



SANYO Semiconductors

DATA SHEET

2SC3998

NPN Triple Diffused Planar Silicon Transistor
**— Ultrahigh-Definition CRT Display
 Horizontal Deflection Output Applications**

Features

- High speed ($t_f=100\text{ns}$ typ).
- High breakdown voltage ($V_{CBO}=1500\text{V}$).
- High reliability (adoption of HVP process).
- Adoption of MBIT process.

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		25	A
Collector Current (Pulse)	I_{CP}		50	A
Collector Dissipation	P_C		3.5	W
		$T_c=25^\circ\text{C}$	250	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_{CES}	$V_{CE}=1500\text{V}$			1.0	mA
Collector-to-Emitter Sustain Voltage	$V_{CEO(sus)}$	$I_C=100\text{mA}$, $I_B=0\text{A}$	800			V
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0\text{A}$			1.0	mA
Collector Cutoff Current	I_{CBO}	$V_{CB}=800\text{V}$, $I_E=0\text{A}$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=5\text{V}$, $I_C=1.0\text{A}$	8		30	
	h_{FE2}	$V_{CE}=5\text{V}$, $I_C=20\text{A}$	4		8	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20\text{A}$, $I_B=5\text{A}$			5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=20\text{A}$, $I_B=5\text{A}$			1.5	V
Storage Time	t_{stg}	$I_C=12\text{A}$, $I_{B1}=2.4\text{A}$, $I_{B2}=-4.8\text{A}$			3.0	μs
Fall Time	t_f	$I_C=12\text{A}$, $I_{B1}=2.4\text{A}$, $I_{B2}=-4.8\text{A}$			0.2	μs

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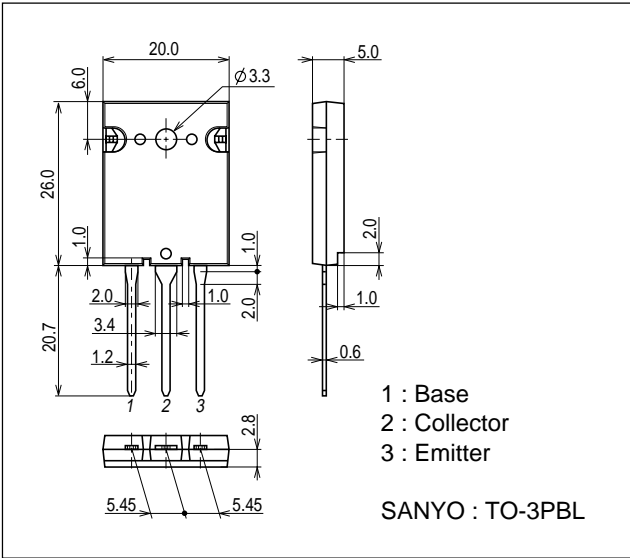
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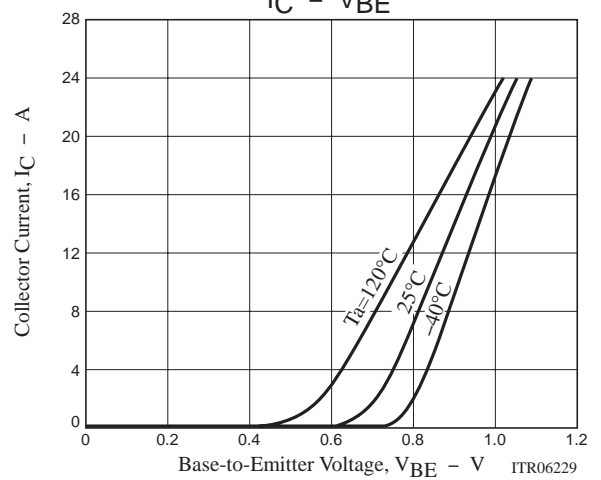
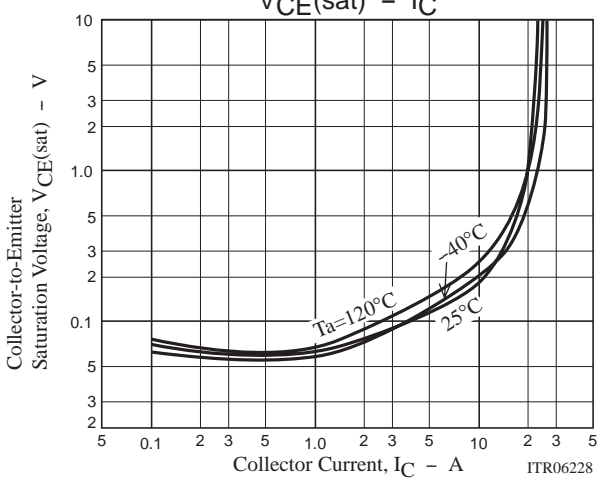
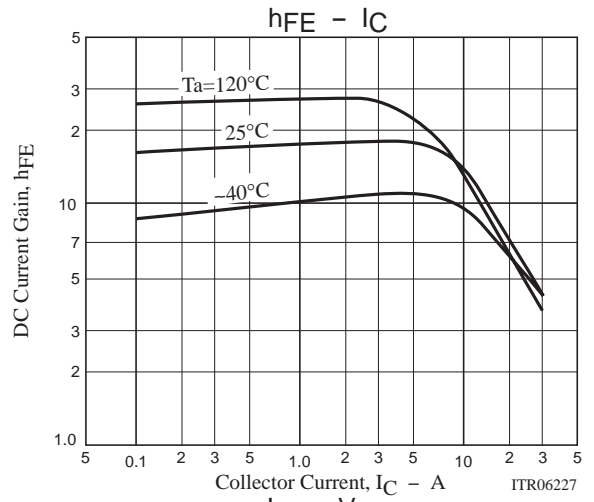
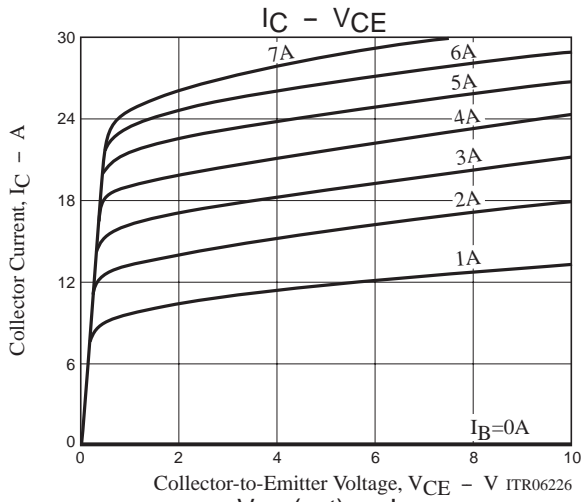
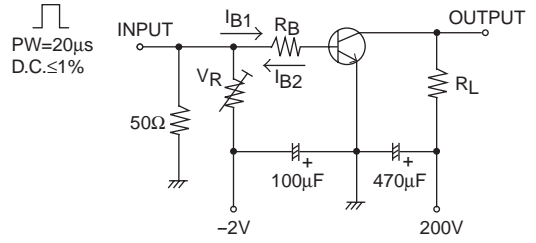
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Package Dimensions

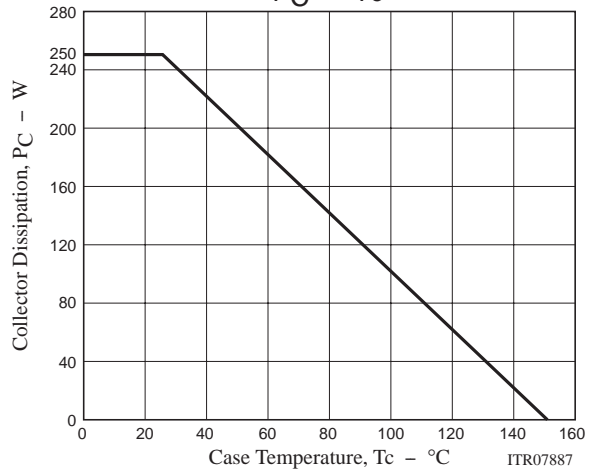
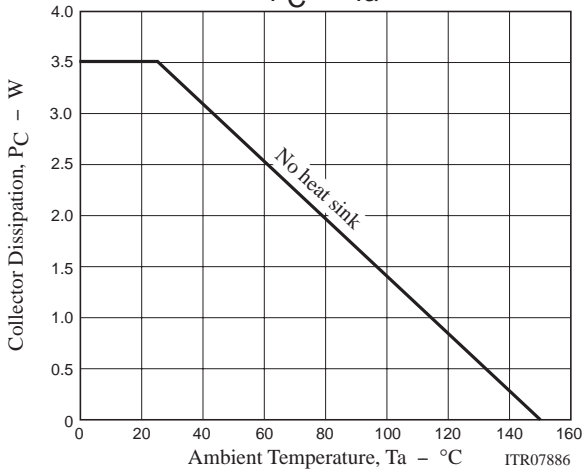
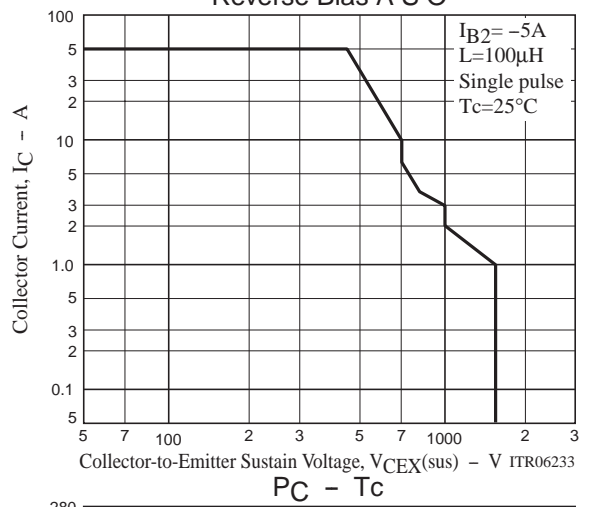
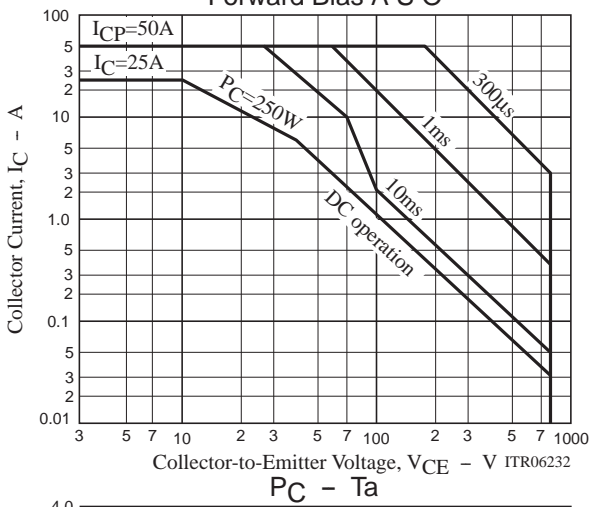
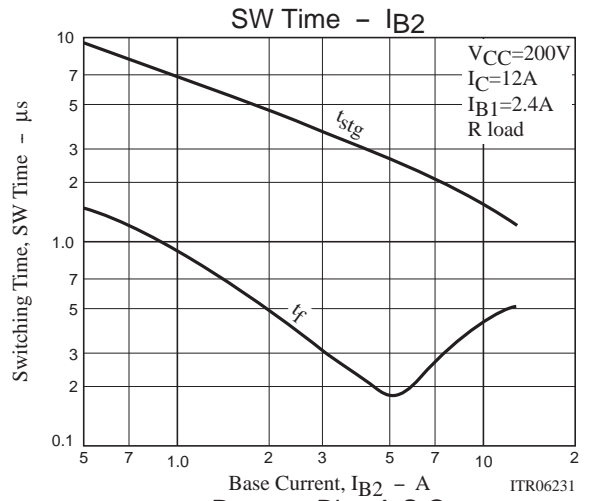
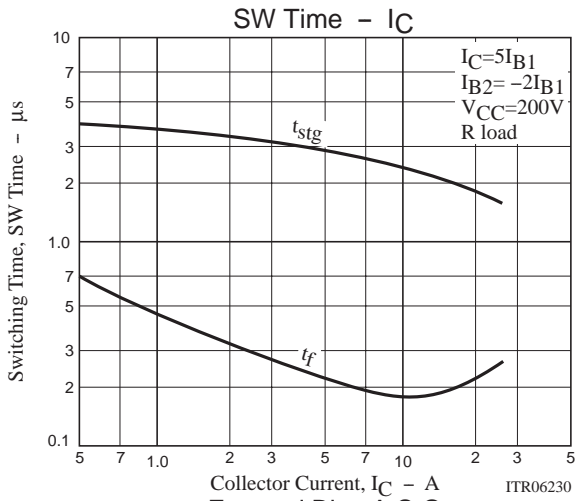
unit : mm (typ)
7502-001



Switching Time Test Circuit



2SC3998



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