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PNP/NPN Epitaxial Planar Silicon Transistors

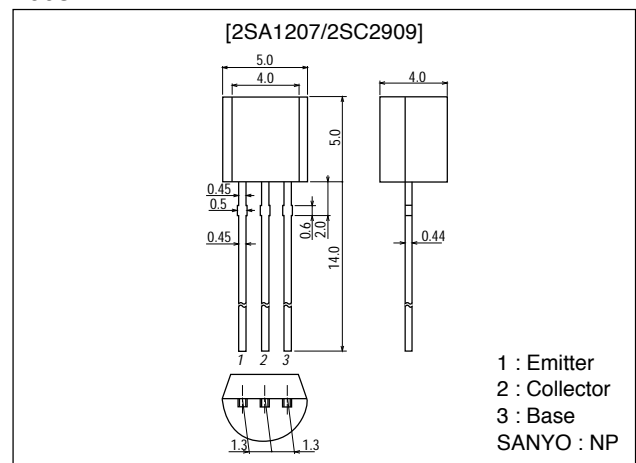
2SA1207/2SC2909 — High-Voltage Switching AF 60W Predriver Applications

Features

- Adoption of FBET process.
- High breakdown voltage.
- Excellent linearity of h_{FE} and small C_{ob} .
- Fast switching speed.

Package Dimensions

unit:mm
2003B



() : 2SA1207

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)180	V
Collector-to-Emitter Voltage	V_{CEO}		(-)160	V
Emitter-to-Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)70	mA
Collector Current (Pulse)	I_{CP}		(-)140	mA
Collector Dissipation	P_C		600	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_{CB0}	$V_{CB}=(-)80\text{V}, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)5\text{V}, I_C=(-)10\text{mA}$	100*		400*	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)10\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(2.5)2.0		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)30\text{mA}, I_B=(-)3\text{mA}$		0.08 (-0.14)	0.3 (-0.4)	V

* : The 2SA1207/2SC2909 are classified by 10mA h_{FE} as follows :

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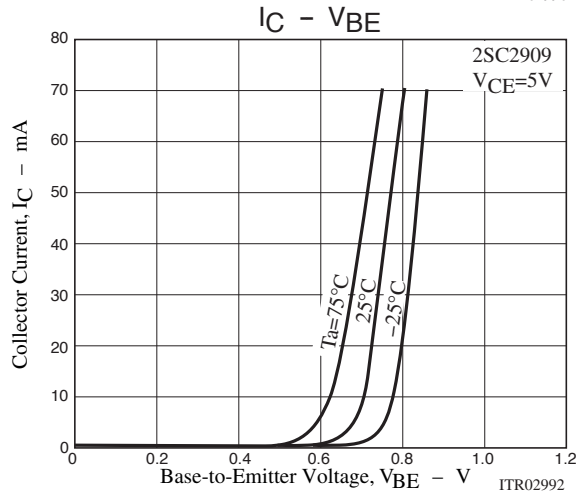
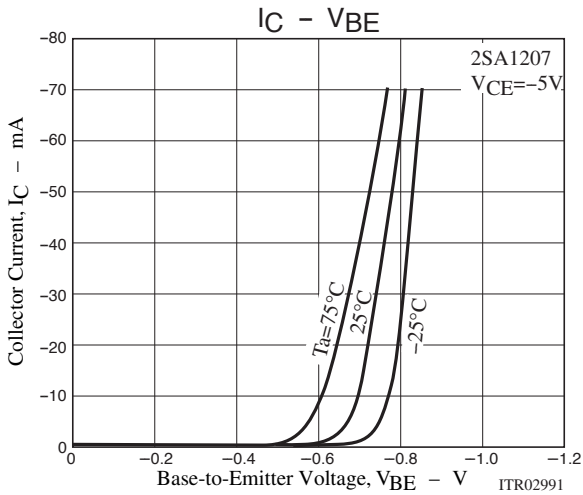
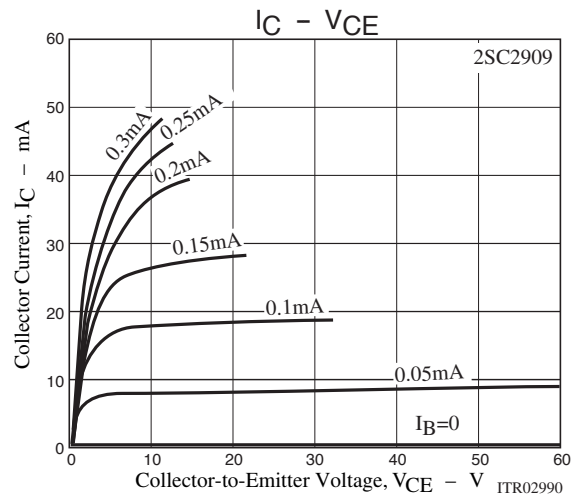
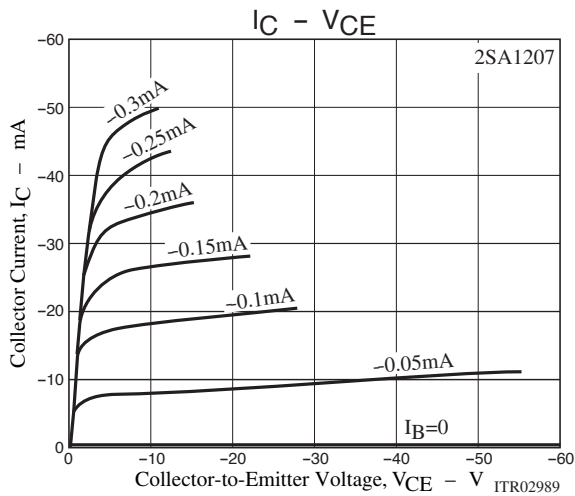
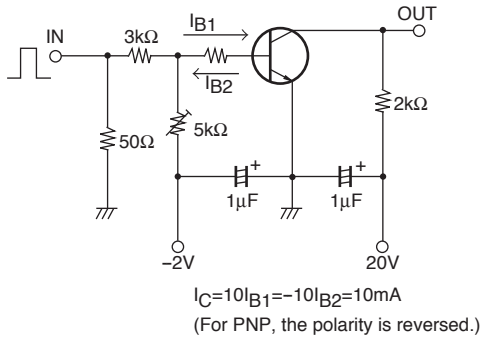
Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

2SA1207/2SC2909

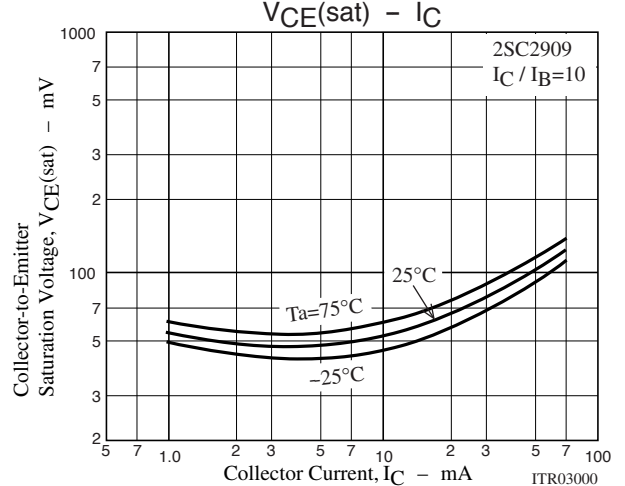
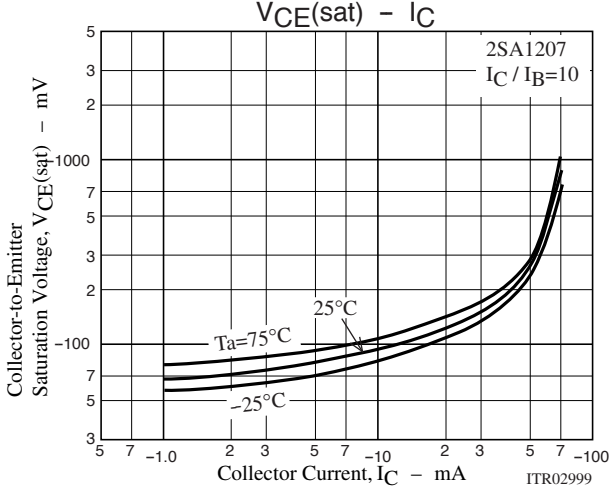
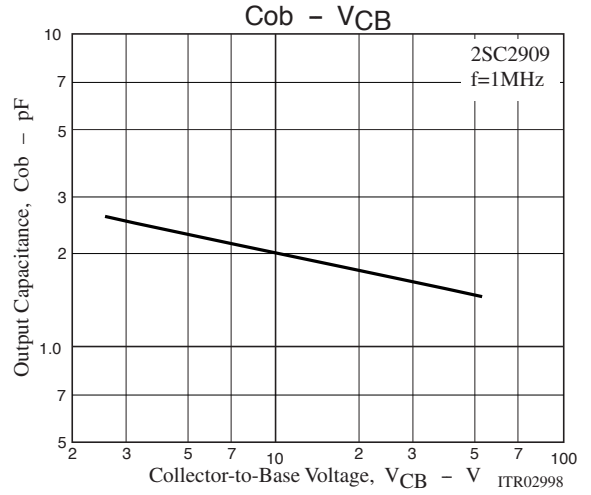
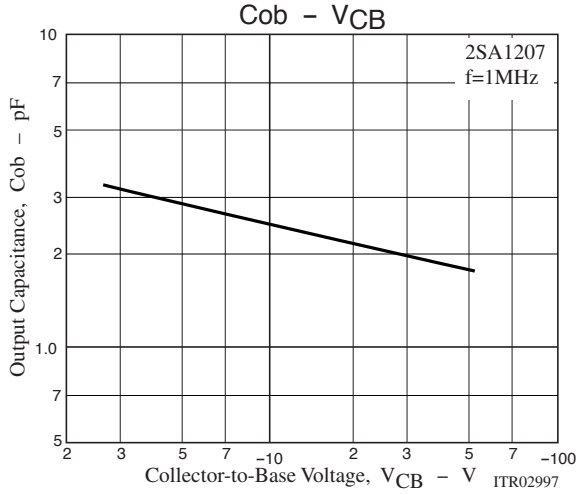
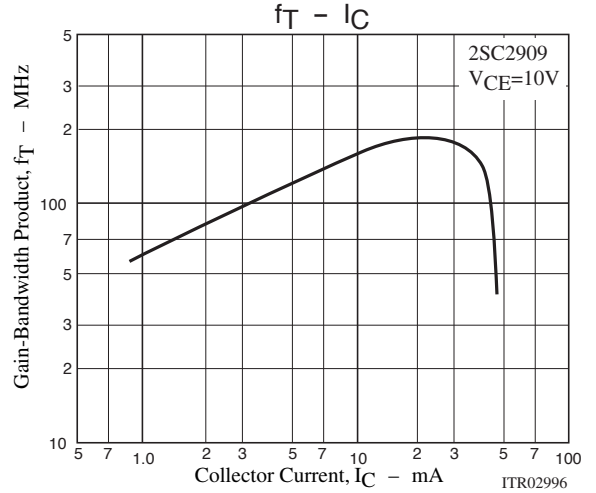
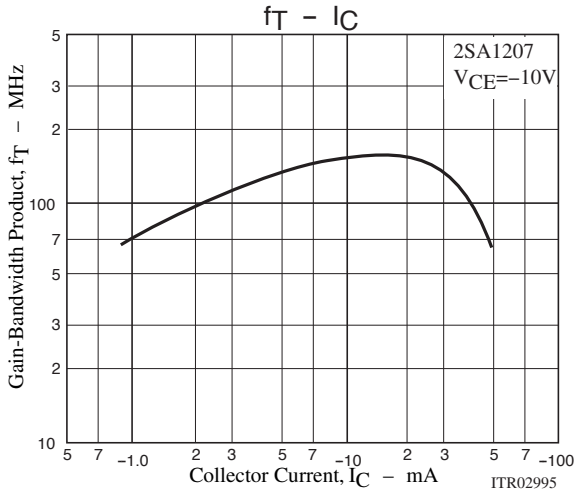
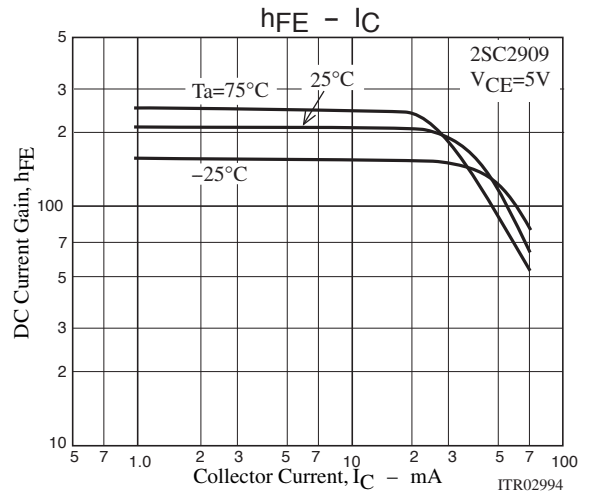
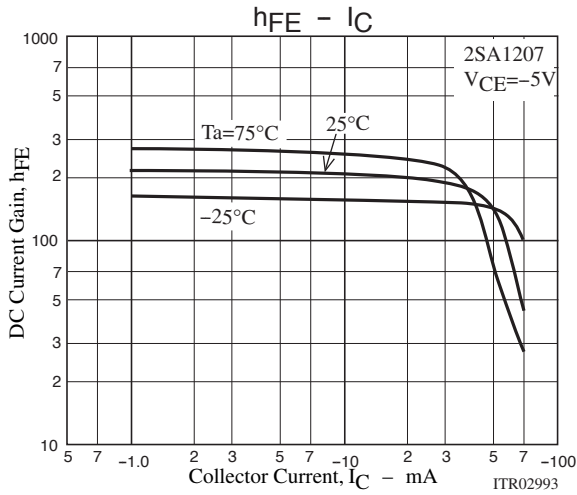
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Time	t_{on}	See specified Test Circuit		0.1		μs
Fall Time	t_f	See specified Test Circuit		0.2		μs
Storage Time	t_{stg}	See specified Test Circuit		1.0		μs

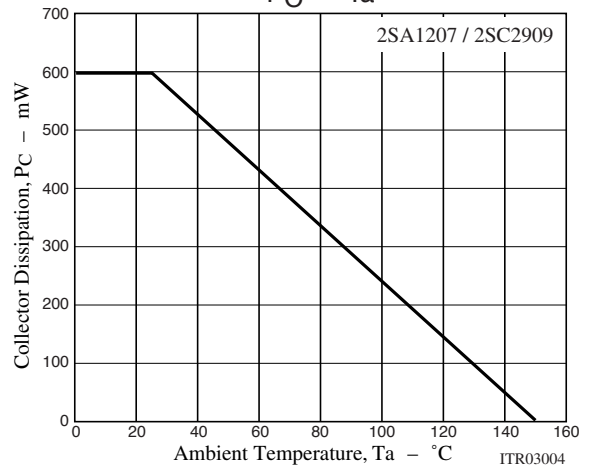
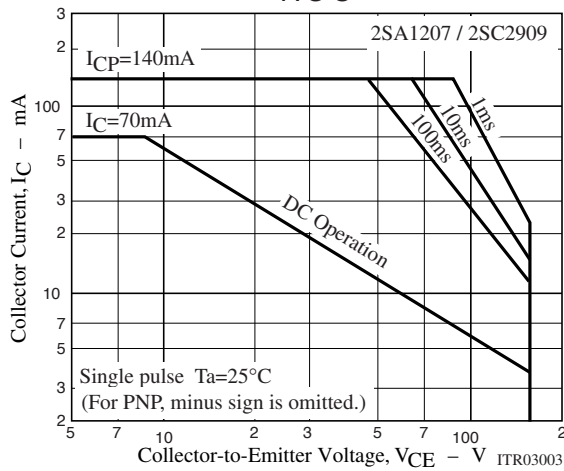
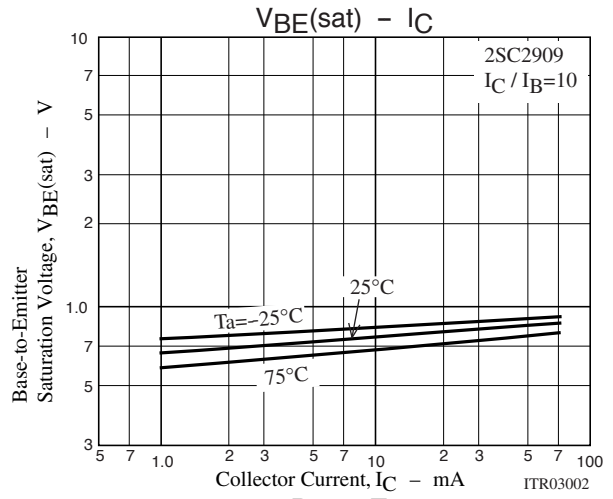
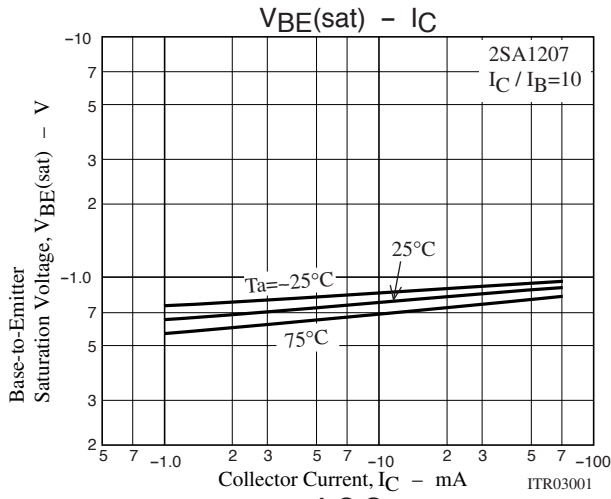
Switching Time Test Circuit



2SA1207/2SC2909



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