limit Value | $I^2t$ | $3125 \times 10^3$ | $A^2s$ |
| Critical Rate of Rise of On-State Current (Note) | di / dt | 200 | A / $\mu$s |
| Peak Gate Power Dissipation | $P_{GM}$ | 30 | W |
| Average Gate Power Dissipation | $P_{G(AV)}$ | 4 | W |
| Peak Forward Gate Current | $I_{GM}$ | 6 | A |
| Peak Forward Gate Voltage | $V_{FGM}$ | 20 | V |
| Peak Reverse Gate Voltage | $V_{RGM}$ | 5 | V |
| Junction Temperature | $T_j$ | −40~125 | °C |
| Storage Temperature Range | $T_{stg}$ | −40~125 | °C |
| Mounting Force | — | 19.6±2.0 | kN |

Note : $V_D$=1 / 2 Rated, $T_j$=120°C, Gate Supply ($V_G$=15V, $R_G$=8$\Omega$, $t_r$≦1$\mu$s)

ELECTRICAL CHARACTERISTICS

| CHARACTERISTIC | SYMBOL | TEST CONDITION | | MIN. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Repetitive Peak Off-State Current and Repetitive Peak Reverse Current | $I_{DRM}$ $I_{RRM}$ | $V_{DRM} = V_{RRM} = $ Rated $T_j = 125°C$ | | — | 120 | mA |
| Peak On-State Voltage | $V_{TM}$ | $I_{TM} = 2500A$, $T_j = 25°C$ | | — | 1.75 | V |
| Gate Trigger Voltage | $V_{GT}$ | $V_D = 6V$, $R_L = 6\Omega$ | $T_j = -40°C$ | — | 4.5 | V |
| | | | $T_j = 25°C$ | — | 3.5 | |
| Gate Trigger Current | $I_{GT}$ | | $T_j = -40°C$ | — | 600 | mA |
| | | | $T_j = 25°C$ | — | 450 | |
| Gate Non-Trigger Voltage | $V_{GD}$ | $V_D = 1/2$ Rated, $T_j = 125°C$ | | 0.2 | — | V |
| Gate Non-Trigger Current | $I_{GD}$ | | | 5 | — | mA |
| Delay Time | $t_d$ | $V_D = 1/2$ Rated, $T_j = 25°C$ Gate Supply ($V_G = 15V$, $R_G = 8\Omega$, $t_r \leqq 1\mu s$) | | — | 5 | $\mu s$ |
| Gate Turn-On Time | $t_{gt}$ | | | — | 10 | $\mu s$ |
| Turn-Off Time | $t_q$ | $I_T = 1200A$, $V_R \geqq 200V$, $dv/dt = 25V/\mu s$, $T_j = 115°C$ $V_{DRM} = 2300V$ | | — | 450 | $\mu s$ |
| Holding Current | $I_H$ | $T_j = 25°C$, $R_L = 6\Omega$ | | — | 300 | mA |
| Critical Rate of Rise of Off-State Voltage | $dv/dt$ | $V_{DRM} = 2/3$ Rated, $T_j = 125°C$ Gate Open, Exponential Rise | | 500 | — | $V/\mu s$ |
| Thermal Resistance (Junction to Case) | $R_{th (j-f)}$ | DC | | — | 0.025 | $°C/W$ |