



2SA1381/2SC3503

High-Definition CRT Display, Video Output Applications

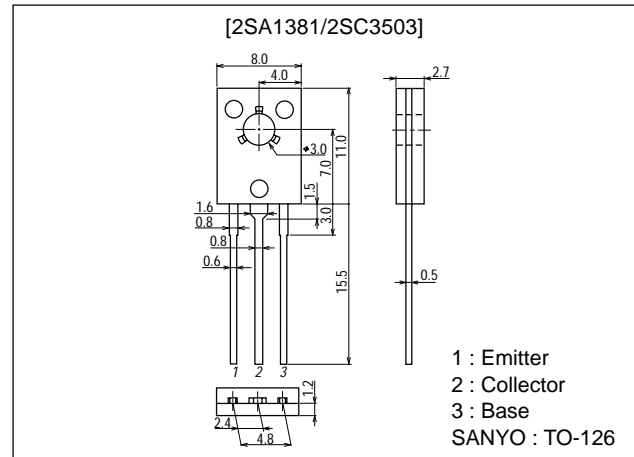
Features

- High breakdown voltage : $V_{CEO} \geq 300V$.
- Small reverse transfer capacitance and excellent high frequency characteristic
: $C_{re} = 1.8 \text{ pF}$ (NPN), 2.3 pF (PNP), $V_{CB} = 30V$.
- Adoption of MBIT process.

Package Dimensions

unit:mm

2009B



() : 2SA1381

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)300	V
Collector-to-Emitter Voltage	V_{CEO}		(-)300	V
Emitter-to-Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)100	mA
Collector Current (Pulse)	I_{CP}		(-)200	mA
Collector Dissipation	P_C		1.2	W
		$T_c = 25^\circ\text{C}$	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}	$V_{CB} = (-)200V, I_E = 0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)10V, I_C = (-)10\text{mA}$	40*		320*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)30V, I_C = (-)10\text{mA}$		150		MHz

* : The 2SA1381/2SC3503 are classified by $10\text{mA } h_{FE}$ 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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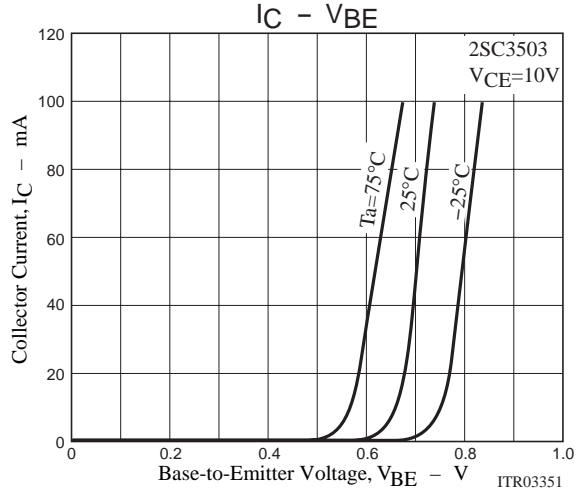
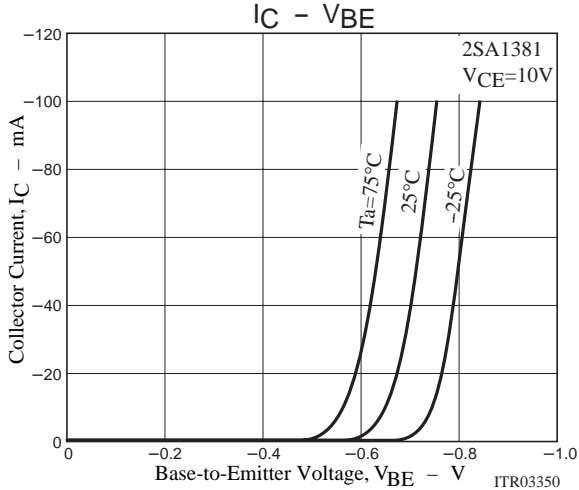
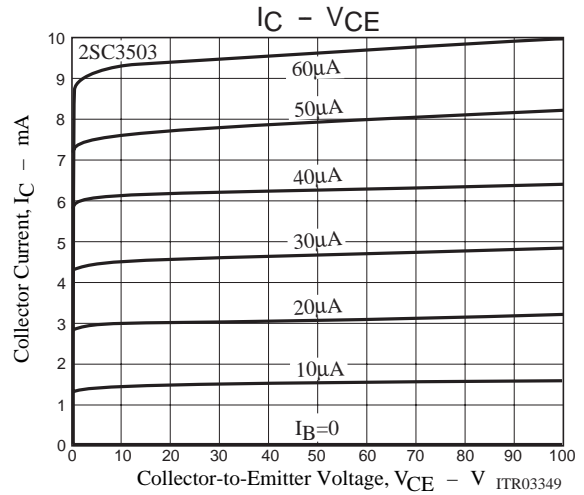
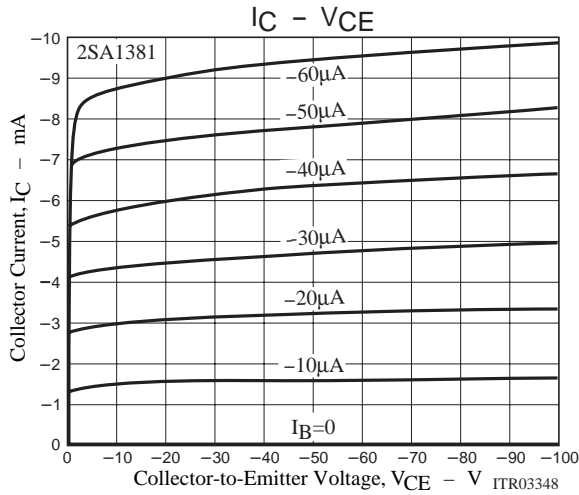
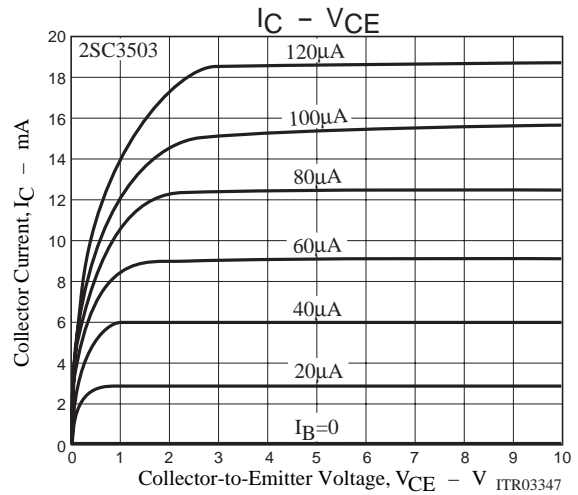
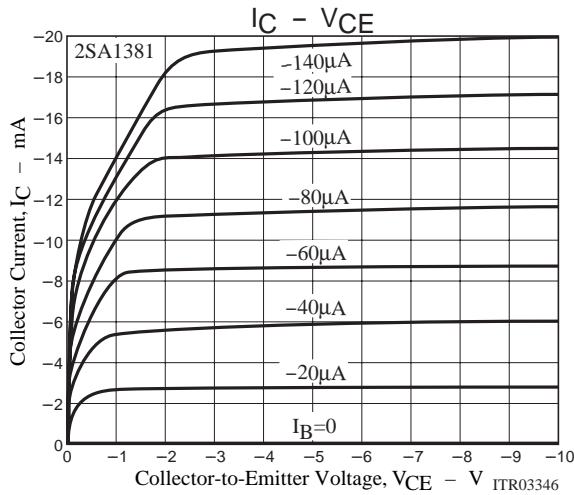
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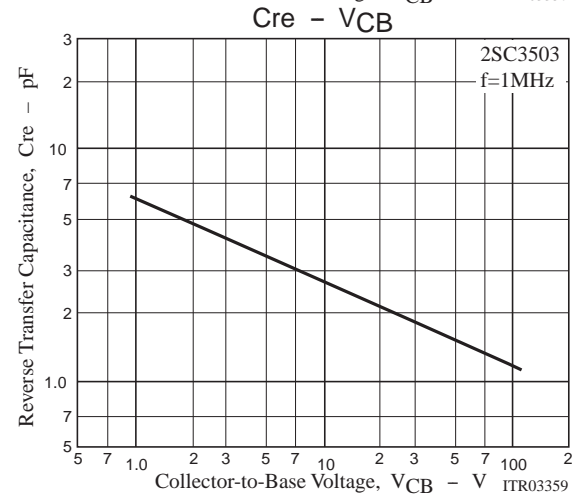
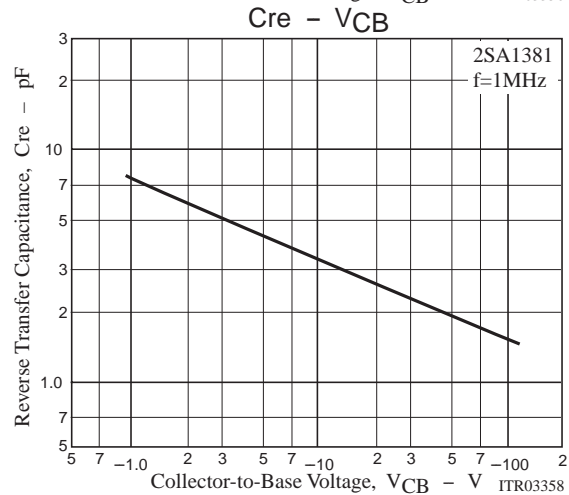
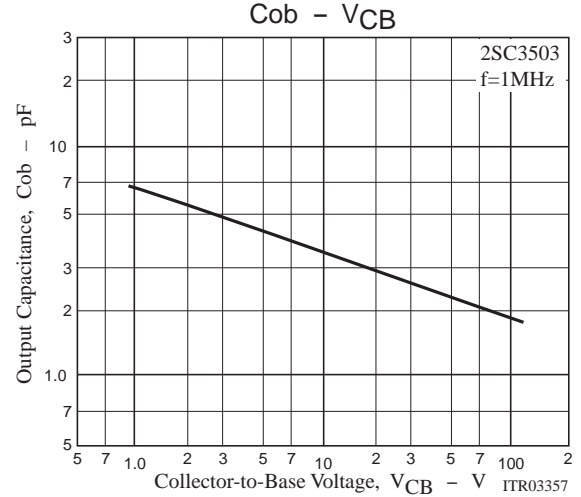
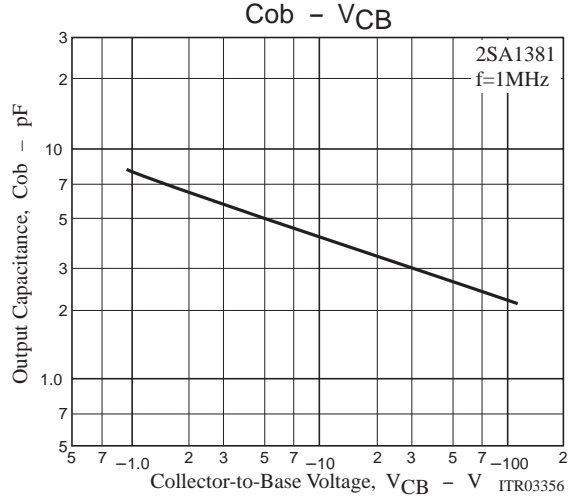
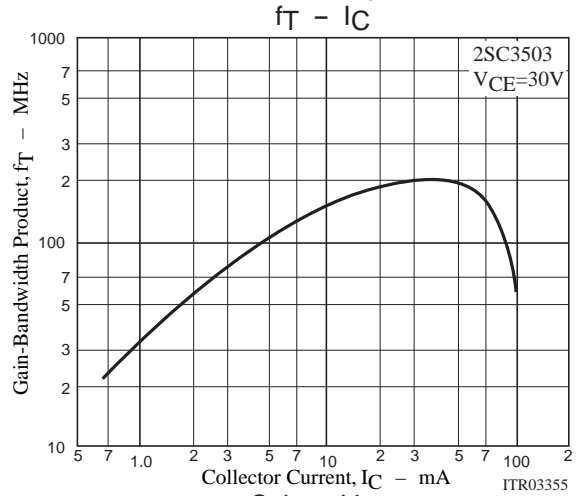
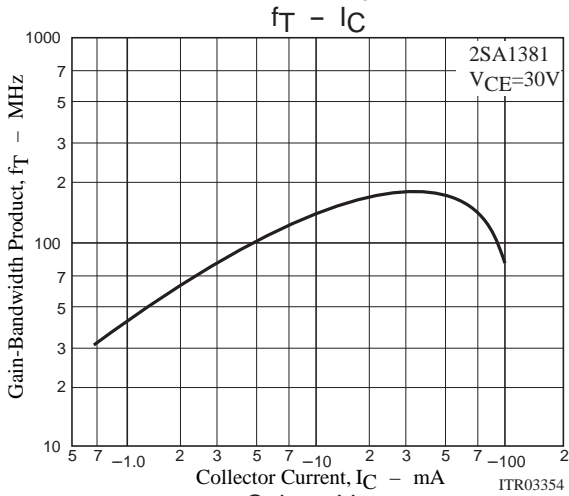
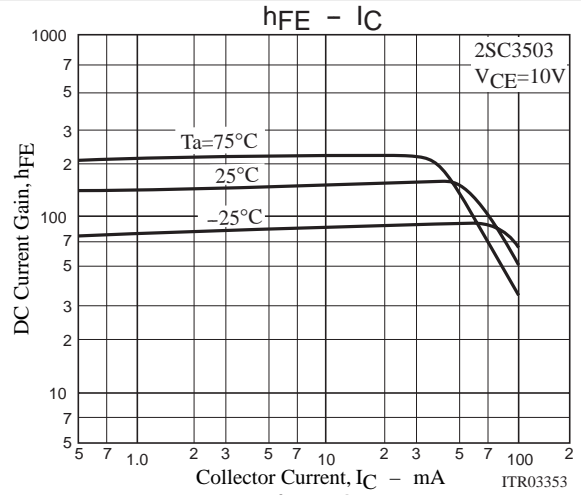
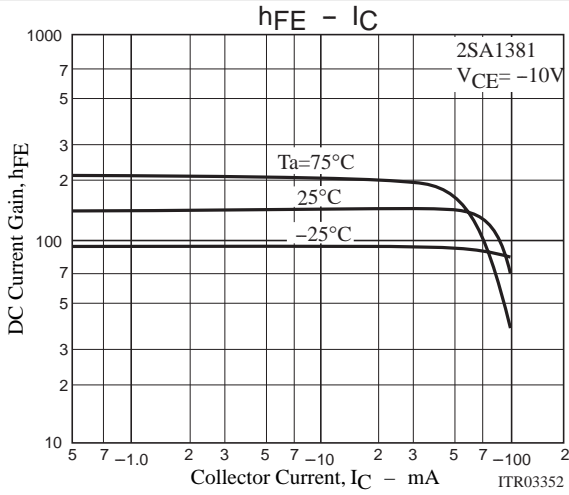
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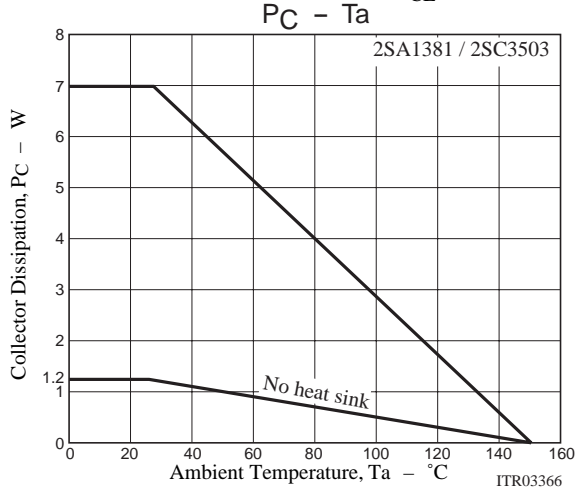
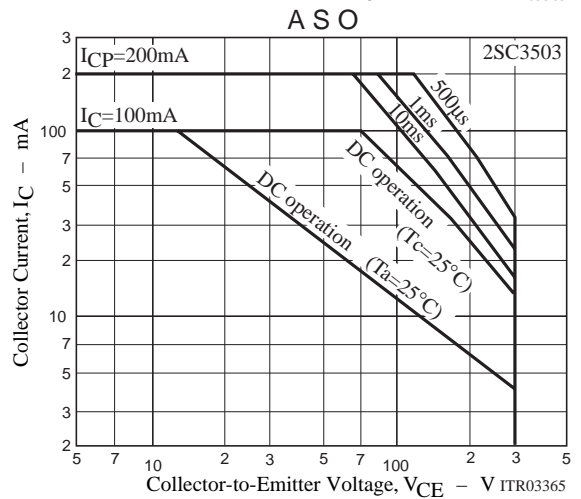
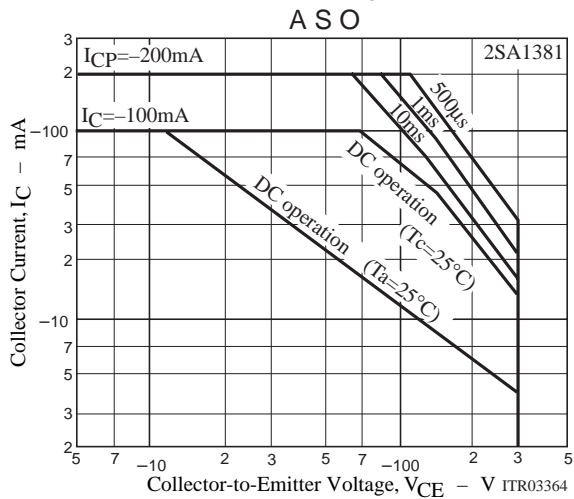
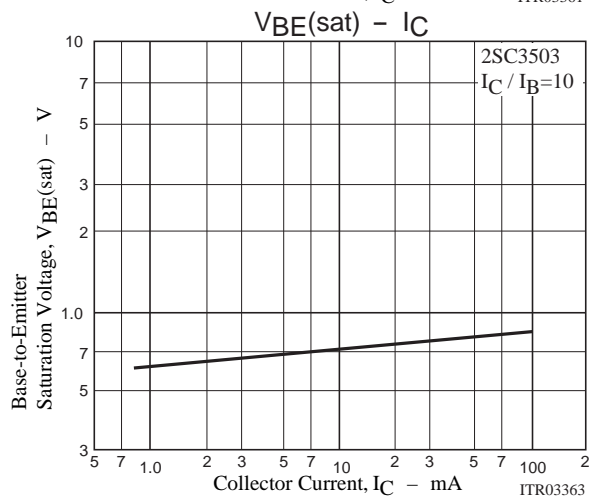
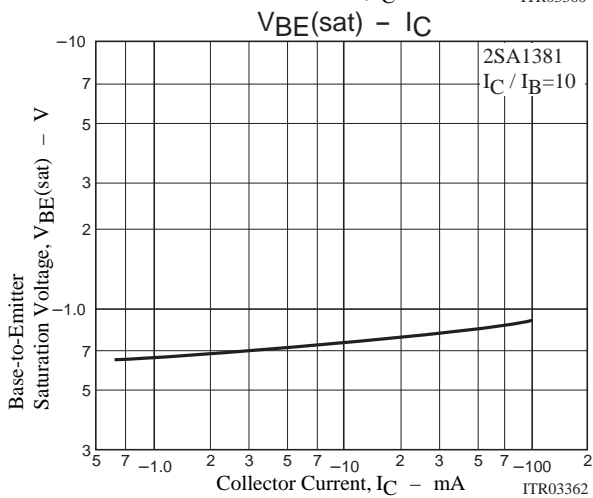
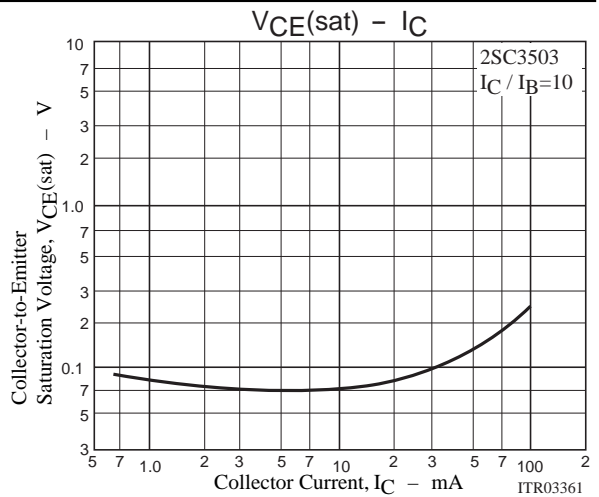
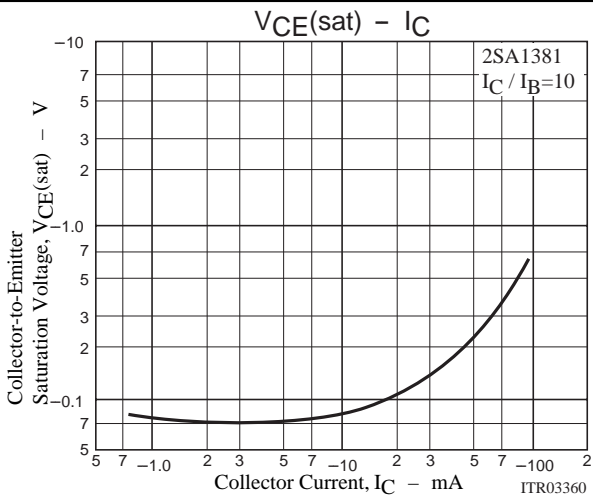
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=(-)30V, f=1MHz$		2.6		pF
				(3.1)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=(-)30V, f=1MHz$		1.8		pF
				(2.3)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)20mA, I_B=(-)2mA$			(-0.6)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)20mA, I_B=(-)2mA$			(-1.0)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-300)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-300)			V
Base-to-Emitter Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-5)			V



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