

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07966 D 7-33-13

SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SD1428

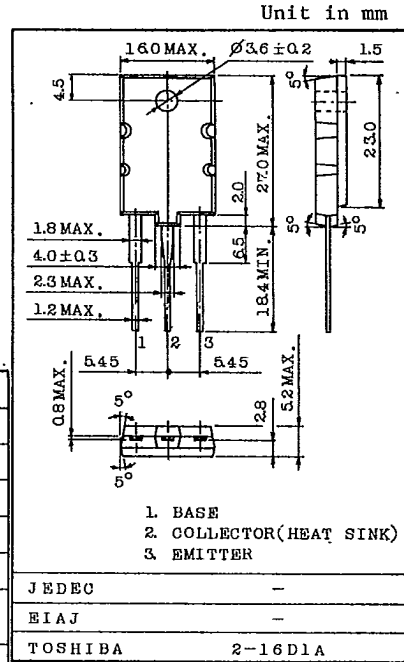
COLOR TV HORIZONTAL OUTPUT APPLICATIONS.

FEATURES:

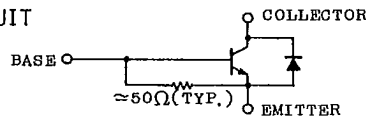
- . High Voltage : $V_{CBO}=1500V$
- . Low Saturation Voltage : $V_{CE(sat)}=5V(\text{Max.}) (I_C=5A, I_B=1A)$
- . High Speed : $t_f=1.0\mu s(\text{Max.})$
- . Built-in Damper Type
- . Glass Passivated Collector-Base Junction

MAXIMUM RATINGS ($T_c=25^\circ C$)

| 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 | I_C | 6 | A |
| Emitter Current | I_E | -6 | A |
| Collector Power Dissipation ($T_c=25^\circ C$) | P_C | 80 | W |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -55 ~ 150 | $^\circ C$ |



EQUIVALENT CIRCUIT



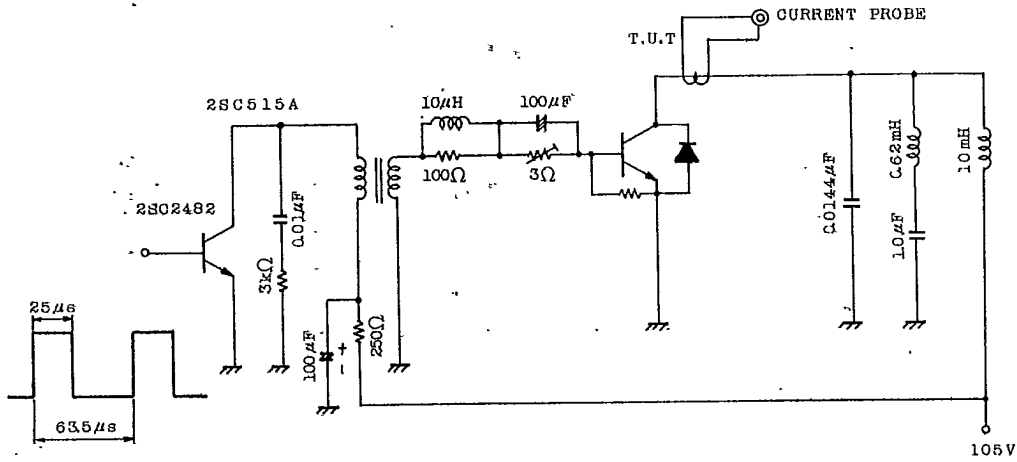
ELECTRICAL CHARACTERISTICS ($T_c=25^\circ C$)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---------------|------------------------------------|------|------|------|---------|
| Collector Cut-off Current | I_{CBO} | $V_{CB}=500V, I_E=0$ | - | - | 10 | μA |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=200mA, I_C=0$ | 5 | - | - | V |
| DC Current Gain | h_{FE} | $V_{CE}=5V, I_C=1A$ | 8 | 12 | - | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=5A, I_B=1A$ | - | 3 | 5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=5A, I_B=1A$ | - | - | 1.5 | V |
| Forward Voltage (Damper Diode) | $-V_F$ | $I_F=6A$ | - | 1.6 | 2.0 | V |
| Transition Frequency | f_T | $V_{CE}=10V, I_C=0.1A$ | - | 3 | - | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=1MHz$ | - | 165 | - | pF |
| Fall Time (Fig.) | t_f | $I_{CP}=5A, I_{B1}(\text{end})=1A$ | - | 0.5 | 1.0 | μs |

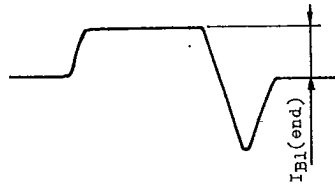
TOSHIBA CORPORATION

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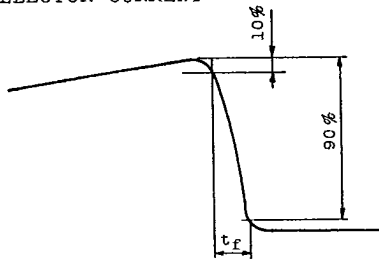
Fig. t_f TEST CIRCUIT



BASE CURRENT

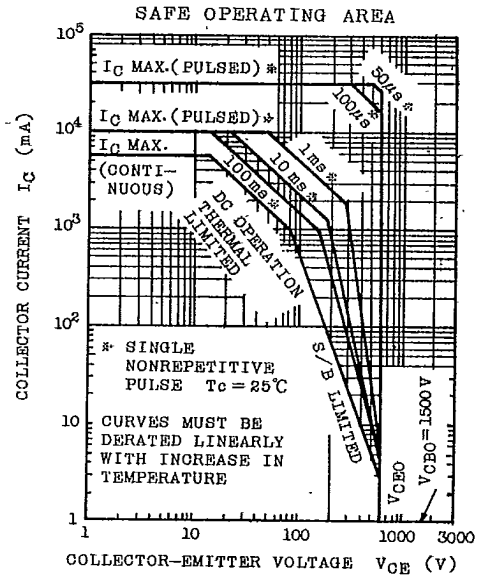
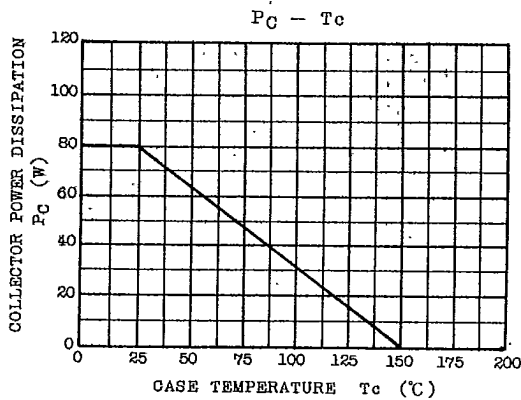
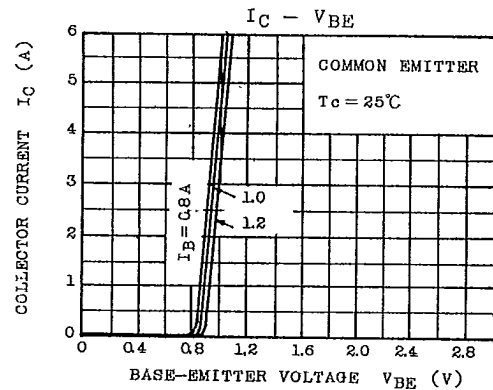
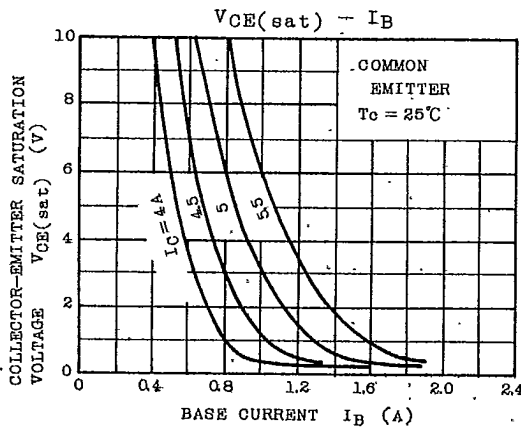
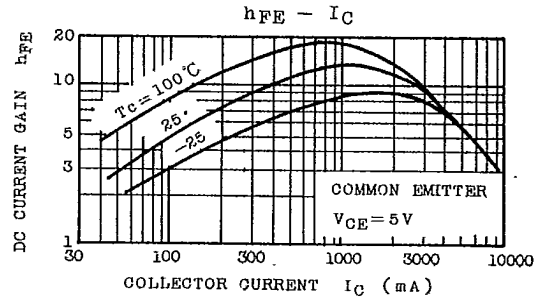
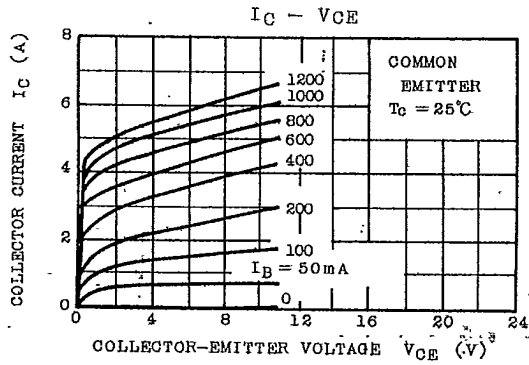


COLLECTOR CURRENT



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