



# HPA150R

## Ultrahigh-Definition CRT Display Horizontal Deflection Output Applications

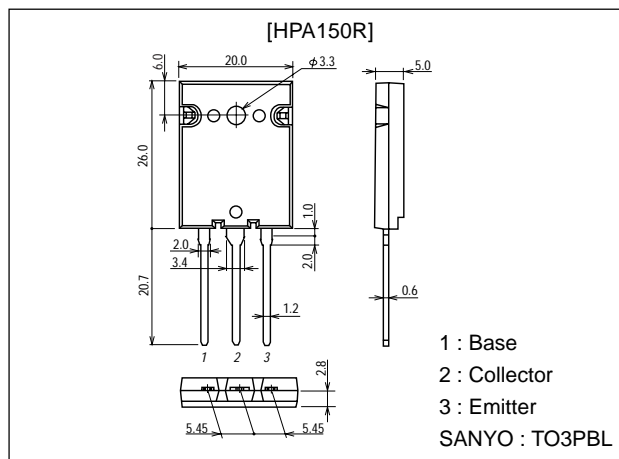
### Features

- High speed ( $t_f$  typ=100ns).
- High breakdown voltage ( $V_{CBO}$ =1500V).
- High-speed damper diode placed in one package ( $t_{fr}$ =0.2 $\mu$ s max).
- Adoption of MBIT process.
- High reliability (adoption of HVP process).

### Package Dimensions

unit:mm

2048B



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		1500	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
Diode Forward Current	$I_O$		10	A
Diode Forward Current (Pulse)	$I_{OP}$	$PW \leq 100\mu\text{s}$ , $\text{duty} \leq 50\%$	15	A
Total Power Dissipation	$P_T$	$T_c = 25^\circ\text{C}$	180	W
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=1500\text{V}$ , $I_E=0$			5	mA
Collector Sustain Voltage	$V_{CEO(sus)}$	$I_C=100\text{mA}$ , $I_B=0$	800			V
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}$ , $I_C=0$			1.0	mA
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{A}$ , $I_B=2.5\text{A}$			5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{A}$ , $I_B=2.5\text{A}$			1.5	V

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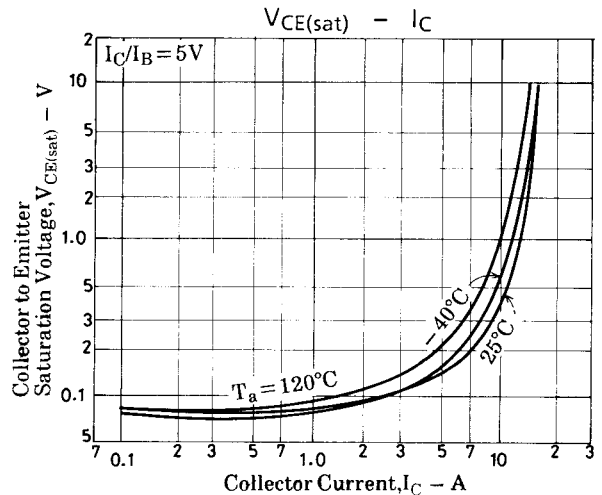
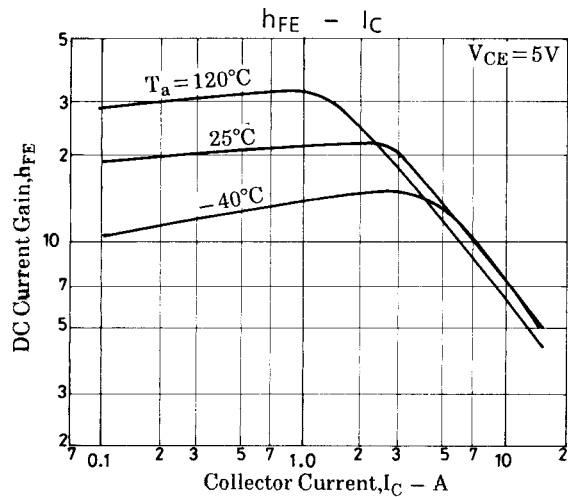
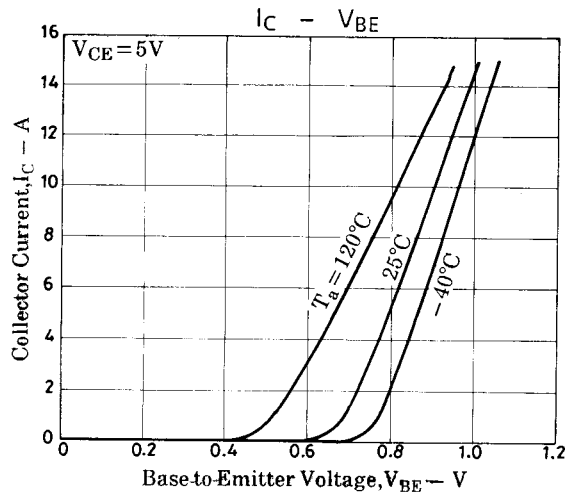
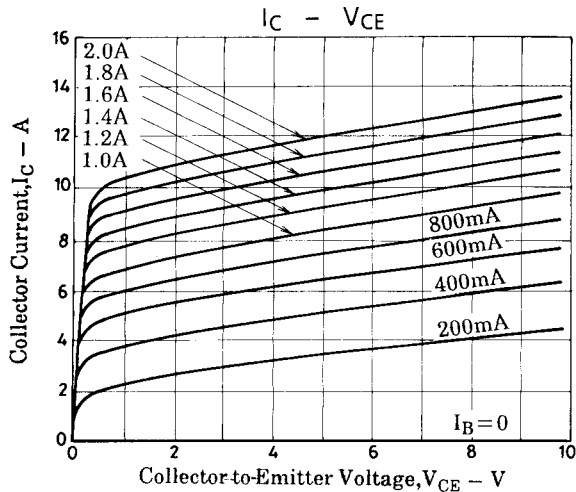
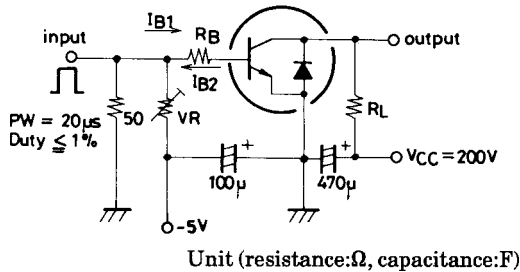
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5V, I_C=1.0A$	8			
	$h_{FE(2)}$	$V_{CE}=5V, I_C=10A$	4*		10*	
Storage Time	$t_{stg}$	$I_C=8A, I_{B1}=1.6A, I_{B2}=-3.2A$			3.0	$\mu s$
Fall Time	$t_f$	$I_C=8A, I_{B1}=1.6A, I_{B2}=-3.2A$		0.1	0.2	$\mu s$
Diode Forward Voltage	$V_F(1)$	$I_F=10A$			3	V
	$V_F(2)$	$I_F=15A$			5	V
Diode Reverse Recovery Time	$t_{rr}$	$I_F=-I_R=100mA$			1	$\mu s$
Diode Forward Recovery Time	$t_{fr}$	$I_F=100mA$		0.1	0.2	$\mu s$

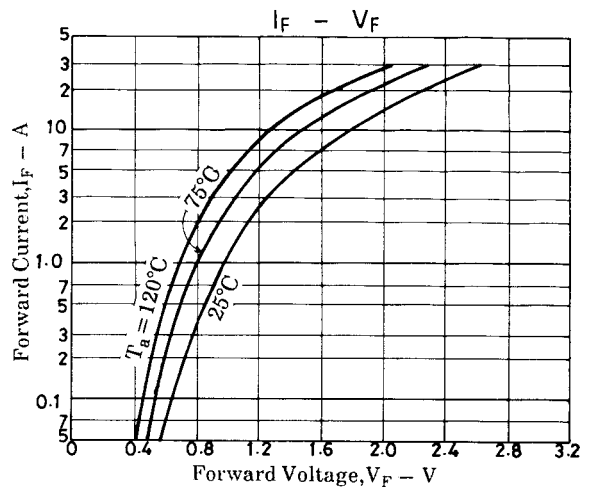
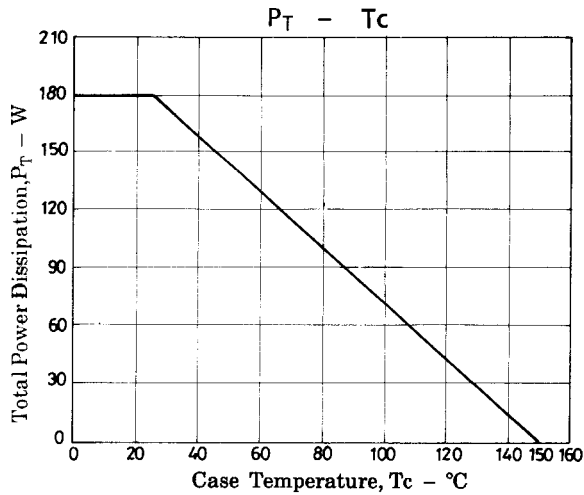
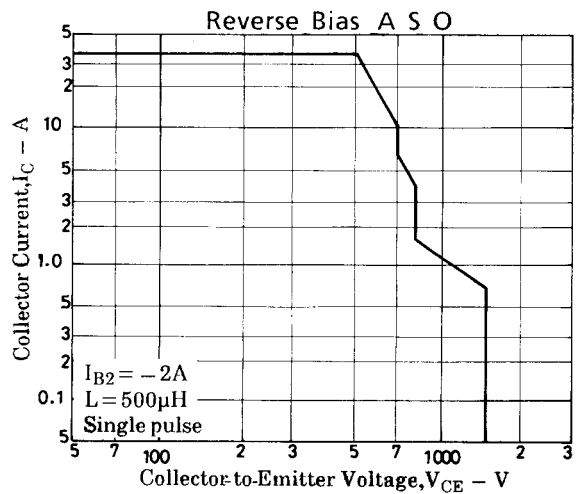
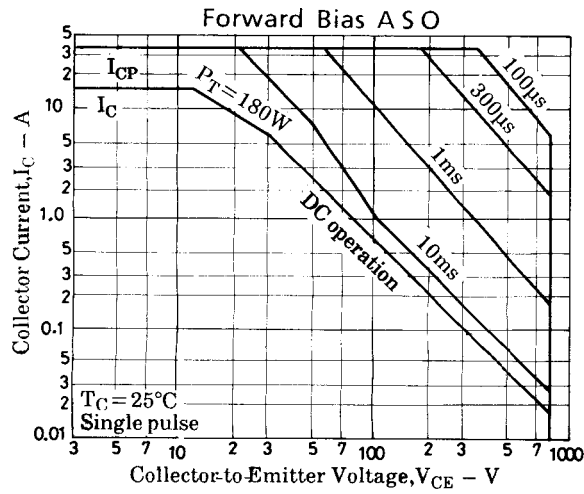
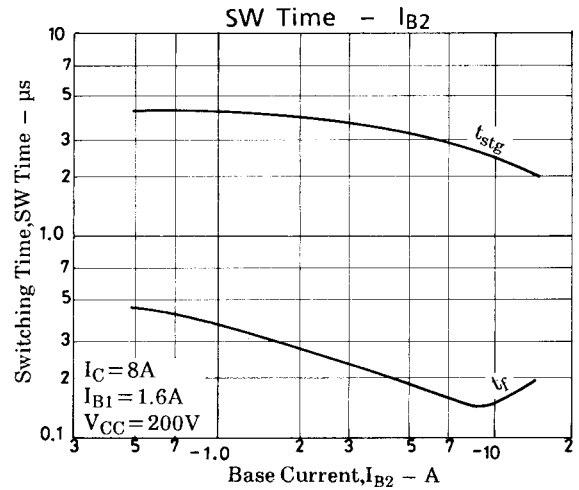
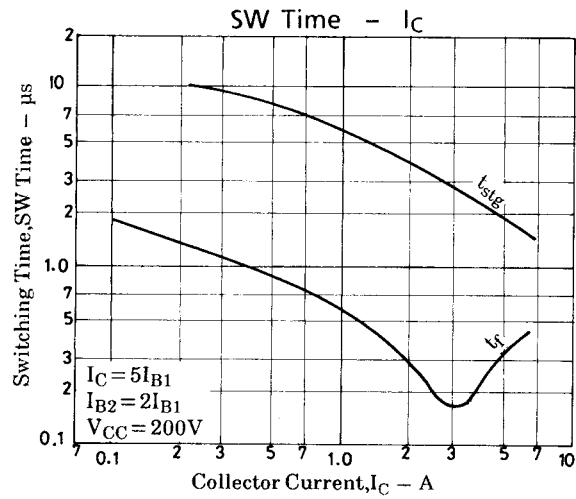
\* The HPA150R is classified by 10A  $h_{FE}$  as follows :

$h_{FE}$	4 to 6	5 to 8	7 to 10
Rank	2	3	4

## Switching Time Test Circuit



# HPA150R



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