



2SA1406/2SC3600

Ultrahigh-Definition CRT Display Video Output Applications

Applications

- Ultrahigh-definition CRT display.
- Video output.
- Color TV chroma output.
- Wide-band amp.

Features

- High f_T : f_T typ=400MHz.
- High breakdown voltage : $V_{CEO} \geq 200V$.
- Small reverse transfer capacitance and excellent HF response
: $C_{re}=1.4pF$ (NPN), $1.7pF$ (PNP).
- Complementary PNP and NPN types.
- Adoption of FBET process.

() : 2SA1406

Specifications

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

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}		(-)4	V
Collector Current	I_C		(-)100	mA
Collector Current (Pulse)	I_{CP}		(-)200	mA
Collector Dissipation	P_C		1.2	W
		$T_c=25^\circ C$	7	W
Junction Temperature	T_j		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)150V, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)2V, I_C=0$			(-)1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)10V, I_C=(-)10mA$	40*		320*	
	h_{FE2}	$V_{CE}=(-)10V, I_C=(-)60mA$	20			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)30mA$		400		MHz

* : The SA1406/2SC3600 are classified by 10mA h_{FE} as follows :

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

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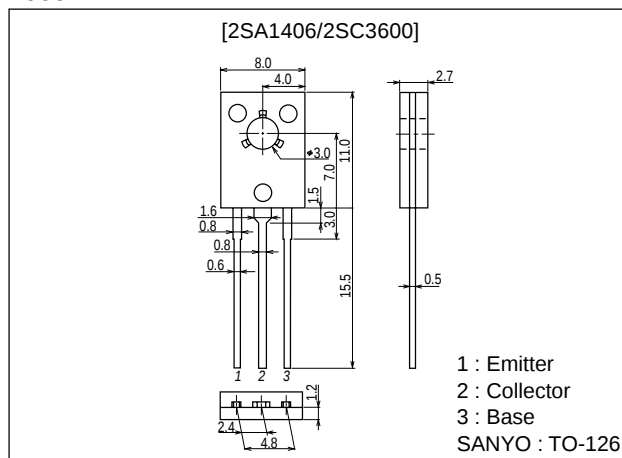
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Package Dimensions

unit:mm

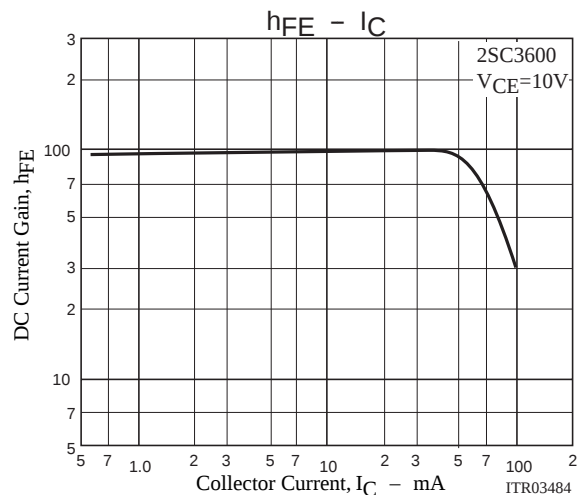
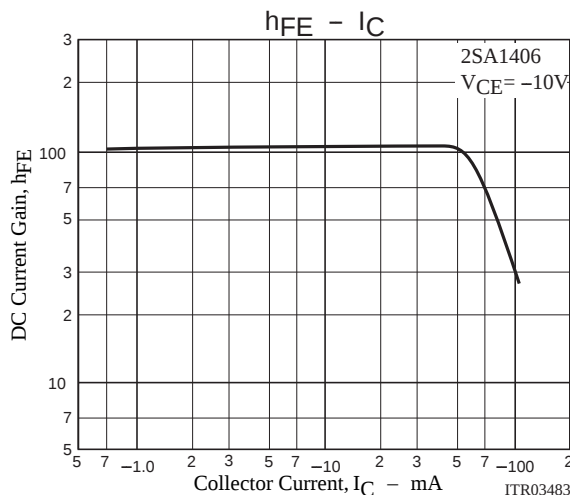
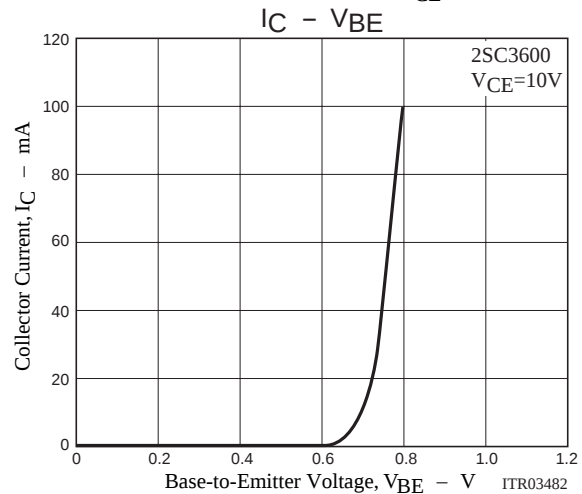
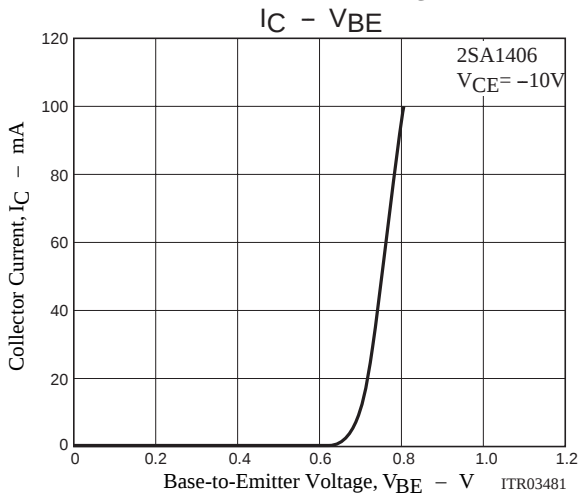
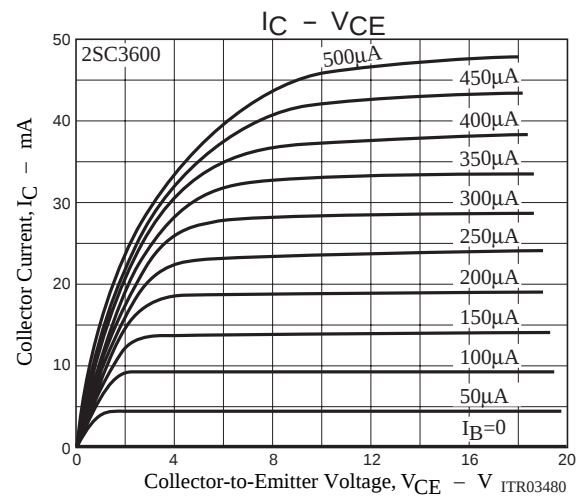
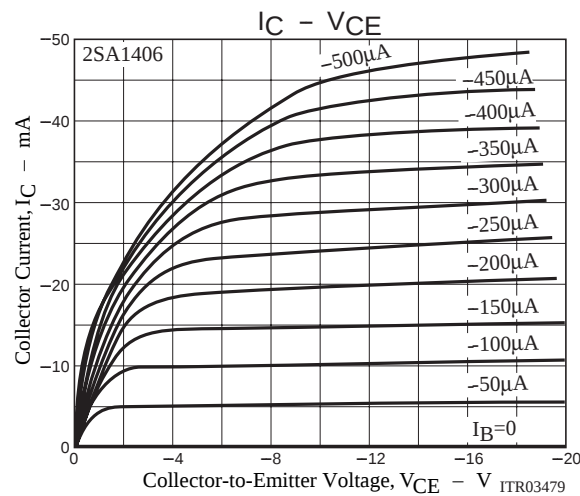
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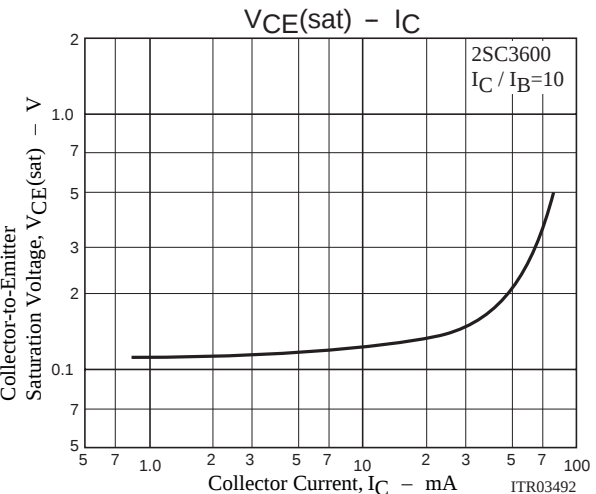
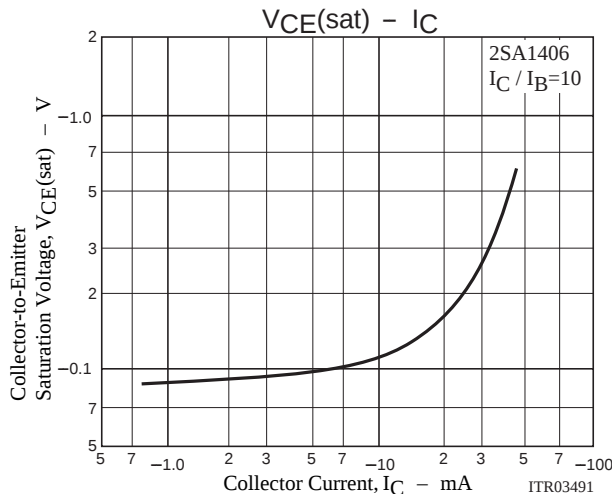
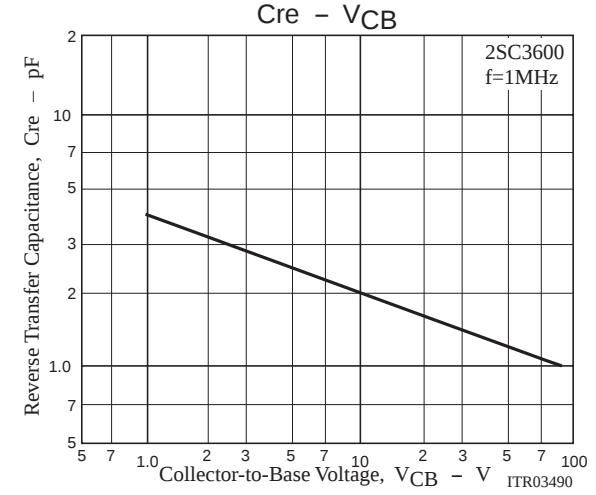
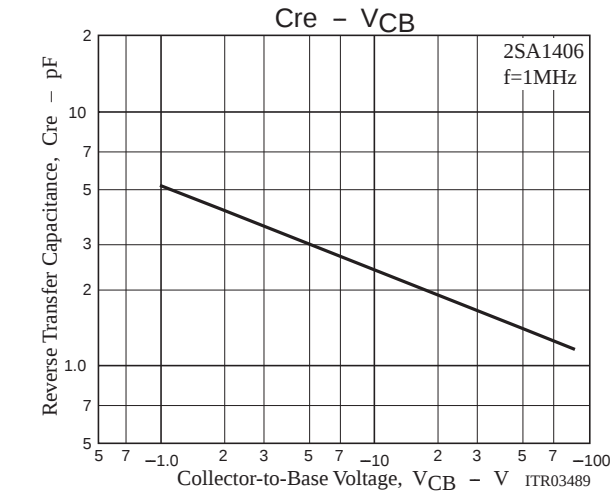
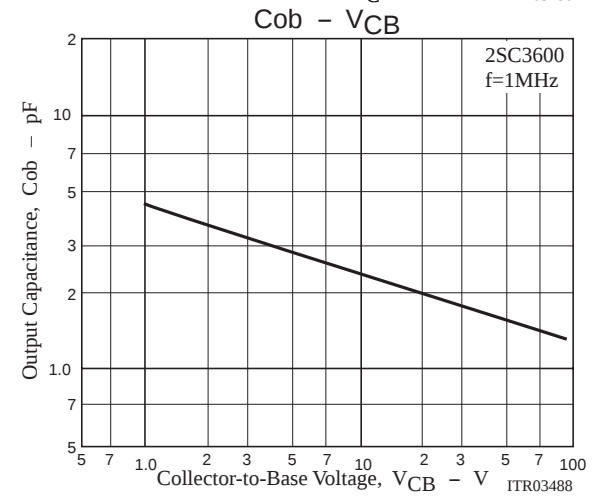
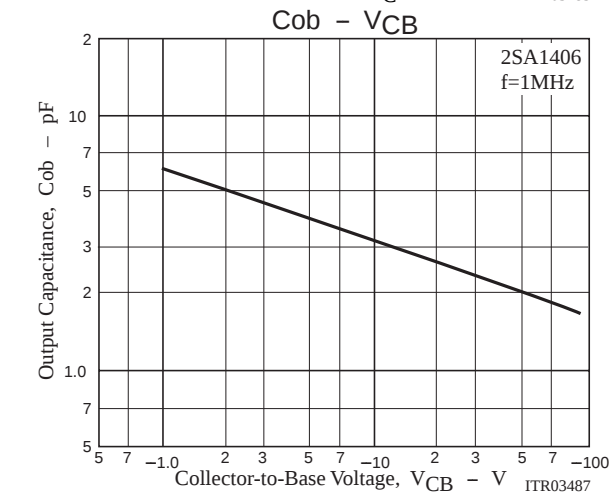
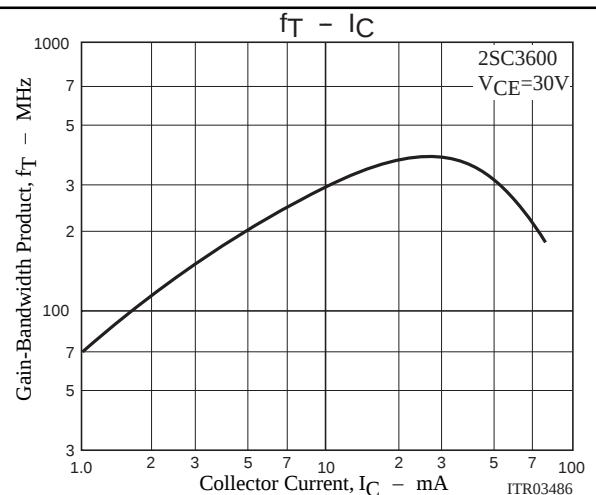
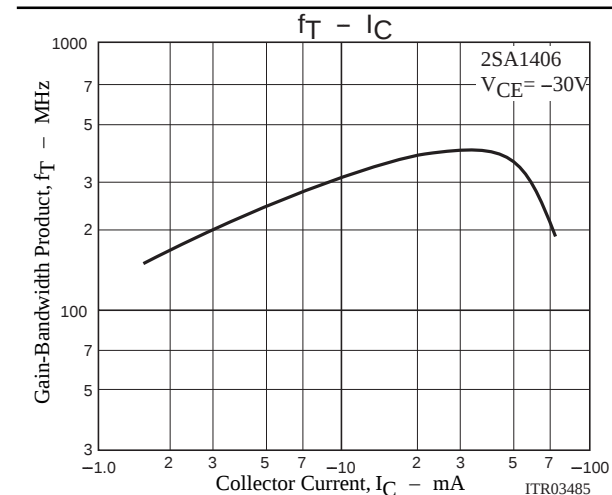
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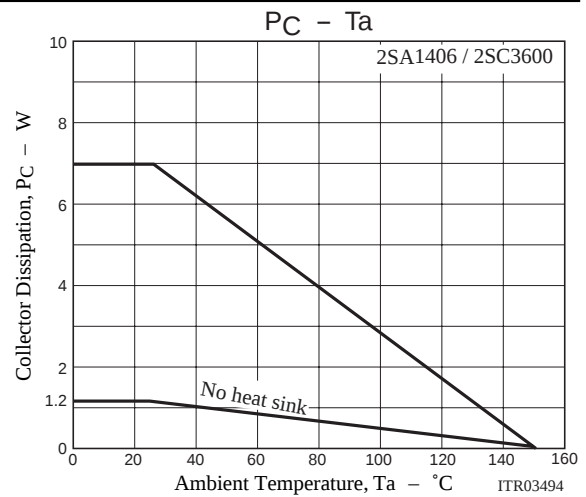
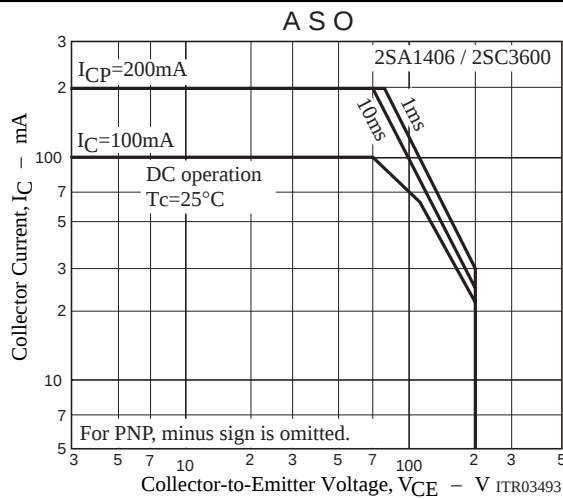
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)30\text{mA}$, $I_B=(-)3\text{mA}$			0.6	V
					(-0.8)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=30\text{mA}$, $I_B=(-)3\text{mA}$			(-1.0)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}$, $I_E=0$	(-)200			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}$, $R_{BE}=\infty$	(-)200			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	$I_E=(-)100\mu\text{A}$, $I_C=0$	(-)4			V
Output Capacitance	C_{ob}	$V_{CB}=(-)30\text{V}$, $f=1\text{MHz}$		1.8		pF
				(2.3)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=(-)30\text{V}$, $f=1\text{MHz}$		1.4		pF
				(1.7)		pF



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