



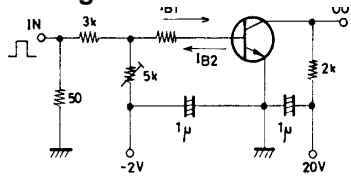
2SA1209/2SC2911

160V/140mA High-Voltage Switching and AF 100W Predriver Applications

Features

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

Switching Test Circuit



$I_C = 10 I_{B1} = -10 I_{B2} = 10 \text{mA}$
 (For PNP, the polarity is reversed)
 Unit (resistance : Ω , capacitance : F)

() : 2SA1209

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		(-)140	mA
Collector Current (Pulse)	I_{CP}		(-)200	mA
Collector Dissipation	P_C		1	W
		$T_c = 25^\circ\text{C}$	10	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}	$V_{CB} = (-)80\text{V}, I_E = 0$			(-)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}	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(4.0)3.0		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$		0.07 (-0.14)	0.3 (-0.4)	V
Turn-ON Time	t_{on}	See specified Test Circuit		0.1		μs
Fall Time	t_f	See specified Test Circuit		0.1		μs
Storage Time	t_{stg}	See specified Test Circuit		1.5		μs

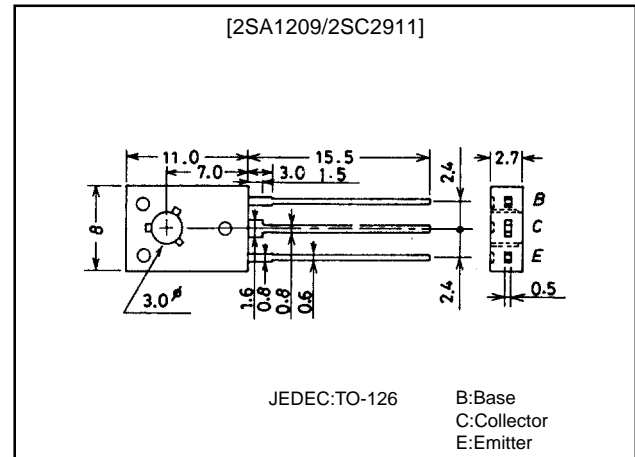
*: The 2SA1209/2SC2911 are classified by 10mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400
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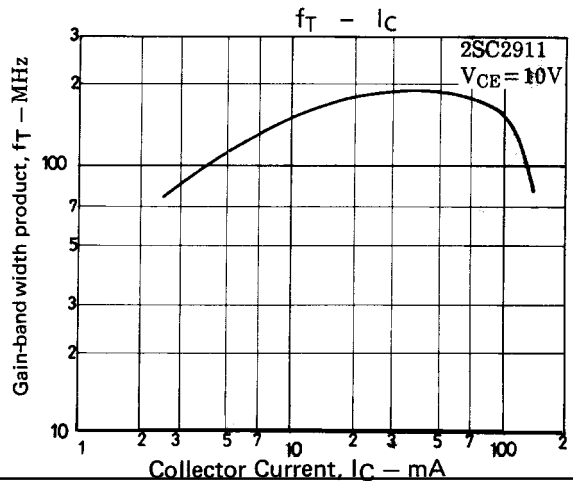
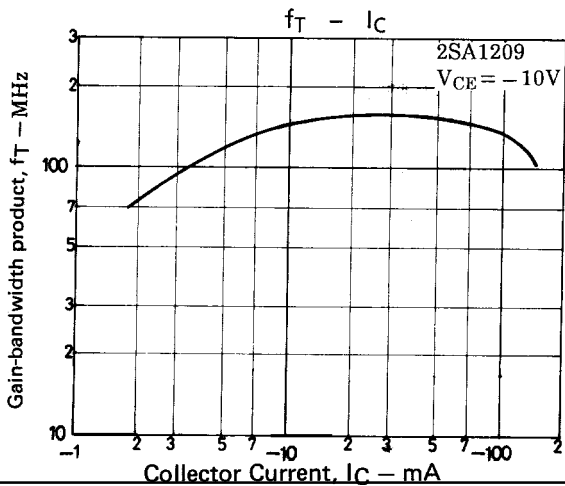
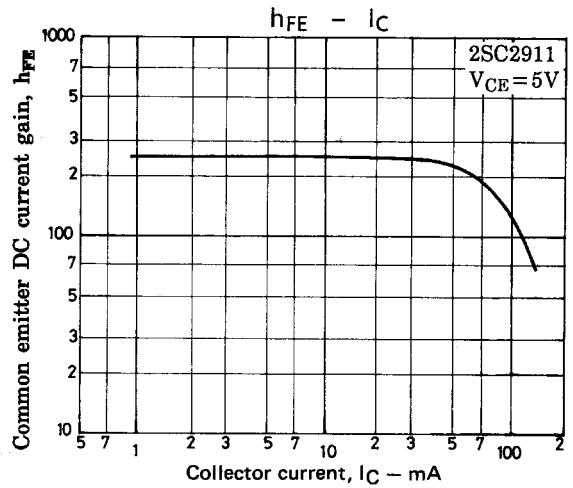
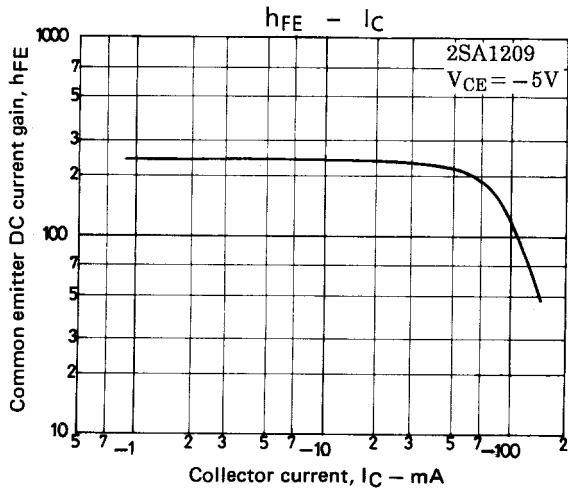
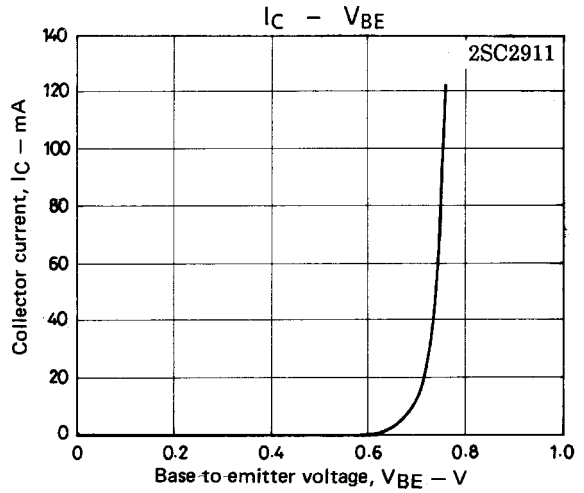
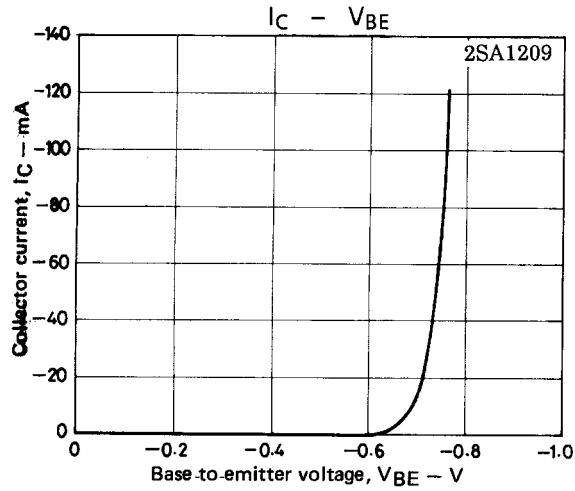
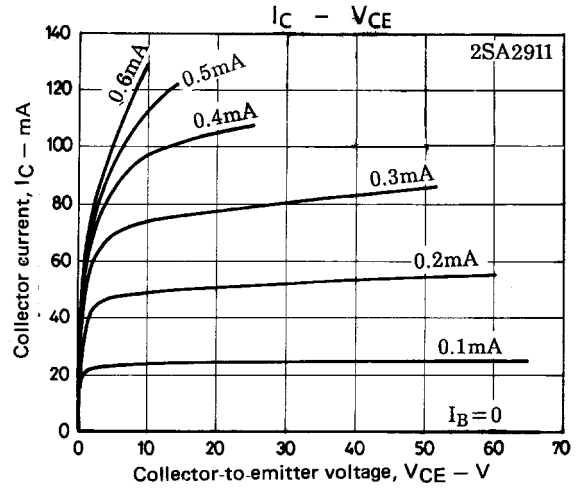
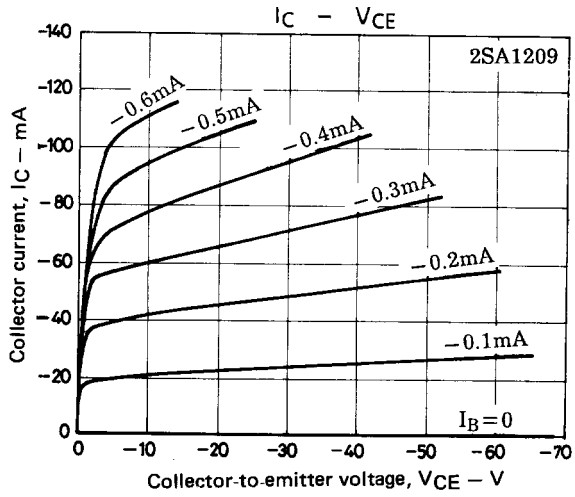
Package Dimensions

unit:mm

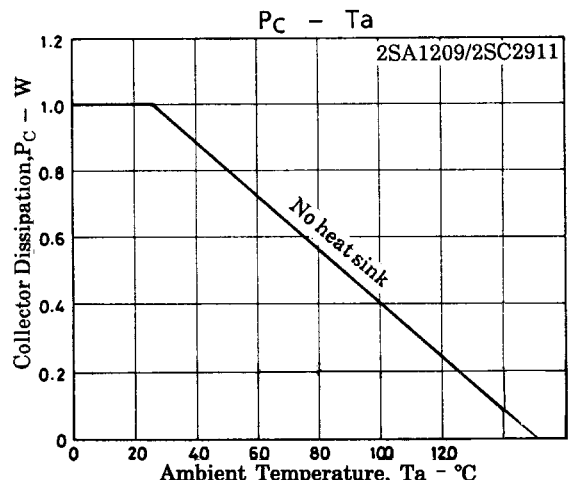
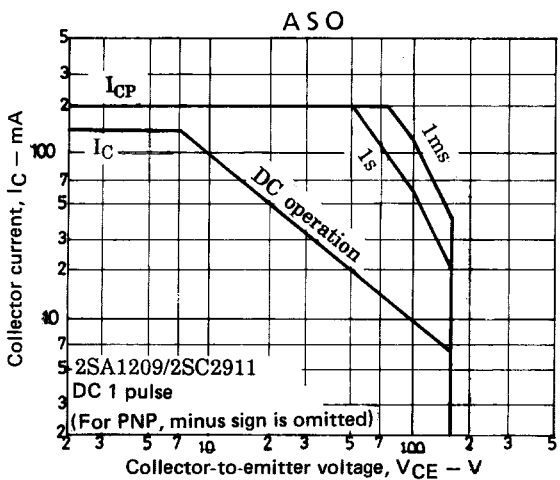
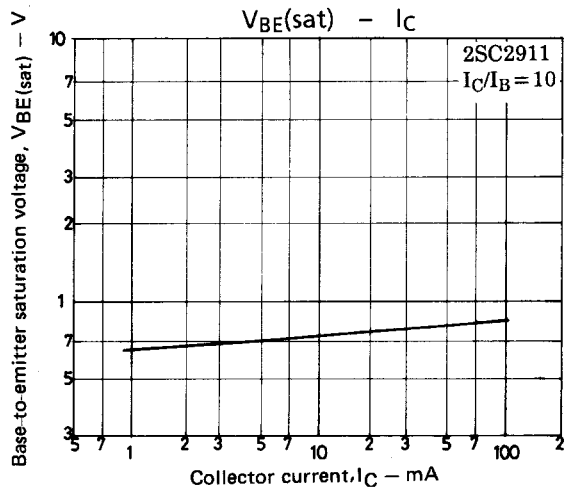
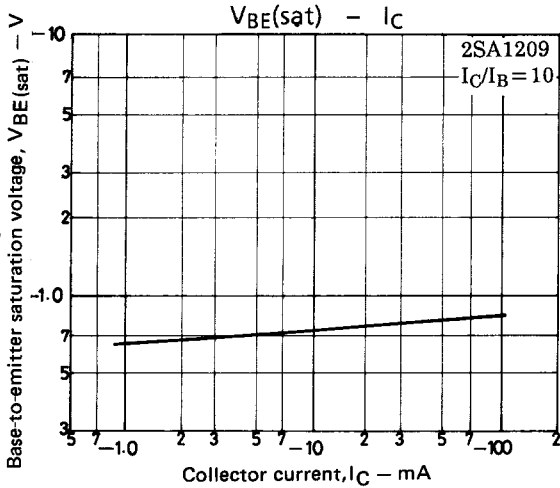
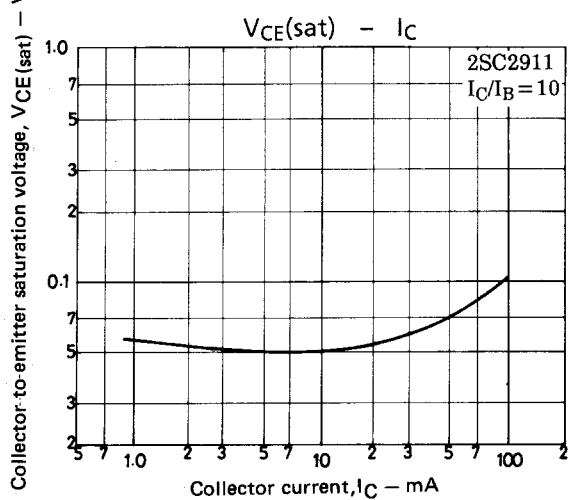
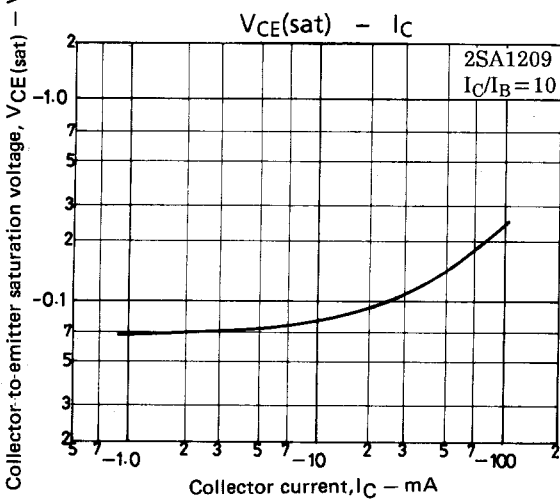
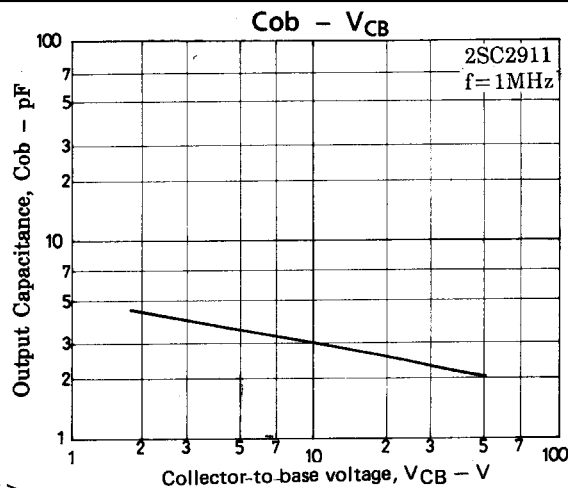
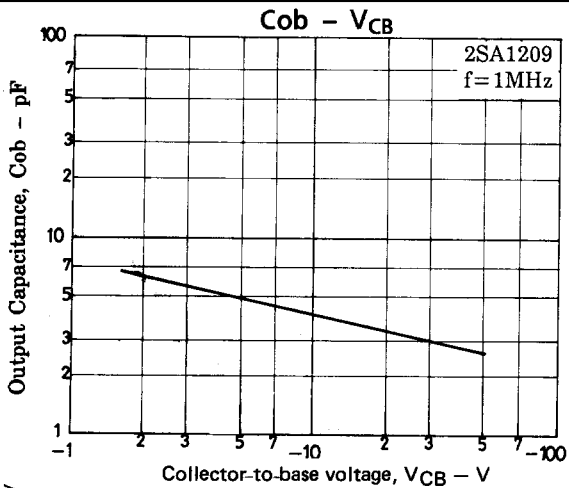
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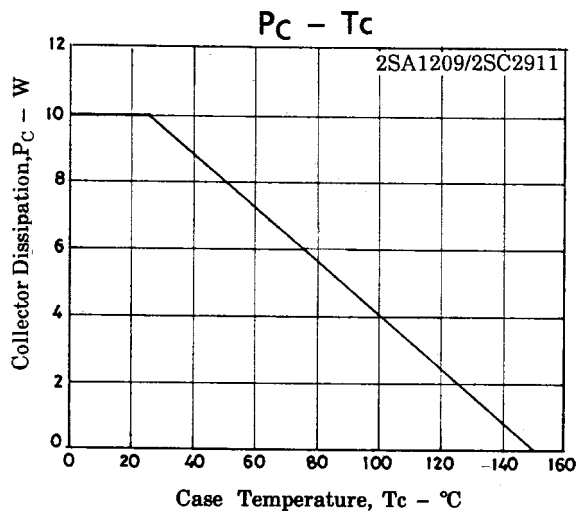
2SA1209/2SC2911



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