

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

## 2SD2498

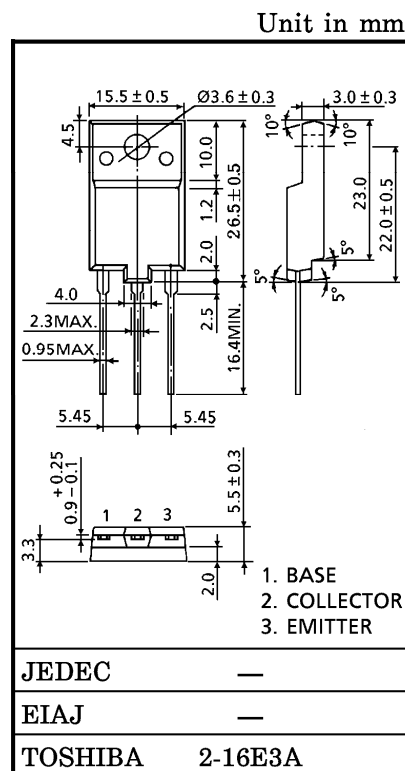
HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION  
DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage :  $V_{CBO} = 1500\text{ V}$
- Low Saturation Voltage :  $V_{CE(sat)} = 5\text{ V (Max.)}$
- High Speed :  $t_f = 0.4\text{ }\mu\text{s (Typ.)}$
- Collector Metal (Fin) is Fully Covered with Mold Resin.

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

| CHARACTERISTIC                                              | SYMBOL         | RATING  | UNIT             |
|-------------------------------------------------------------|----------------|---------|------------------|
| Collector-Base Voltage                                      | $V_{CBO}$      | 1500    | V                |
| Collector-Emitter Voltage                                   | $V_{CEO}$      | 600     | V                |
| Emitter-Base Voltage                                        | $V_{EBO}$      | 5       | V                |
| Collector Current                                           | DC $I_C$       | 6       | A                |
|                                                             | Pulse $I_{CP}$ | 12      |                  |
| Base Current                                                | $I_B$          | 3       | A                |
| Collector Power Dissipation<br>( $T_c = 25^\circ\text{C}$ ) | $P_C$          | 50      | W                |
| Junction Temperature                                        | $T_j$          | 150     | $^\circ\text{C}$ |
| Storage Temperature Range                                   | $T_{stg}$      | -55~150 | $^\circ\text{C}$ |



Weight : 5.5 g (Typ.)

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

| CHARACTERISTIC                       | SYMBOL                 | TEST CONDITION                                                                    | MIN. | TYP. | MAX. | UNIT          |
|--------------------------------------|------------------------|-----------------------------------------------------------------------------------|------|------|------|---------------|
| Collector Cut-off Current            | $I_{CBO}$              | $V_{CB} = 1500\text{ V}, I_E = 0$                                                 | —    | —    | 1    | mA            |
| Emitter Cut-off Current              | $I_{EBO}$              | $V_{EB} = 5\text{ V}, I_C = 0$                                                    | —    | —    | 10   | $\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$          | $I_C = 10\text{ mA}, I_B = 0$                                                     | 600  | —    | —    | V             |
| DC Current Gain                      | $h_{FE}(1)$            | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$                                           | 10   | —    | 30   | —             |
|                                      | $h_{FE}(2)$            | $V_{CE} = 5\text{ V}, I_C = 4\text{ A}$                                           | 5    | —    | 9    |               |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$          | $I_C = 4\text{ A}, I_B = 0.8\text{ A}$                                            | —    | —    | 5    | V             |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$          | $I_C = 4\text{ A}, I_B = 0.8\text{ A}$                                            | —    | 0.9  | 1.2  | V             |
| Transition Frequency                 | $f_T$                  | $V_{CE} = 10\text{ V}, I_E = 0.1\text{ A}$                                        | —    | 2    | —    | MHz           |
| Collector Output Capacitance         | $C_{ob}$               | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$                                 | —    | 95   | —    | pF            |
| Switching Time (Fig.1)               | Storage Time $t_{stg}$ | $I_{CP} = 4\text{ A}, I_{B1}(\text{end}) = 0.8\text{ A}$<br>$f_H = 64\text{ kHz}$ | —    | 7    | 10   | $\mu\text{s}$ |
|                                      | Fall Time $t_f$        |                                                                                   | —    | 0.4  | 0.7  |               |

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Fig.1 SWITCHING TIME TEST CIRCUIT

