



## 2SA1380/2SC3502

### Ultrahigh-Definition CRT Display, Video Output Applications

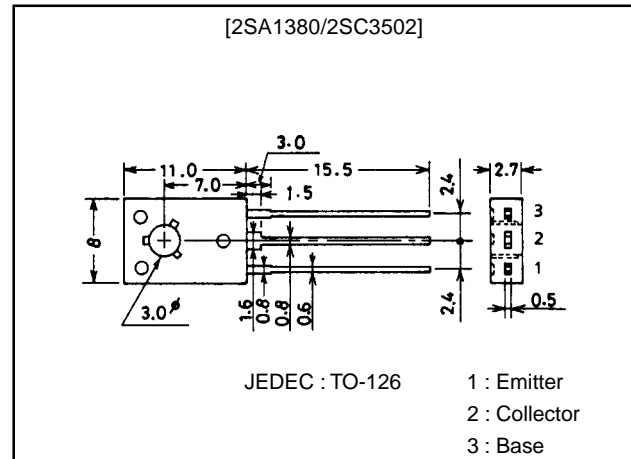
#### Features

- High breakdown voltage :  $V_{CEO} \geq 200V$ .
- Small reverse transfer capacitance and excellent high-frequency characteristics  
:  $C_{re} = 1.2pF$  (NPN),  $1.7pF$  (PNP),  $V_{CB} = 30V$ .
- Adoption of FBET process

#### Package Dimensions

unit:mm

2009B



() : 2SA1380

#### 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	$V_{EBO}$		(-)5	V
Collector Current	$I_C$		(-)100	mA
Collector Current (Pulse)	$I_{CP}$		(-)200	mA
Collector Dissipation	$P_C$		1.2	W
		$T_c = 25^\circ C$	5	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	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-)0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = (-)10V, I_C = (-)10mA$	40*		320*	
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)30V, I_C = (-)10mA$		150		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)30V, f = 1MHz$		1.7		pF
				(2.6)		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = (-)30V, f = 1MHz$		1.2		pF
				(1.7)		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	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)200			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)200			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)5			V

\* : The 2SA1380/2SC3502 are classified by 10mA  $h_{FE}$  as follows :

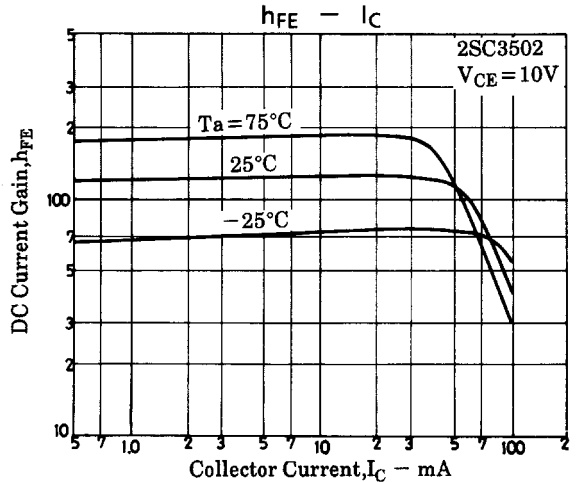
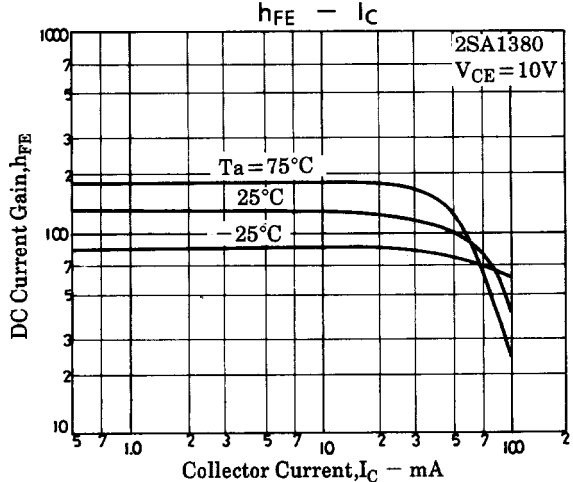
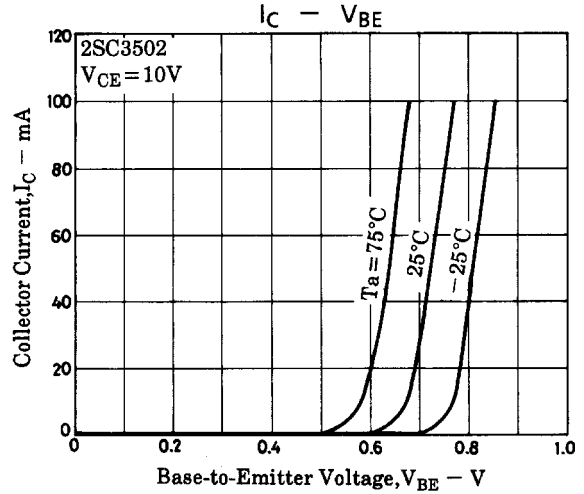
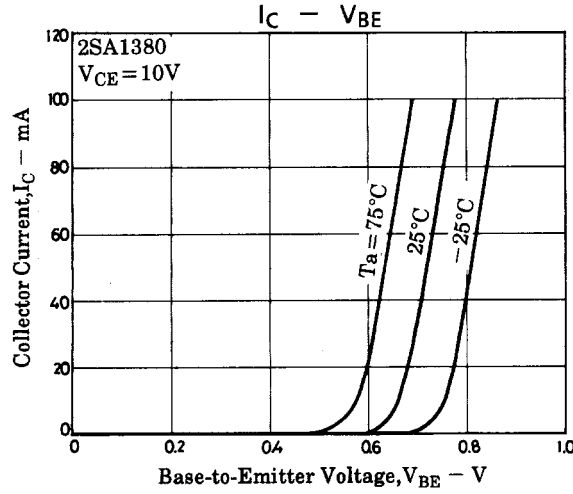
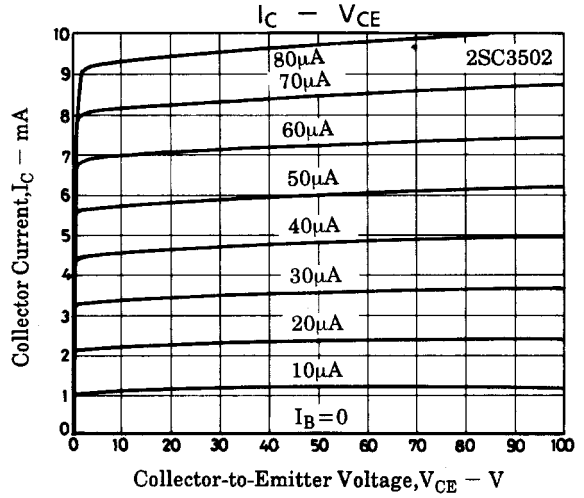
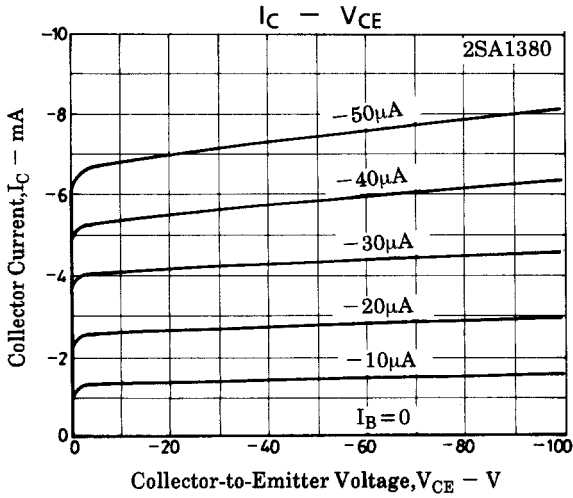
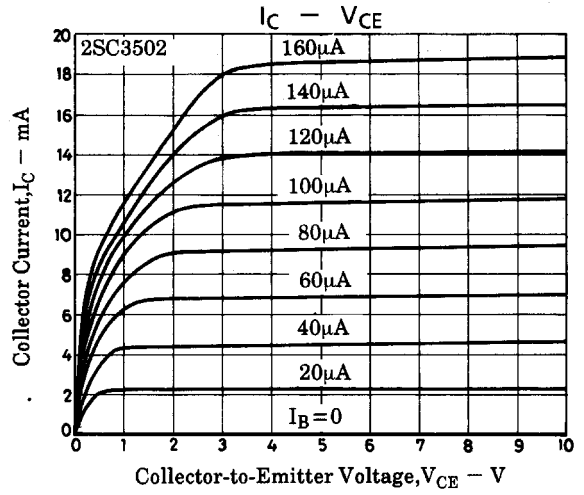
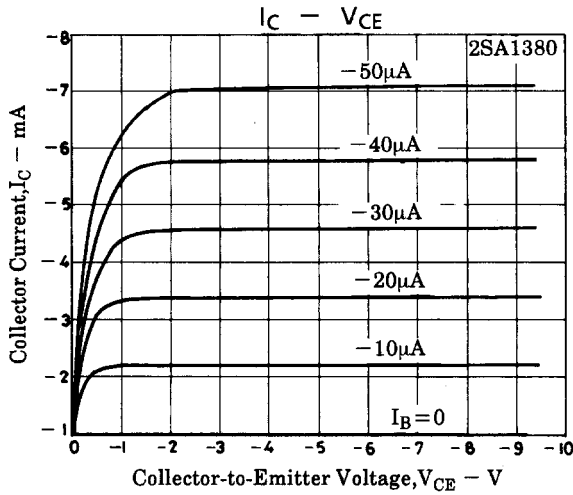
40	C	80	60	D	120	100	E	200	160	F	320
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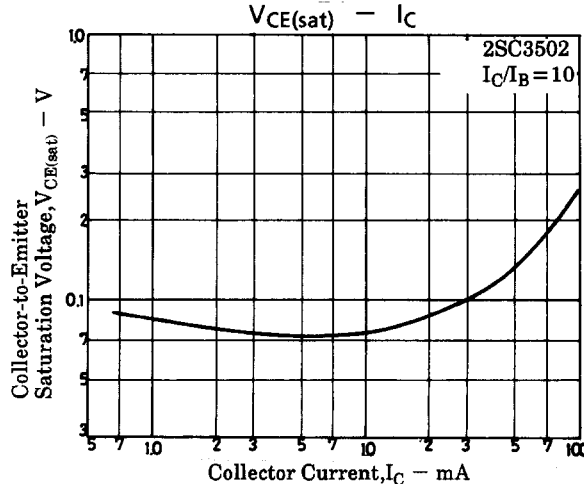
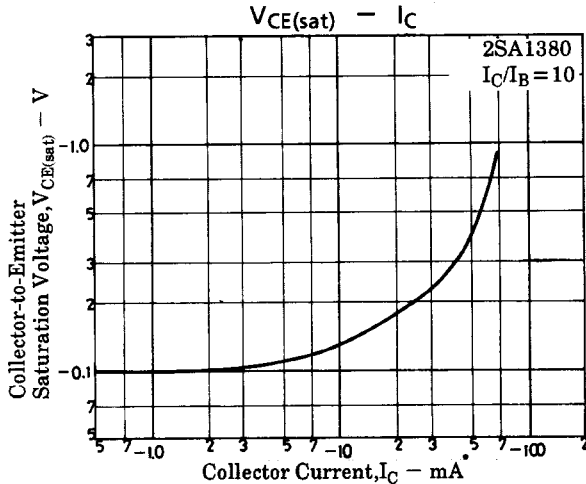
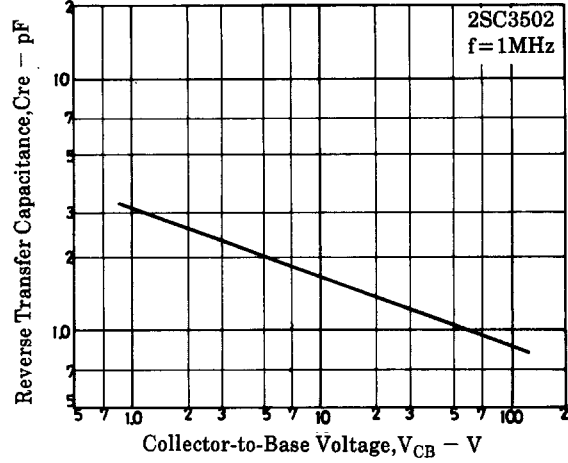
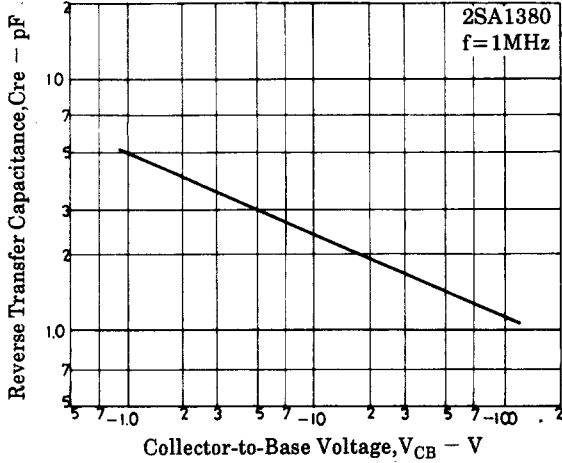
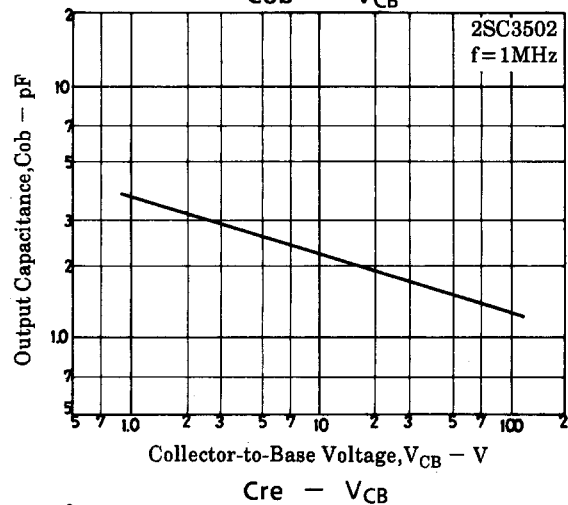
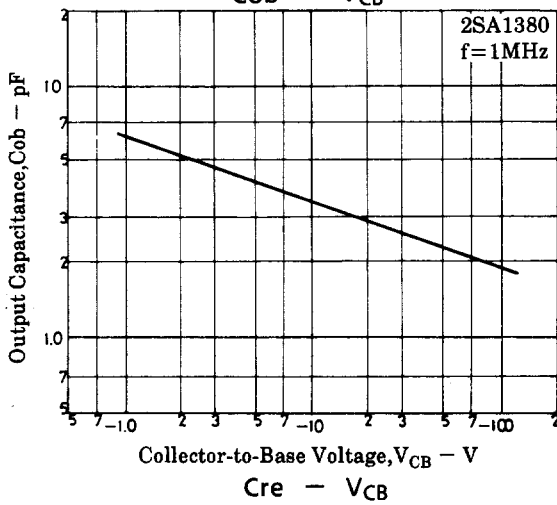
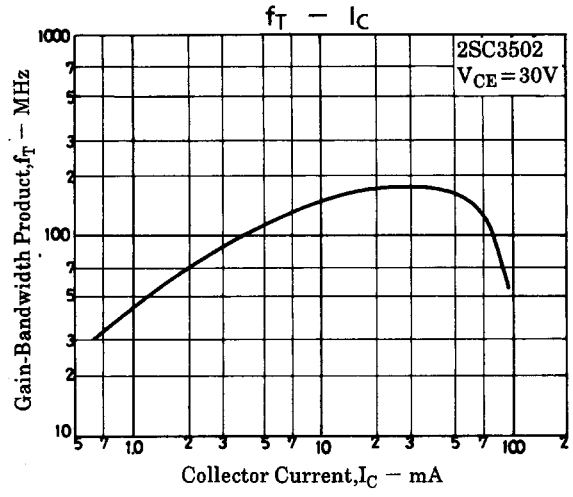
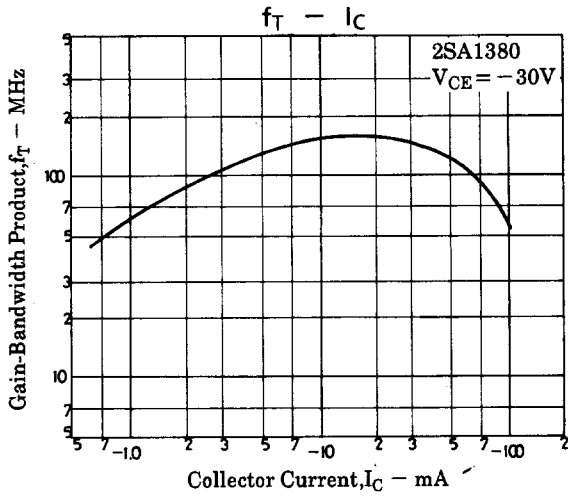
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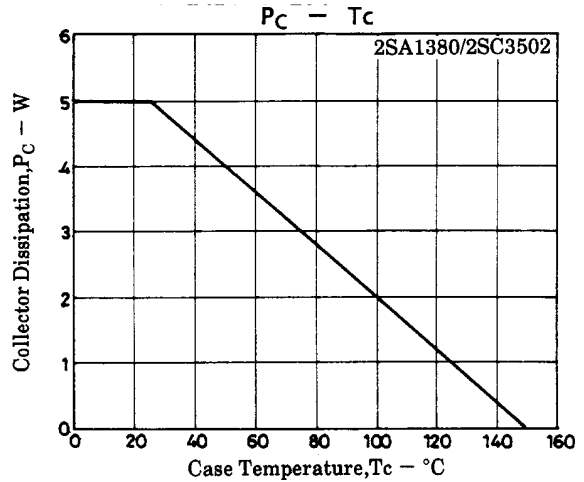
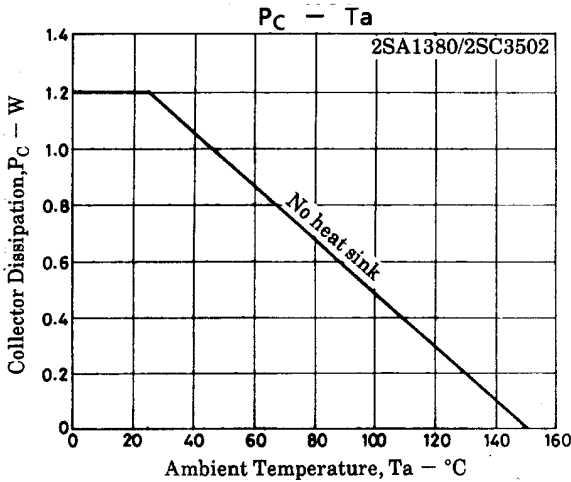
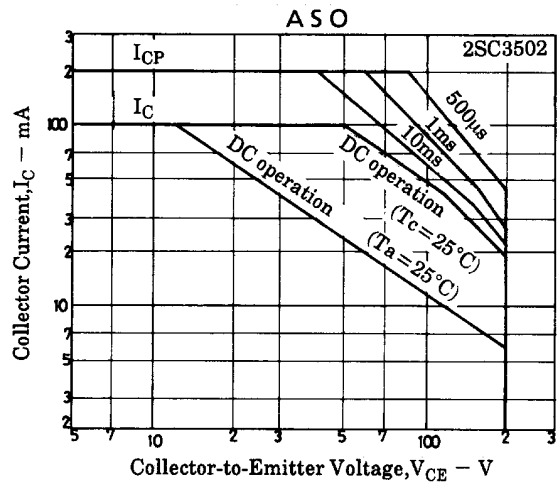
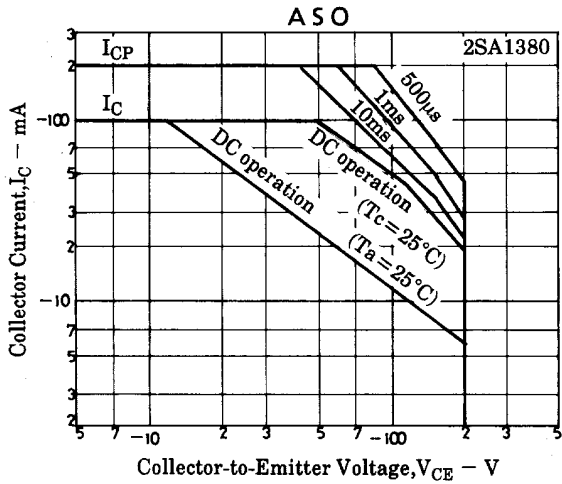
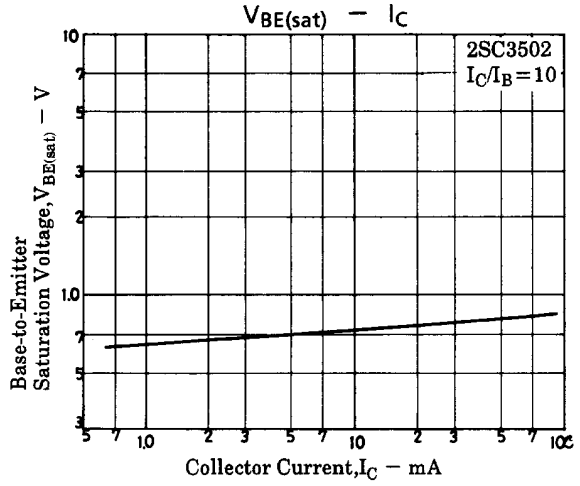
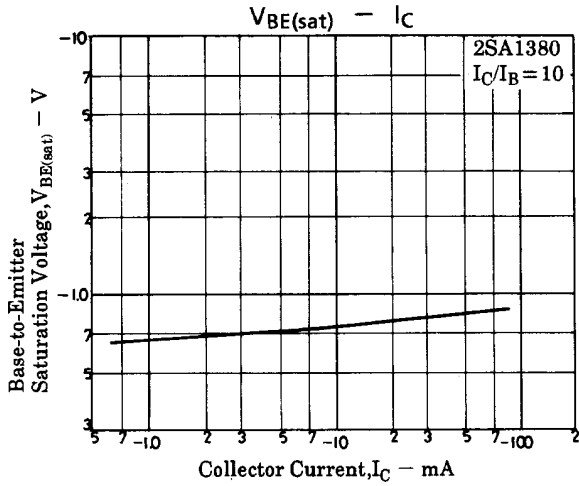
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