



# 2SC3504

## High-Definition CRT Display, Video Output Applications

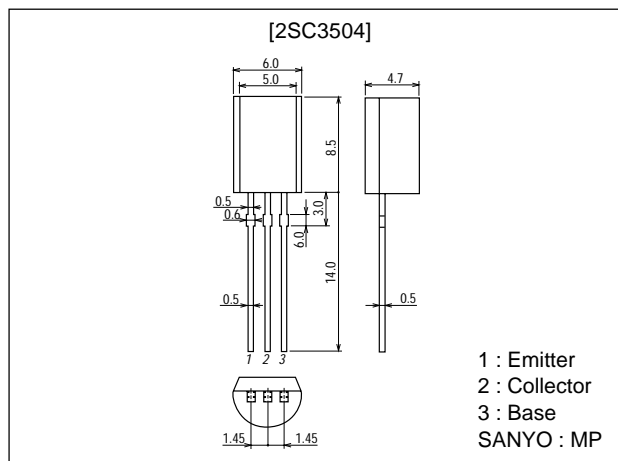
### Features

- High  $f_T$ .
- Small reverse transfer capacitance.

### Package Dimensions

unit:mm

2006B



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		70	V
Collector-to-Emitter Voltage	$V_{CE0}$		60	V
Emitter-to-Base Voltage	$V_{EB0}$		4	V
Collector Current	$I_C$		50	mA
Collector Current (Pulse)	$I_{CP}$		100	mA
Collector Dissipation	$P_C$		900	mW
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	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=3\text{V}, I_C=0$			1.0	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	60*		320*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	300	500		MHz
Base-to-Collector Time Constant	$\tau_{bb}C_C$	$V_{CE}=10\text{V}, I_C=10\text{mA}$		8	20	ps
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		1.0	1.6	pF

\* : The 2SC3504 is classified by 10mA  $h_{FE}$  as follows :

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Rank	D	E	F
$h_{FE}$	60 to 120	100 to 200	160 to 320

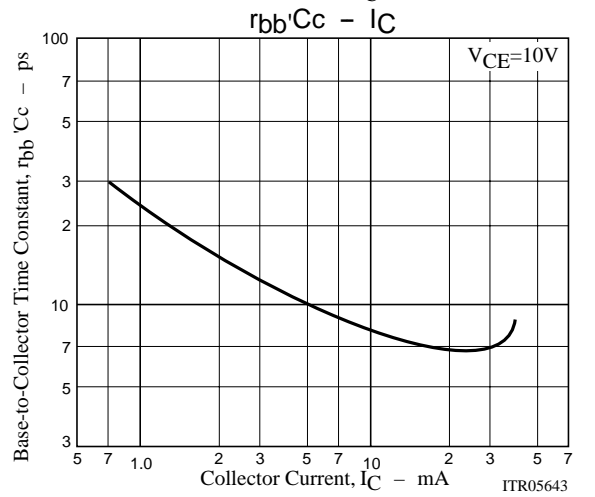
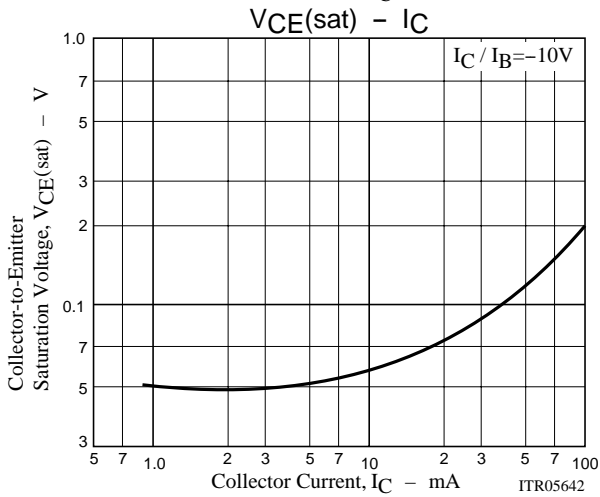
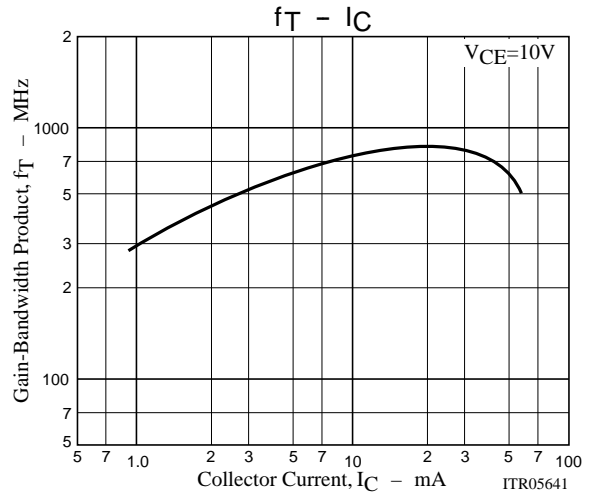
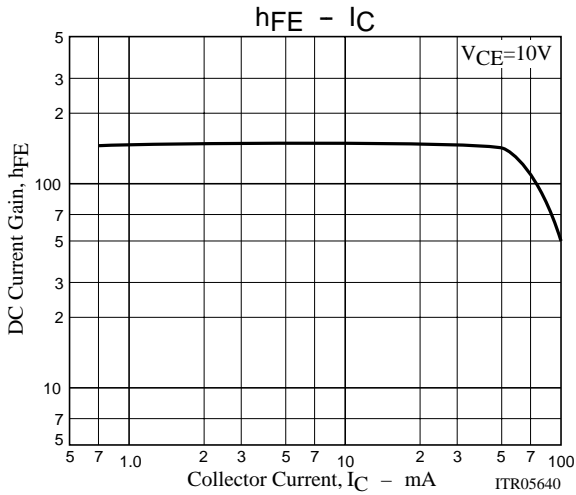
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	70			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	4			V



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