

**TS7990**

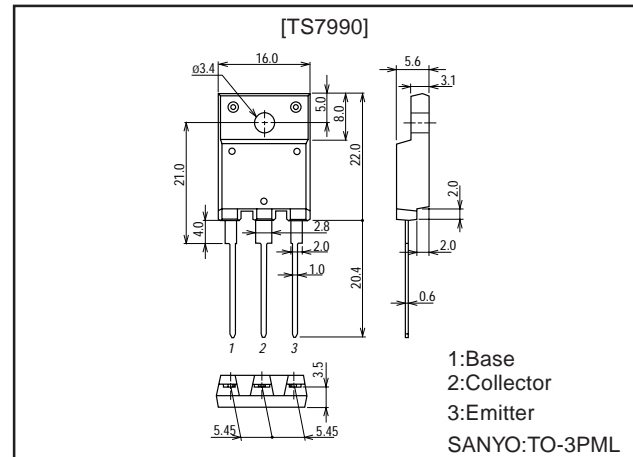
## Ultrahigh-Definition CRT Display Horizontal Deflection Output Applications

### Features

- High speed.
- High breakdown voltage ( $V_{CBO}=1600V$ ).
- High reliability (Adoption of HVP process).
- Adoption of MBIT process.

### Package Dimensions

unit:mm

**2039D-TO3PML**

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		1600	V
Collector-to-Emitter Voltage	$V_{CEO}$		800	V
Emitter-to-Base Voltage	$V_{EBO}$		6	V
Collector Current	$I_C$		15	A
Collector Current (Pulse)	$I_{CP}$		35	A
Collector Dissipation	$P_C$		3.0	W
		$T_c=25^\circ C$	75	W
Junction Temperature	$T_j$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

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

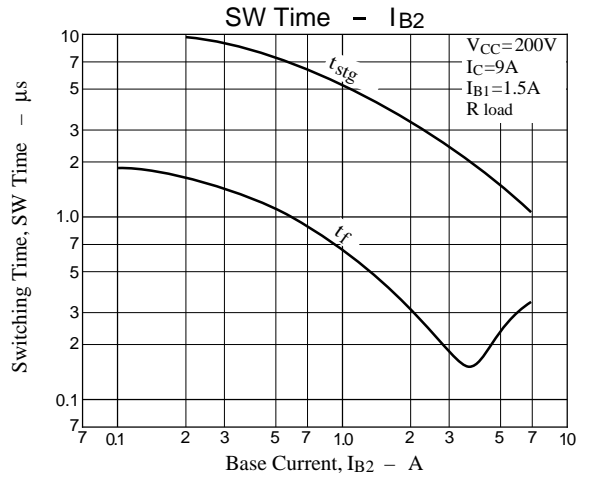
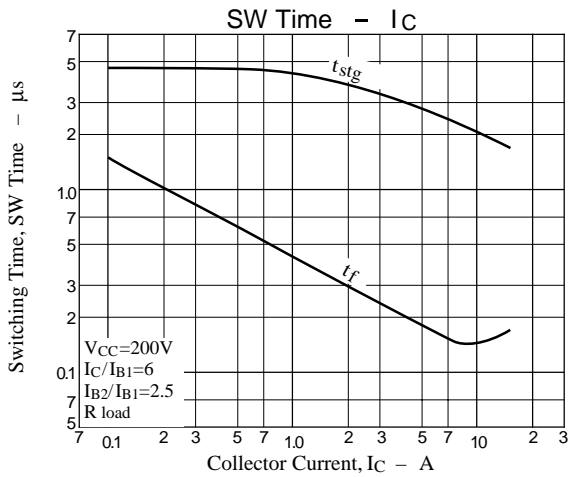
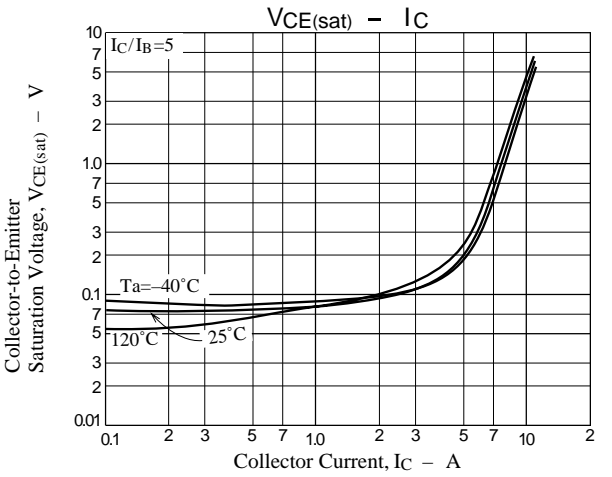
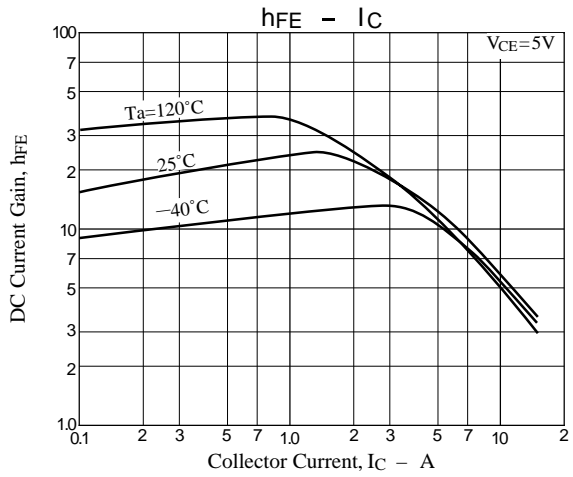
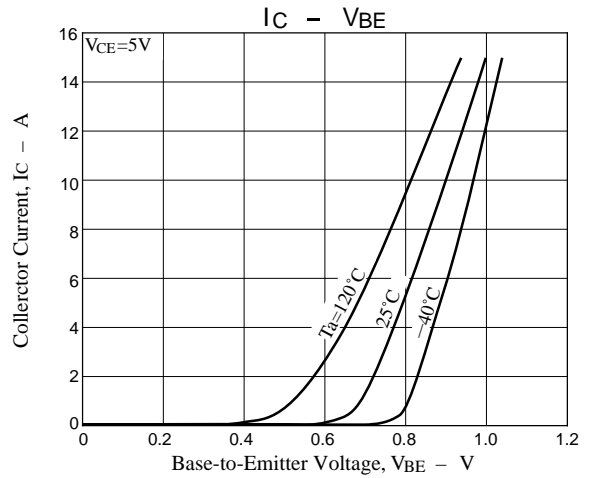
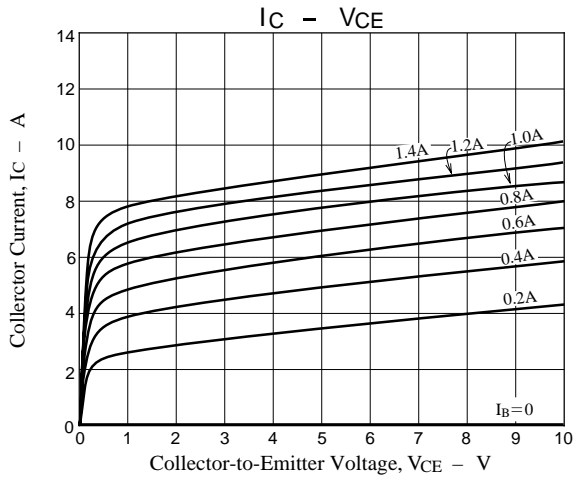
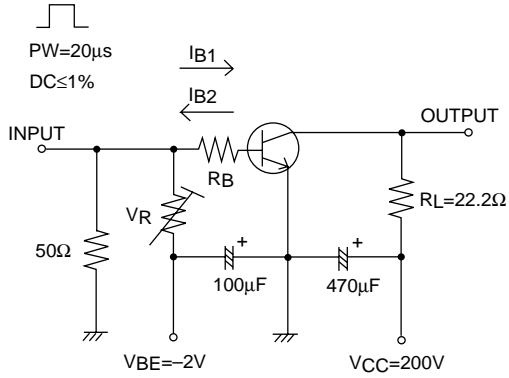
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CES}$	$V_{CE}=1600V, R_{BE}=0$			1.0	mA
Collector Sustain Voltage	$V_{CEO(SUS)}$	$I_C=100mA, I_B=0$	800			V
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			1.0	mA
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=800V, I_E=0$			10	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5V, I_C=1.0A$	15		30	
	$h_{FE(2)}$	$V_{CE}=5V, I_C=11A$	4		7	
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=11A, I_B=2.75A$			5	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=11A, I_B=2.75A$			1.5	V
Storage Time	$t_{stg}$	$I_C=9A, I_{B1}=1.5A, I_{B2}=-3.75A$			3.0	$\mu s$
Fall Time	$t_f$	$I_C=9A, I_{B1}=1.5A, I_{B2}=-3.75A$			0.2	$\mu s$

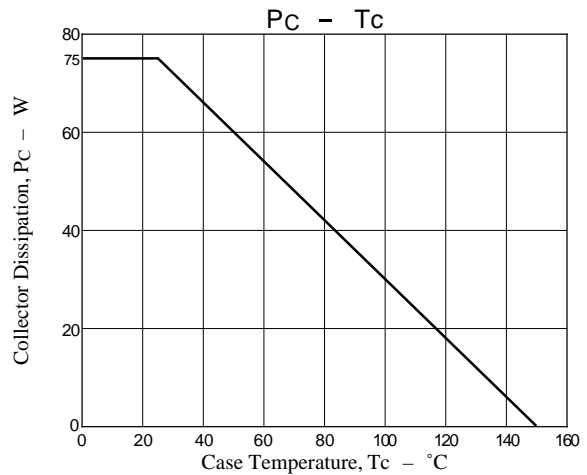
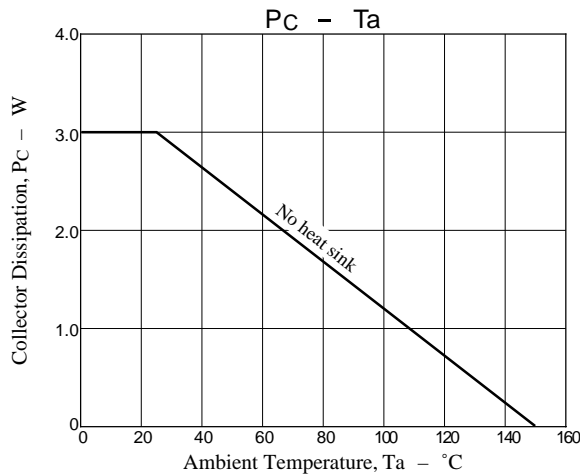
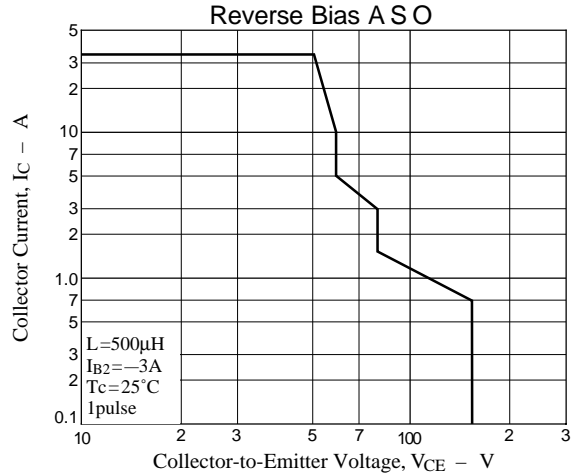
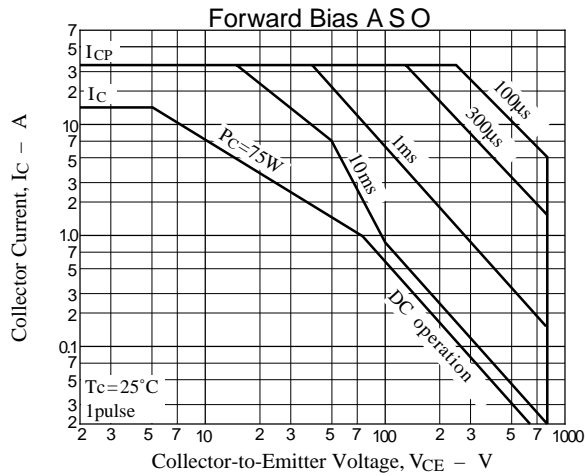
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Switching Time Test Circuit





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