Ordering number : EN2441C

SANYO Semiconductors
DATA SHEET

NPN Epitaxial Planar Silicon Transistor

2SC3950 — High-Definition CRT Display Video Output Applications

Applications

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

Features

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

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		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
		Tc=25°C	5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0A			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=2V, I_C=0A			5.0	μA

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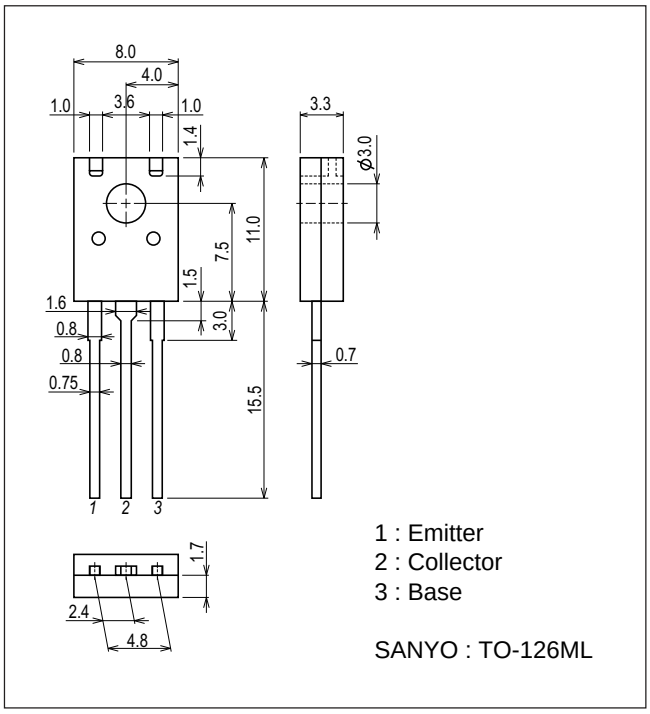
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=50mA	40*		200*	
	$h_{FE}2$	V_{CE}=5V, I_C=500mA	20			
Gain-Bandwidth Product	f_T	V_{CE}=5V, I_C=100mA		2.0		GHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		6.0		pF
Reverse Transfer Capacitance	Cre	V_{CB}=10V, 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

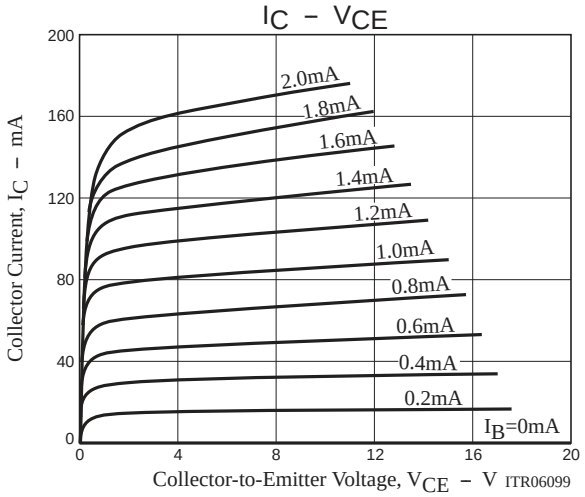
*$h_{FE}1$: The 2SC3950 is classified by 50mA h_{FE} as follows :

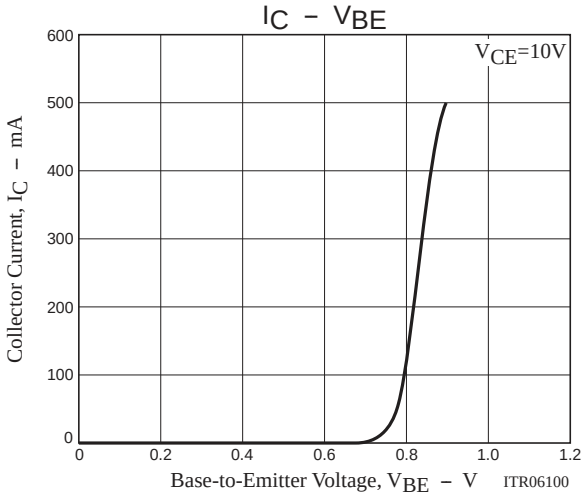
Rank	C	D	E
h_{FE}	40 to 80	60 to 120	100 to 200

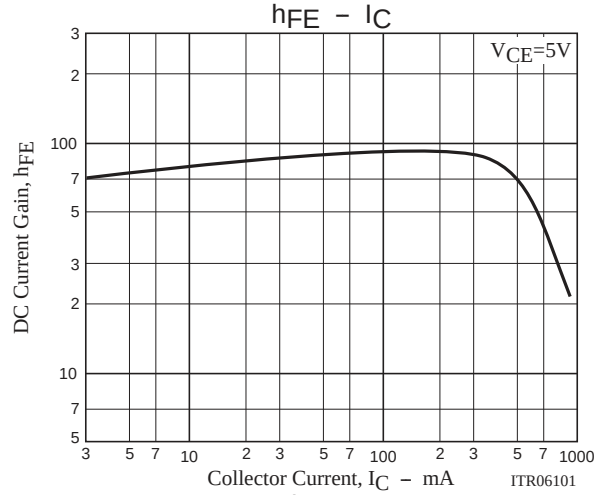
Package Dimensions

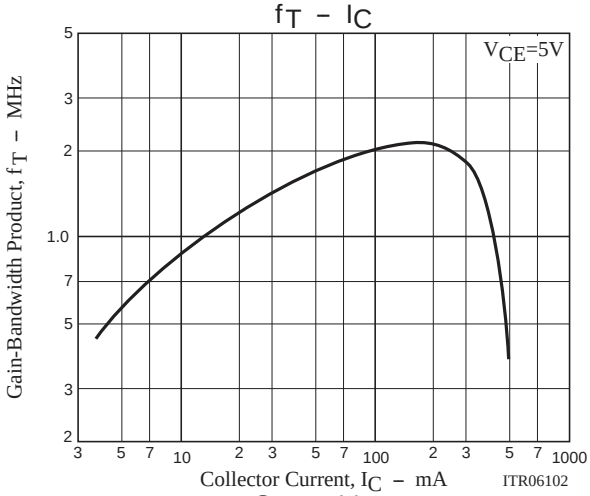
unit : mm (typ)
7516A-002

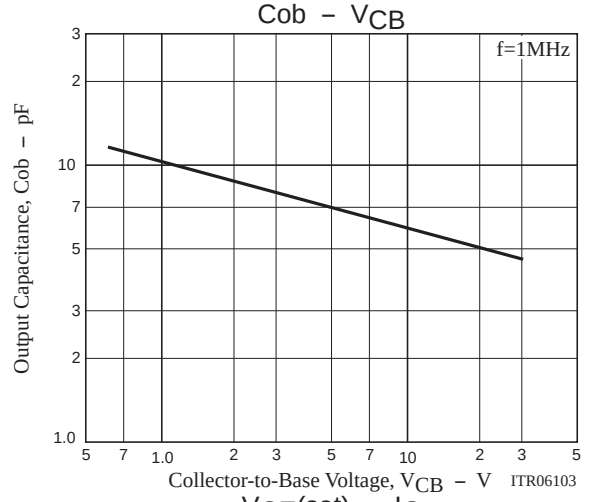


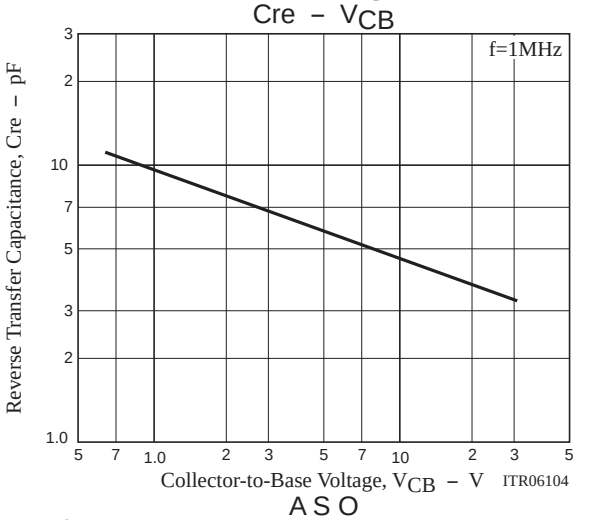


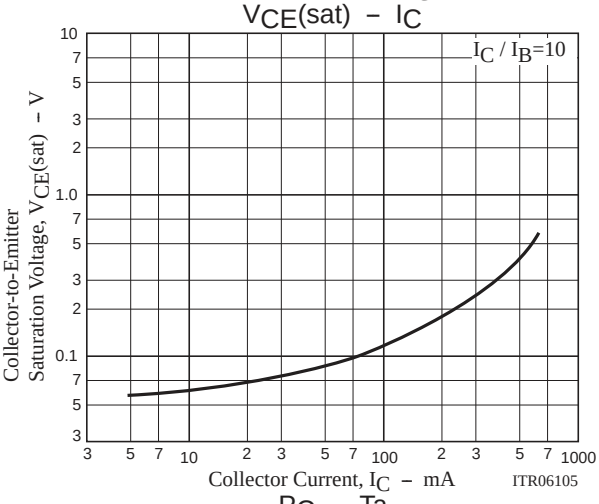


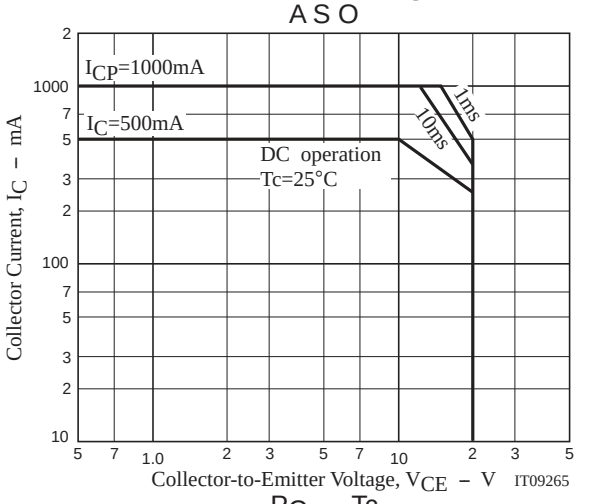

hFE – IC
VCE=5V
DC Current Gain, hFE
Collector Current, IC – mA
ITR06101

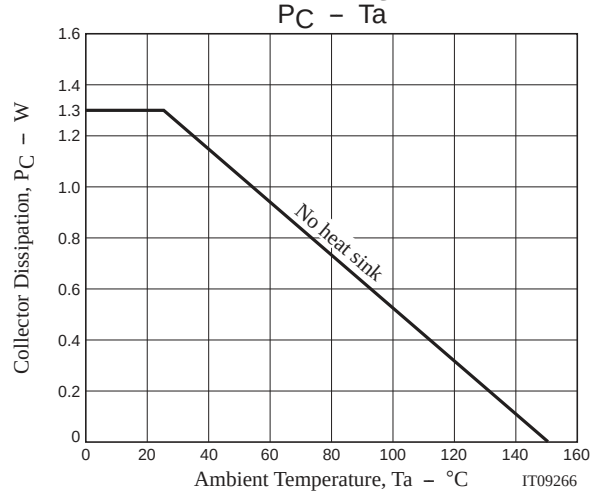

fT – IC
VCE=5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR06102

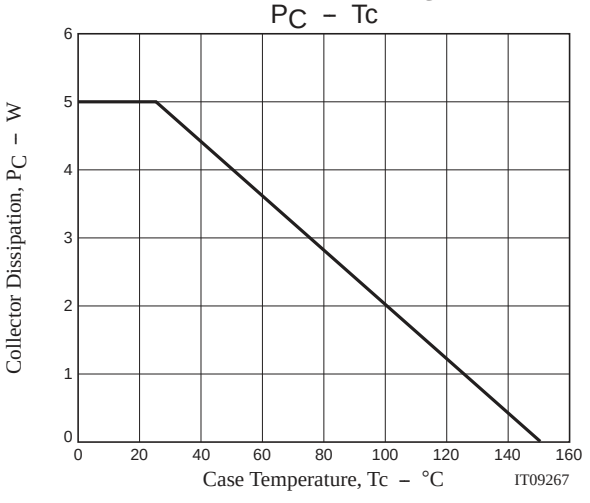

Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR06103


Cre – VCB
f=1MHz
Reverse Transfer Capacitance, Cre – pF
Collector-to-Base Voltage, VCB – V
ITR06104


VCE(sat) – IC
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – mA
ITR06105


A S O
ICP=1000mA
IC=500mA
1ms
10ms
DC operation
Tc=25°C
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – V
IT09265


PC – Ta
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT09266


PC – Tc
Collector Dissipation, PC – W
Case Temperature, Tc – °C
IT09267