

**TT2190LS**

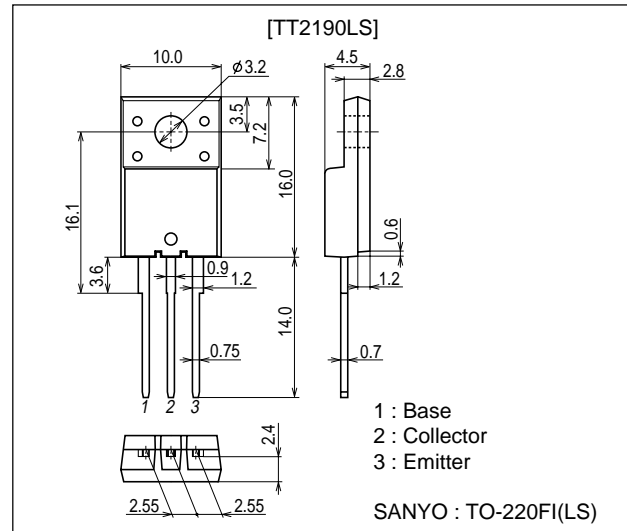
## Color TV Horizontal Deflection Output Applications

### Features

- High speed.
- High breakdown voltage ( $V_{CB0}=1500V$ ).
- High reliability (Adoption of HVP process).
- Adoption of MBIT process.
- On-chip damper diode.

### Package Dimensions

unit : mm  
2079D



### Specifications

#### Absolute Maximum Ratings at $T_a=25^\circ C$

| Parameter                    | Symbol    | Conditions       | Ratings     | Unit       |
|------------------------------|-----------|------------------|-------------|------------|
| Collector-to-Base Voltage    | $V_{CB0}$ |                  | 1500        | V          |
| Collector-to-Emitter Voltage | $V_{CEO}$ |                  | 800         | V          |
| Emitter-to-Base Voltage      | $V_{EBO}$ |                  | 6           | V          |
| Collector Current            | $I_C$     |                  | 8           | A          |
| Collector Current (Pulse)    | $I_{CP}$  |                  | 20          | A          |
| Collector Dissipation        | $P_C$     |                  | 2.0         | W          |
|                              |           | $T_c=25^\circ C$ | 35          | W          |
| Junction Temperature         | $T_j$     |                  | 150         | $^\circ C$ |
| Storage Temperature          | $T_{stg}$ |                  | -55 to +150 | $^\circ C$ |

#### Electrical Characteristics at $T_a=25^\circ C$

| Parameter                 | Symbol         | Conditions               | Ratings |     |     | Unit    |
|---------------------------|----------------|--------------------------|---------|-----|-----|---------|
|                           |                |                          | min     | typ | max |         |
| Collector Cutoff Current  | $I_{CBO}$      | $V_{CB}=800V, I_E=0$     |         |     | 10  | $\mu A$ |
| Collector Cutoff Current  | $I_{CES}$      | $V_{CE}=1500V, R_{BE}=0$ |         |     | 1.0 | mA      |
| Collector Sustain Voltage | $V_{CEO(sus)}$ | $I_C=100mA, I_B=0$       | 800     |     |     | V       |
| Emitter Cutoff Current    | $I_{EBO}$      | $V_{EB}=4V, I_C=0$       | 40      |     | 130 | mA      |

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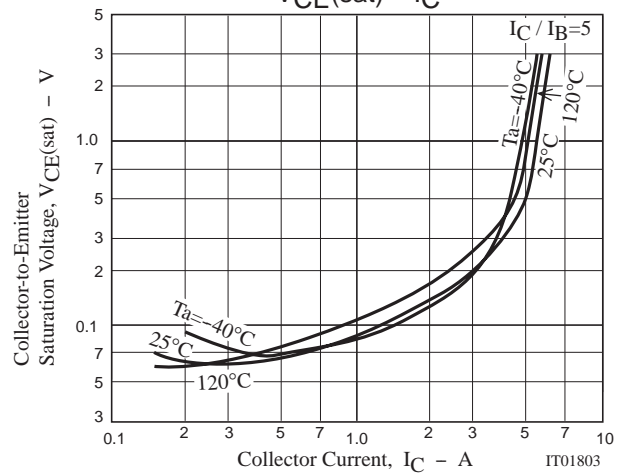
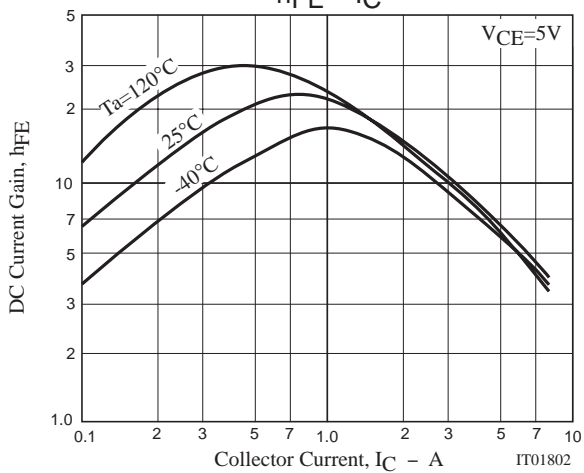
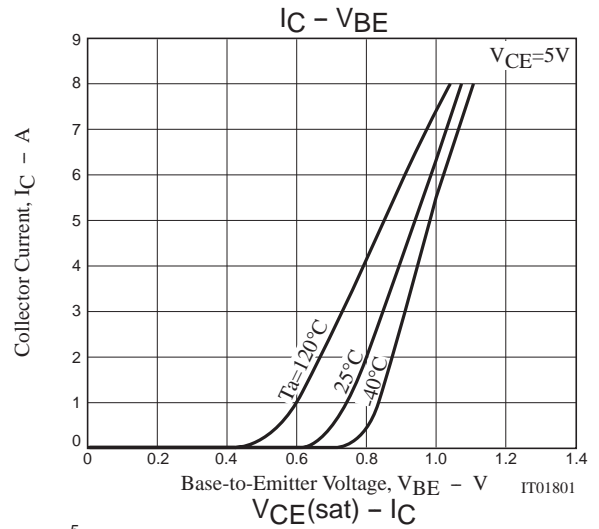
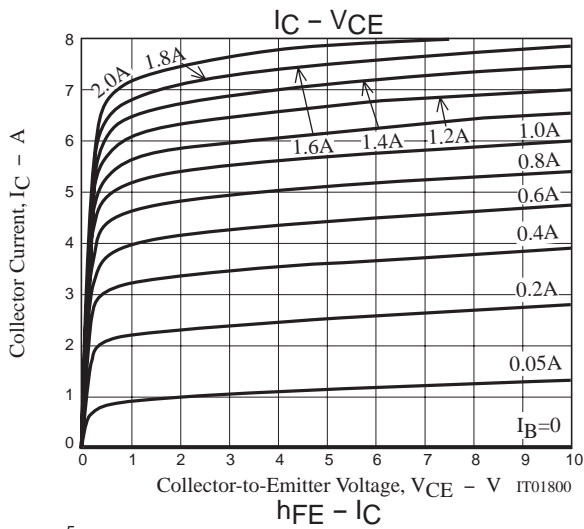
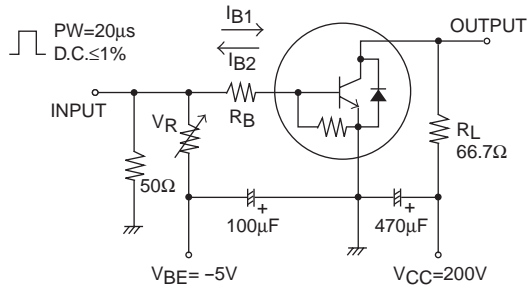
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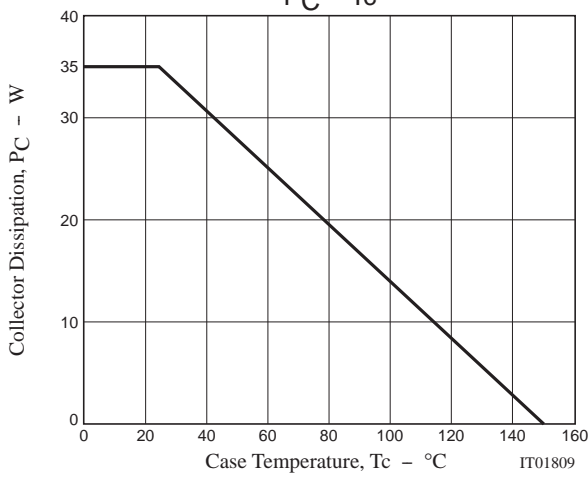
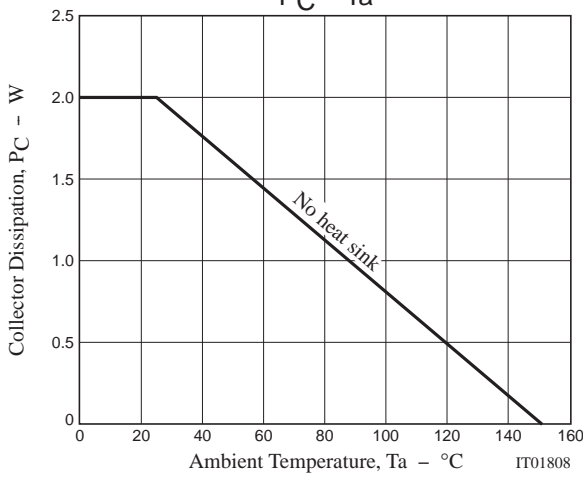
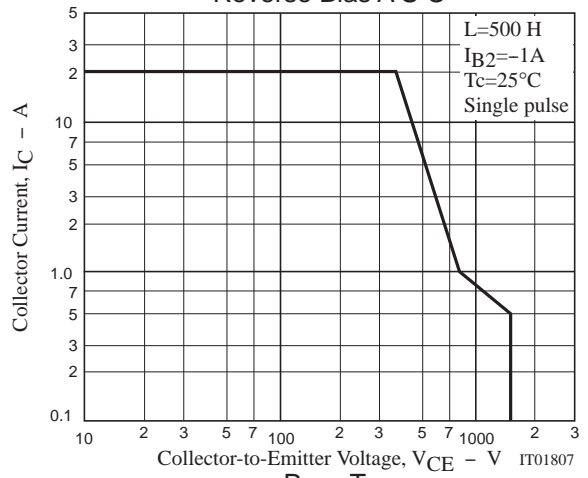
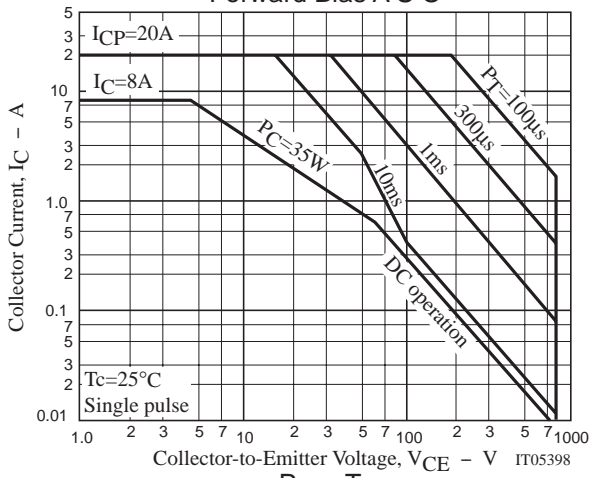
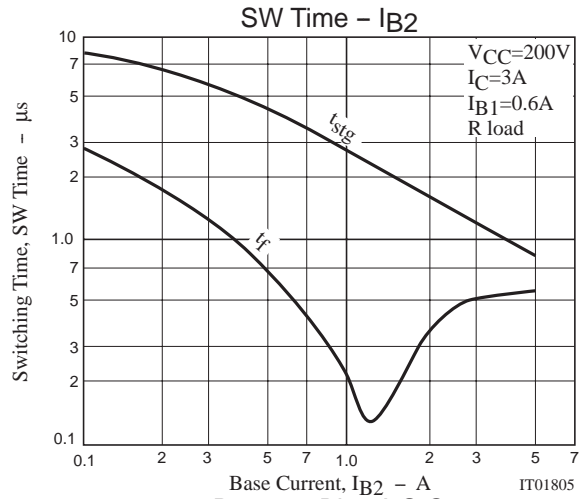
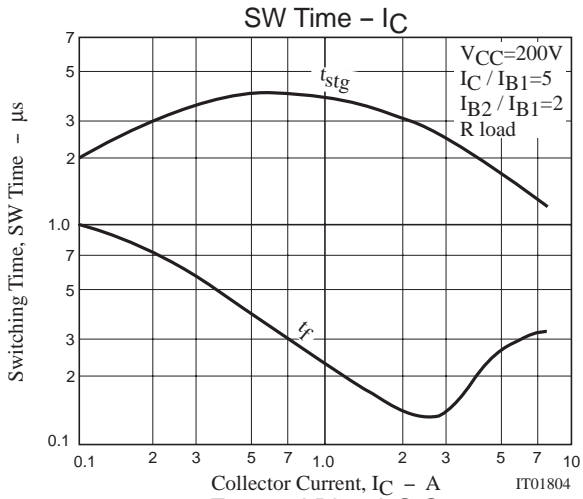
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| Parameter                               | Symbol        | Conditions                          | Ratings |     |     | Unit    |
|---|---------------|-------------------------------------|---------|-----|-----|---------|
|   |               |                                     | min     | typ | max |         |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=4.5A, I_B=0.9A$                |         |     | 3   | V       |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=4.5A, I_B=0.9A$                |         |     | 1.5 | V       |
| DC Current Gain                         | $h_{FE1}$     | $V_{CE}=5V, I_C=1A$                 | 10      |     |     |         |
|   | $h_{FE2}$     | $V_{CE}=5V, I_C=5A$                 | 5       |     | 8   |         |
| Diode Forward Voltage                   | $V_F$         | $I_{EC}=7A$                         |         |     | 2   | V       |
| Fall Time                               | $t_f$         | $I_C=3A, I_{B1}=0.6A, I_{B2}=-1.2A$ |         |     | 0.3 | $\mu s$ |

## Switching Time Test Circuit



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