



2SA1541/2SC3956

High-Definition CRT Display Video Output Applications

Applications

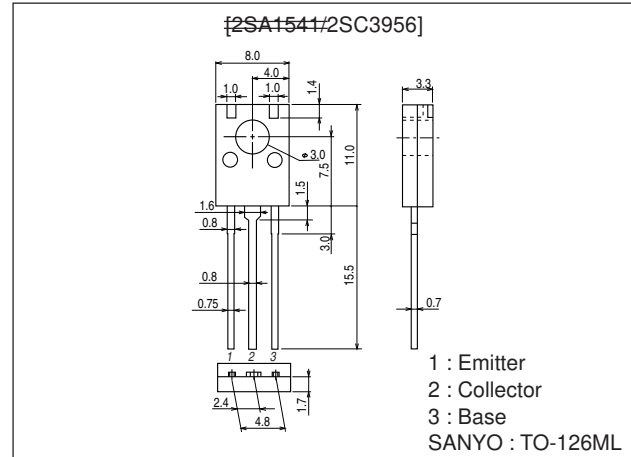
- High-definition CRT display video output, wide-band amplifier.

Features

- High gain-bandwidth product : $f_T=300\text{MHz}$.
- High breakdown voltage : $V_{CEO}=200\text{Vmin.}$
- Small reverse transfer capacitance and excellent high frequency characteristics : $C_{re}=2.2\text{pF/NPN}$; 2.7pF/PNP .
- Complementary PNP and NPN types.
- Adoption of FBET process.
- Micaless type : TO-126 plastic package.

Package Dimensions

unit:mm
2042B



() : 2SA1541

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		≈ 200	V
Collector-to-Emitter Voltage	V_{CEO}		≈ 200	V
Emitter-to-Base Voltage	V_{EBO}		≈ 3	V
Collector Current	I_C		≈ 200	mA
Peak Collector Current	I_{CP}		≈ 300	mA
Collector Dissipation	P_C		1.3	W
		$T_c=25^\circ\text{C}$	7	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}	$V_{CB}=\approx 150\text{V}, I_E=0$			≈ 0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=\approx 2\text{V}, I_C=0$			≈ 1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=\approx 10\text{V}, I_C=\approx 10\text{mA}$	40*		320*	
	h_{FE2}	$V_{CE}=\approx 10\text{V}, I_C=\approx 100\text{mA}$	20			
Gain-Bandwidth Product	f_T	$V_{CE}=\approx 30\text{V}, I_C=\approx 50\text{mA}$		300		MHz

* h_{FE1} : The 2SA1541/2SC3956 are classified by 10mA h_{FE} as follows :

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Rank	C	D	E	F
h_{FE}	40 to 80	60 to 120	100 to 200	160 to 320

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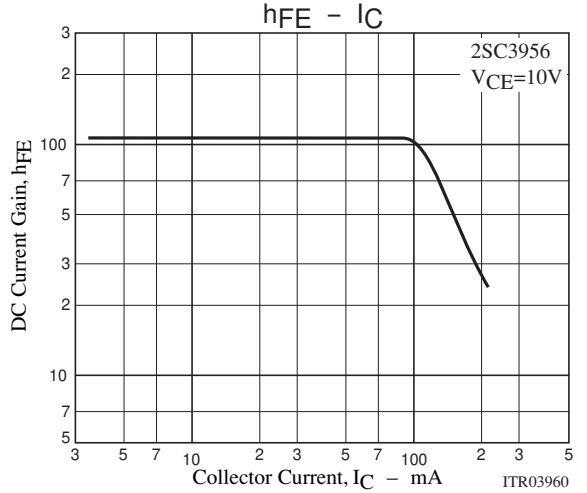
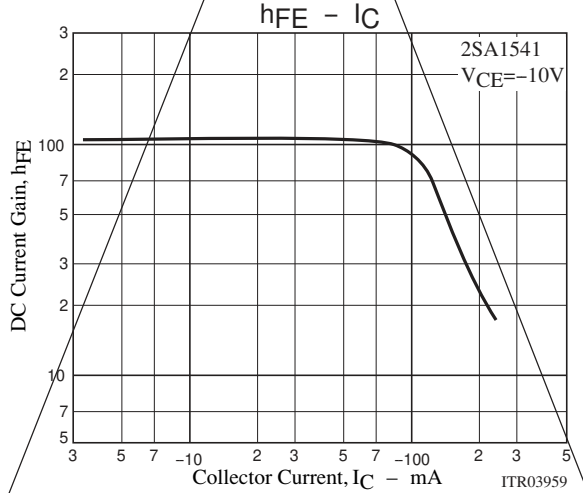
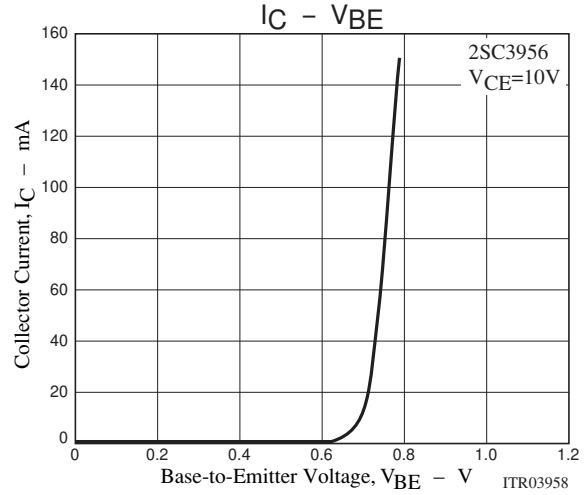
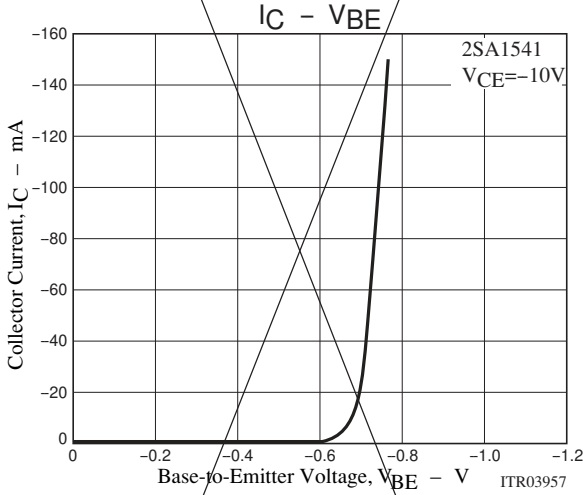
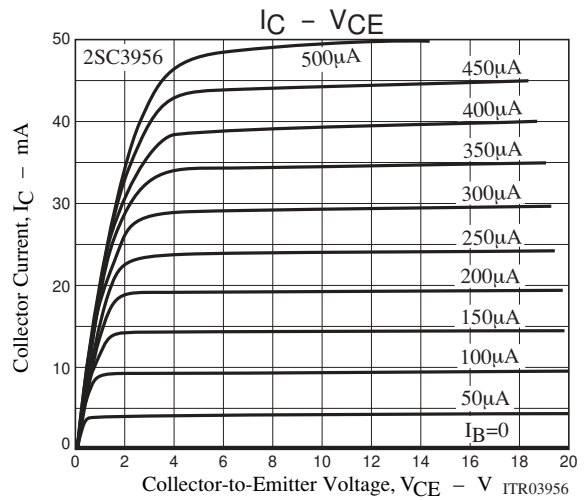
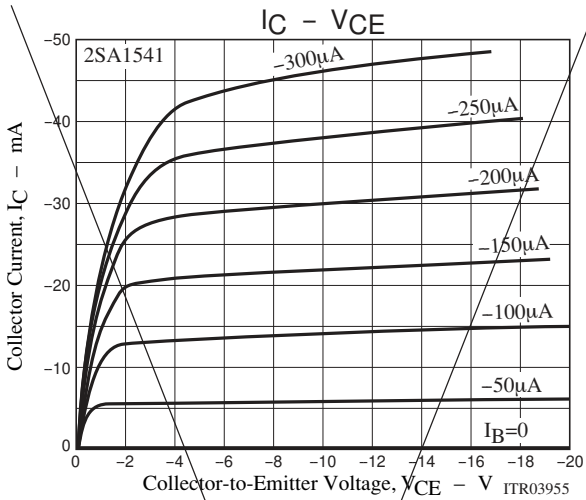
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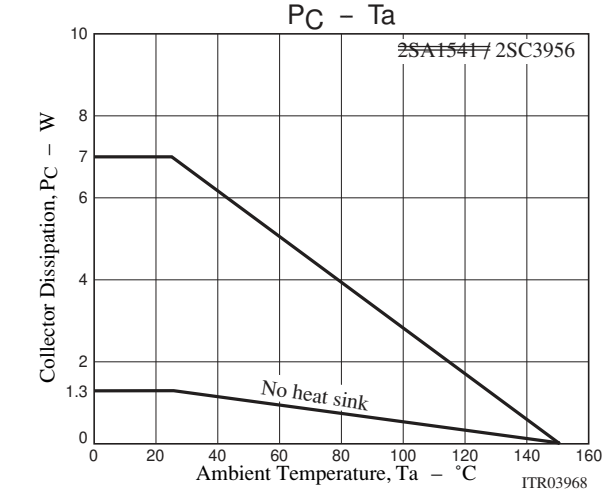
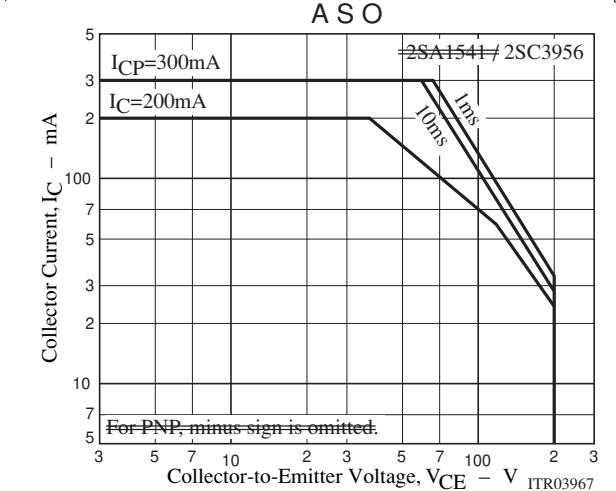
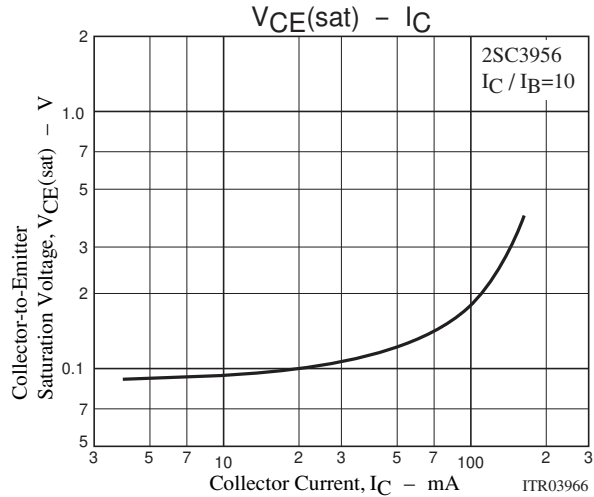
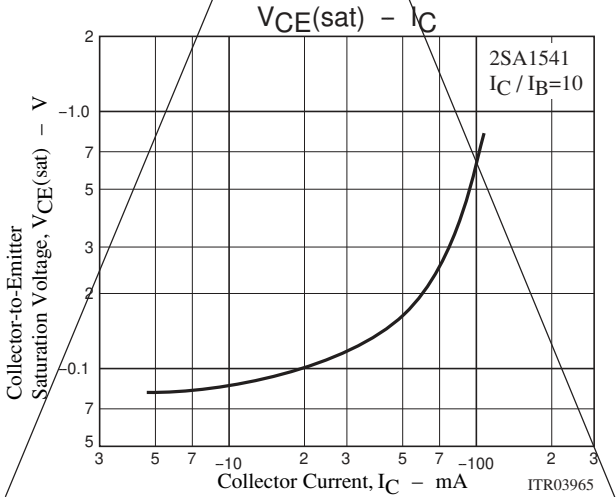
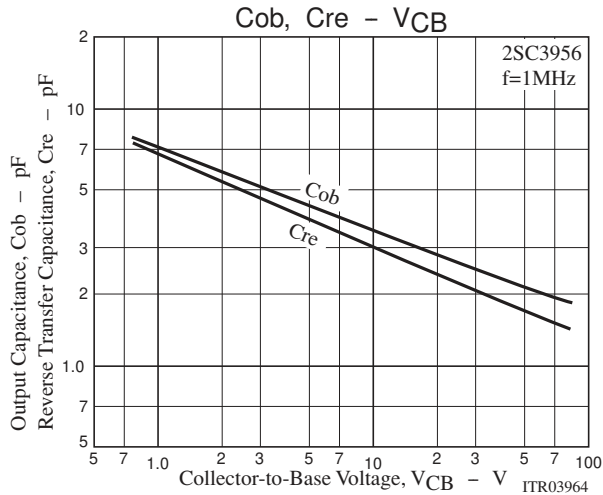
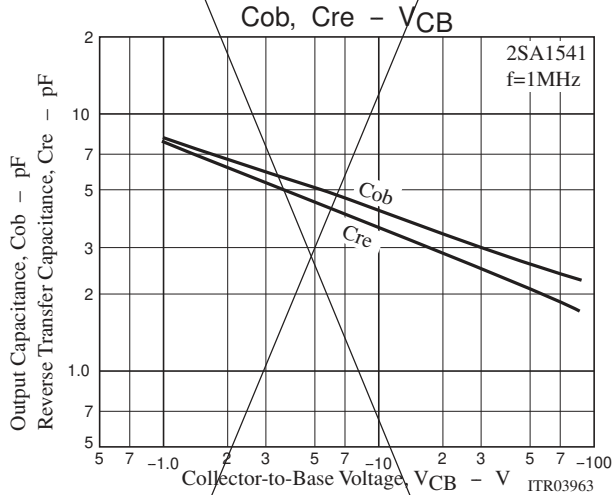
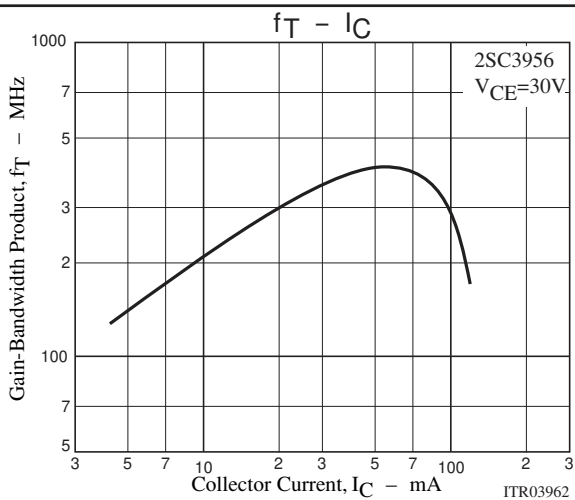
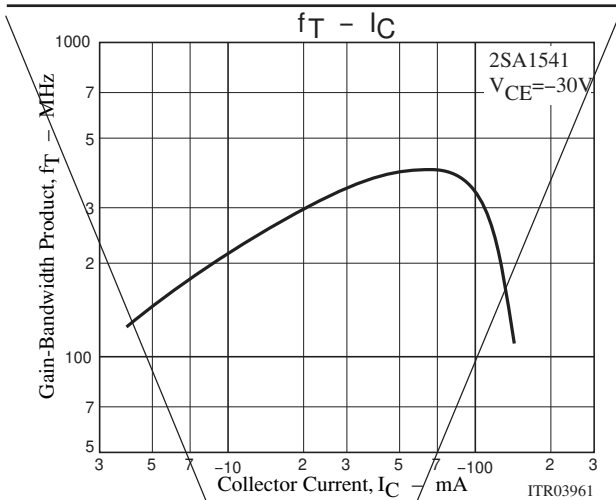
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB} = 30V, f = 1MHz$		2.7		pF
				(3.2)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB} = 30V, f = 1MHz$		2.2		pF
				(2.7)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 30mA, I_B = 3mA$			≈ 1.0	V
Emitter-to-Base Saturation Voltage	$V_{BE(sat)}$	$I_C = 30mA, I_B = 3mA$			≈ 1.0	V



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