



SANYO Semiconductors

## DATA SHEET

# 2SC3950

 — NPN Epitaxial Planar Silicon Transistor  
**High-Definition CRT Display  
 Video Output Applications**

## Applications

- High-definition CRT display video output, wide-band amplifier.

## Features

- High  $f_T$  :  $f_T=2.0\text{GHz}$ .
- Large current capacity :  $I_C=500\text{mA}$ .
- Micaless type : TO-126 plastic package.

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		30	V
Collector-to-Emitter Voltage	$V_{CEO}$		20	V
Emitter-to-Base Voltage	$V_{EBO}$		3	V
Collector Current	$I_C$		500	mA
Collector Current (Pulse)	$I_{CP}$		1000	mA
Collector Dissipation	$P_C$		1.3	W
		$T_c=25^\circ\text{C}$	5	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	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0\text{A}$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=2\text{V}, I_C=0\text{A}$			5.0	$\mu\text{A}$

Continued on next page.

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE1}$	$V_{CE}=5V, I_C=50mA$	40*		200*	
	$h_{FE2}$	$V_{CE}=5V, I_C=500mA$	20			
Gain-Bandwidth Product	$f_T$	$V_{CE}=5V, I_C=100mA$		2.0		GHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		6.0		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=10V, f=1MHz$		4.6		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=300mA, I_B=30mA$		0.3	0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=300mA, I_B=30mA$		0.9	1.2	V

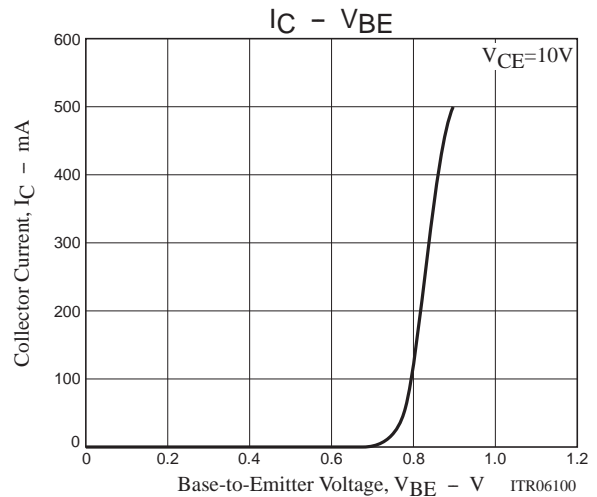
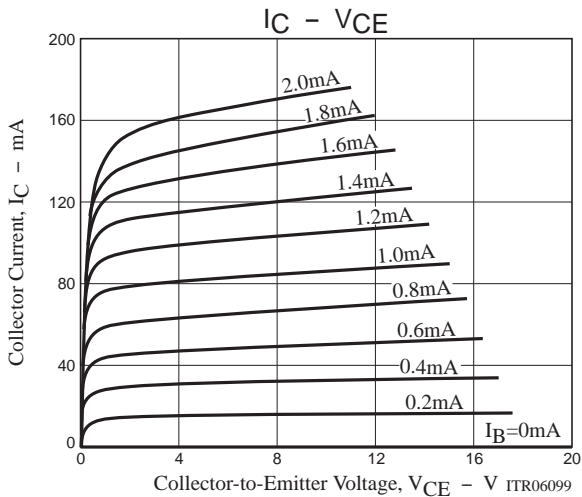
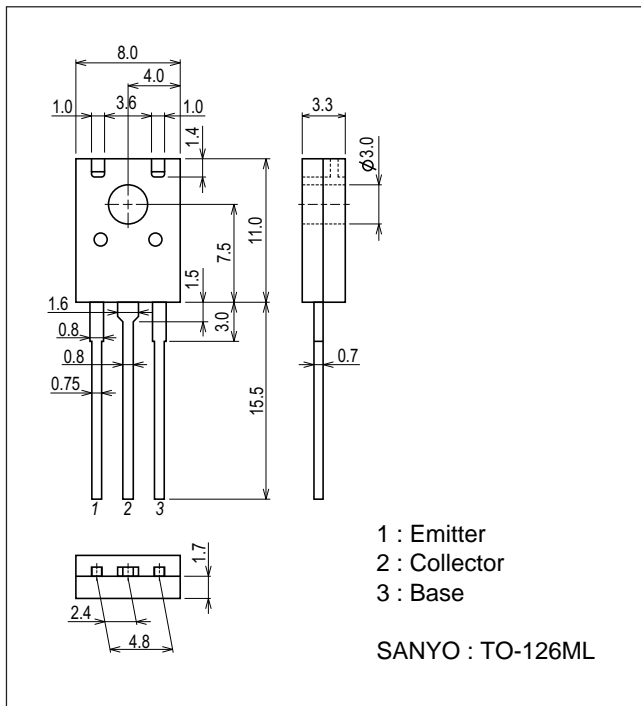
\* $h_{FE1}$  : The 2SC3950 is classified by 50mA  $h_{FE}$  as follows :

Rank	C	D	E
$h_{FE}$	40 to 80	60 to 120	100 to 200

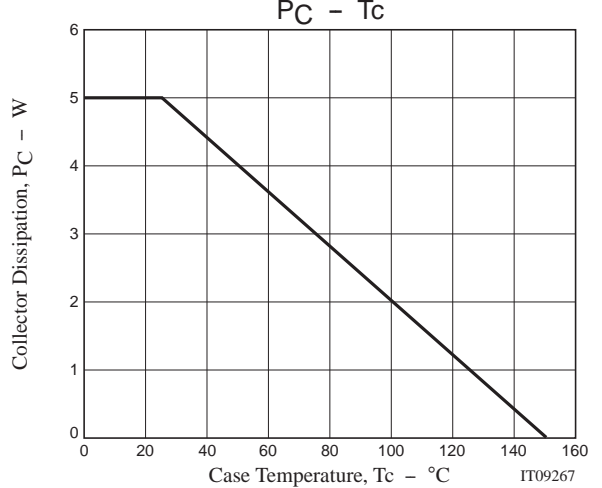
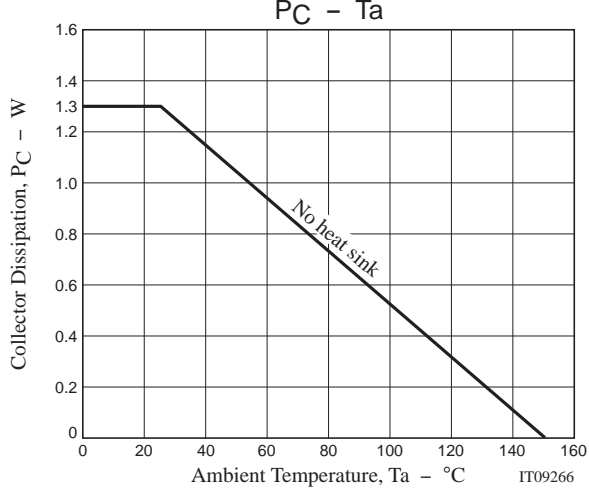
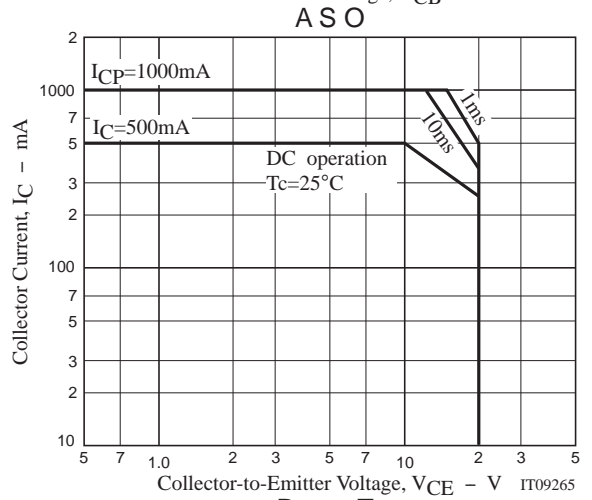
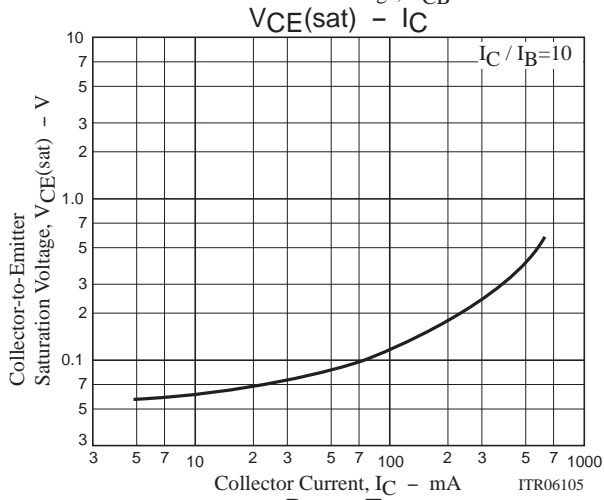
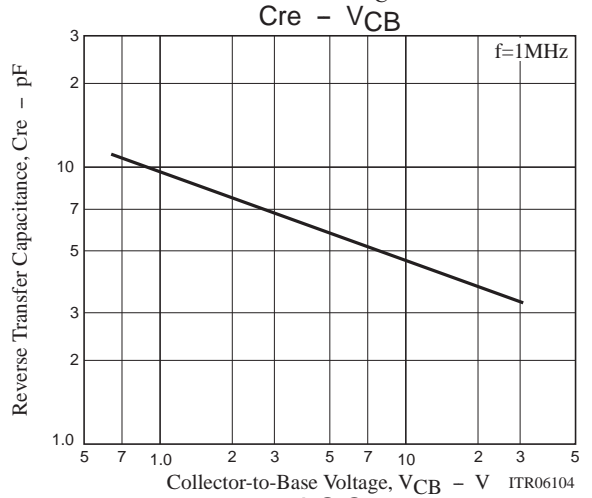
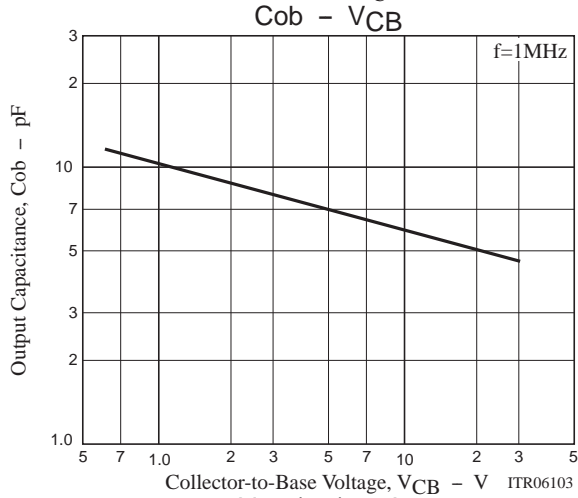
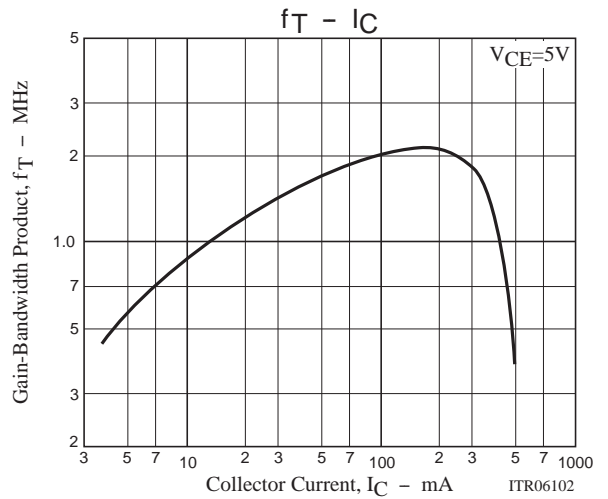
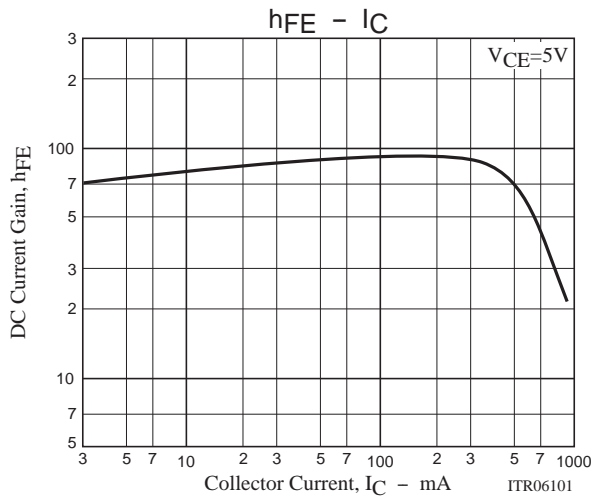
## Package Dimensions

unit : mm (typ)

7516A-002



# 2SC3950



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