

**SANYO**

No.779C

**2SA1209/2SC2911**

PNP/NPN Epitaxial Planar Silicon Transistors  
**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

( ) : 2SA1209

**Maximum Ratings/ $T_a = 25^\circ\text{C}$**

			unit
Collector-to-base voltage	$V_{CBO}$	(-)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
		$T_c = 25^\circ\text{C}$	
Junction temperature	$T_j$	10	W
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

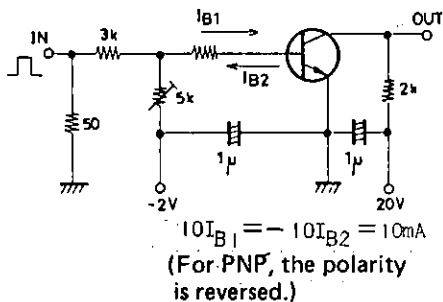
**Electrical Characteristics/ $T_a = 25^\circ\text{C}$**

			min	typ	max	unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = (-)80, I_E = 0$			(-)0.1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = (-)4\text{ V}, I_C = 0$			(-)0.1	$\mu\text{A}$
Common emitter DC current gain	$h_{FE}$	$V_{CE} = (-)5\text{ V}, I_C = (-)10\text{ mA}$	100*		400*	
Gain-band width product	$f_T$	$V_{CE} = (-)10\text{ V}, I_C = (-)10\text{ mA}$		150		MHz
Common base output capacitance	$C_{ob}$	$V_{CB} = (-)10\text{ V}, f = 1\text{ MHz}$		(4.0)		pF
				3.0		
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = (-)50\text{ mA}, I_B = (-)5\text{ mA}$	(-0.14)	(-0.4)		V
			0.07	0.3		
Turn-on time	$T_{on}$	See specified test circuit.		0.1		$\mu\text{s}$
Storage time	$t_{stg}$	See specified test circuit.		1.5		$\mu\text{s}$
Fall time	$t_f$	See specified test circuit.		0.1		$\mu\text{s}$

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

100 R	200	140 S	280	200 T	400
-------	-----	-------	-----	-------	-----

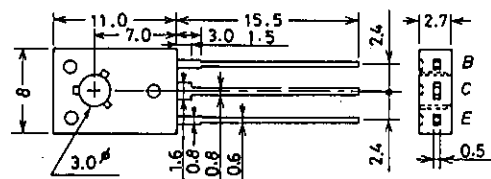
**Switching Time Test Circuit**



Unit (resistance:  $\Omega$ , capacitance: F)

**Package Dimensions 2009A**

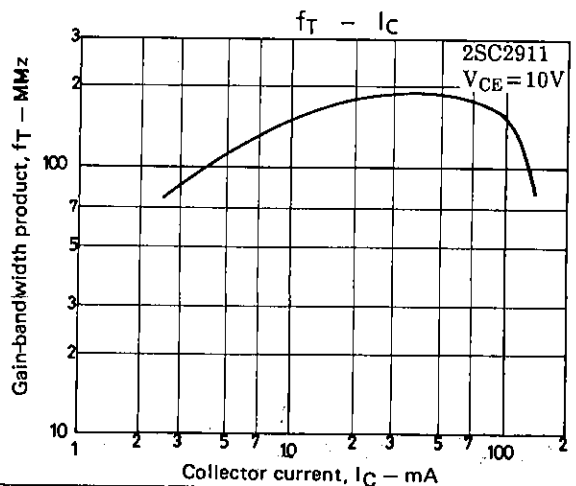
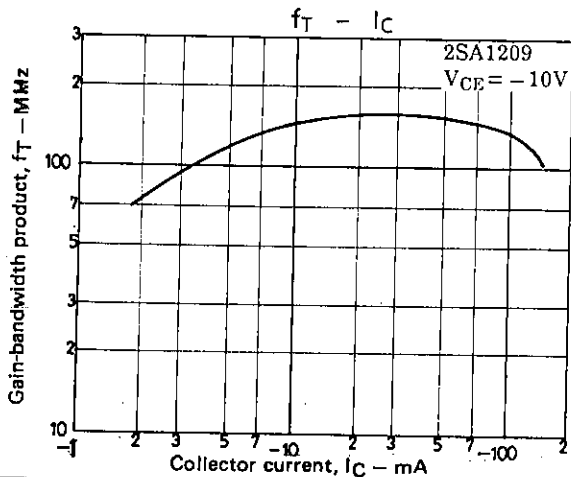
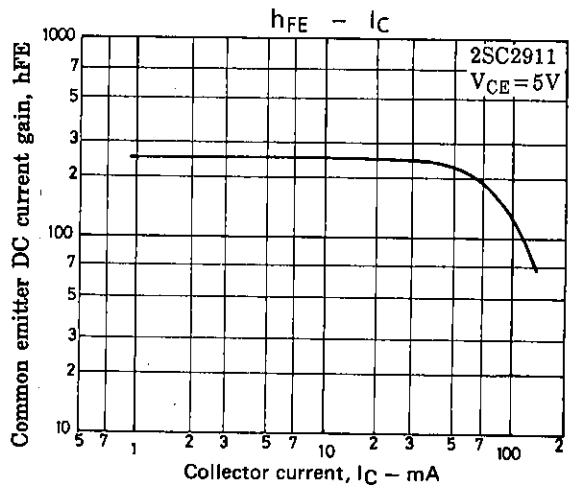
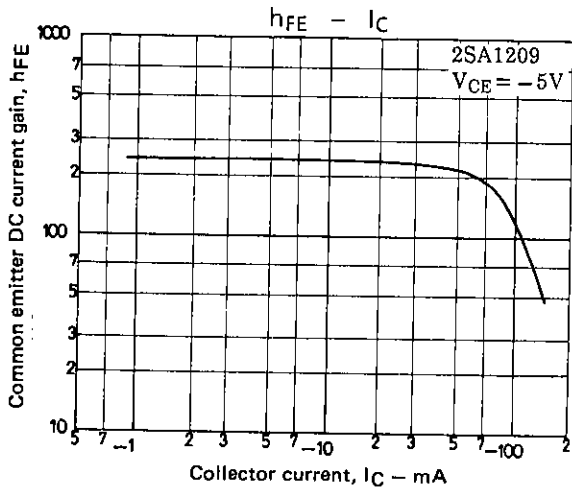
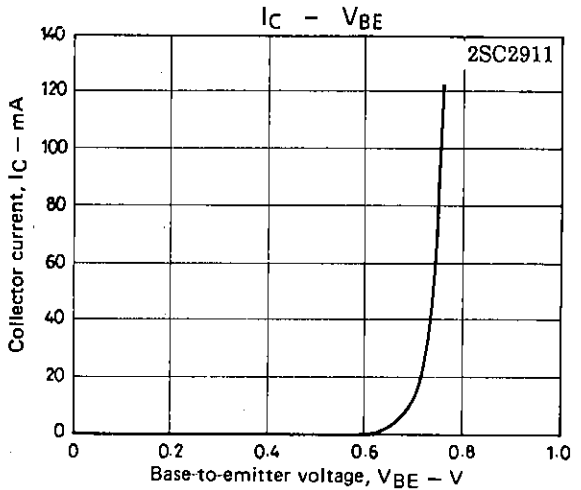
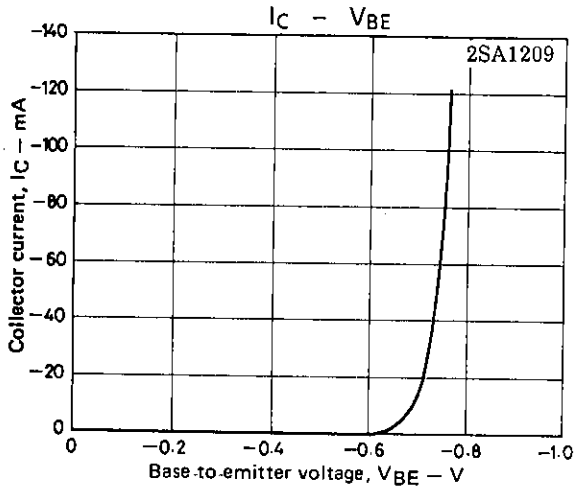
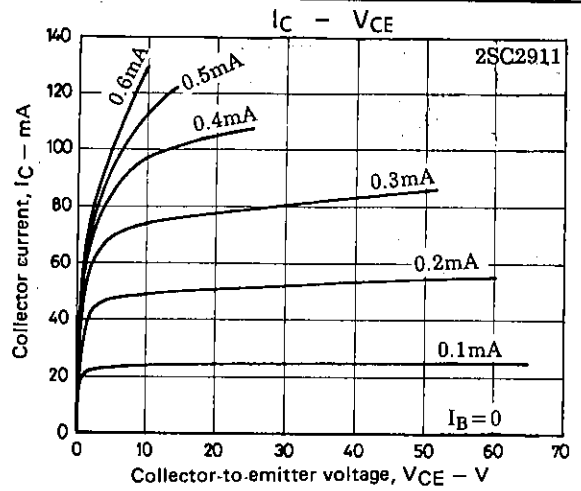
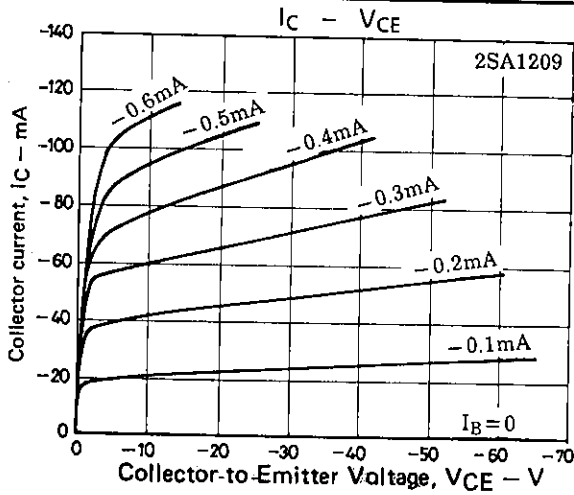
(unit: mm)



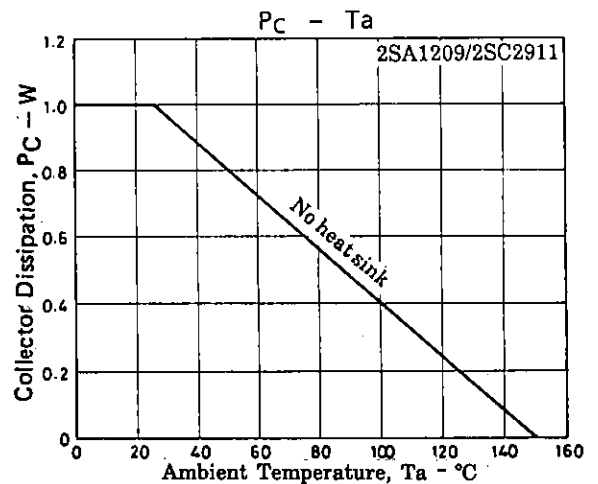
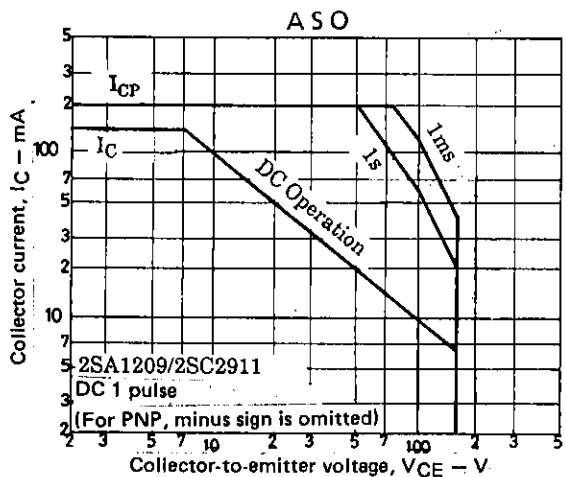
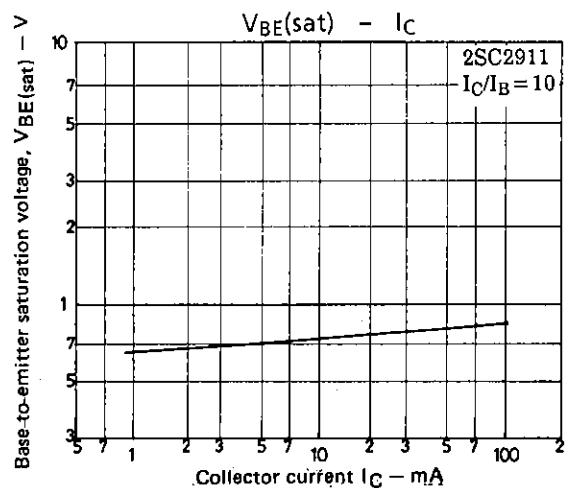
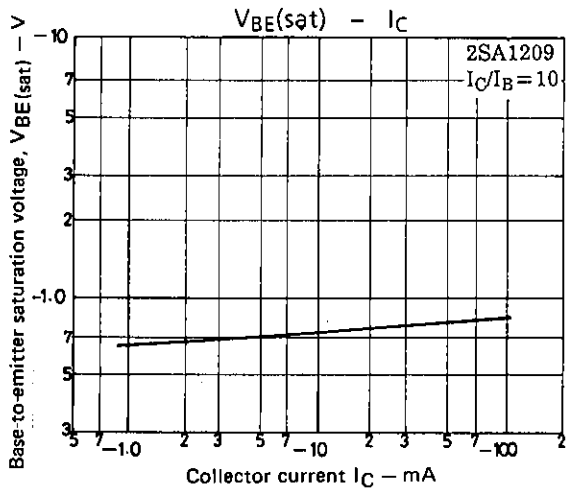
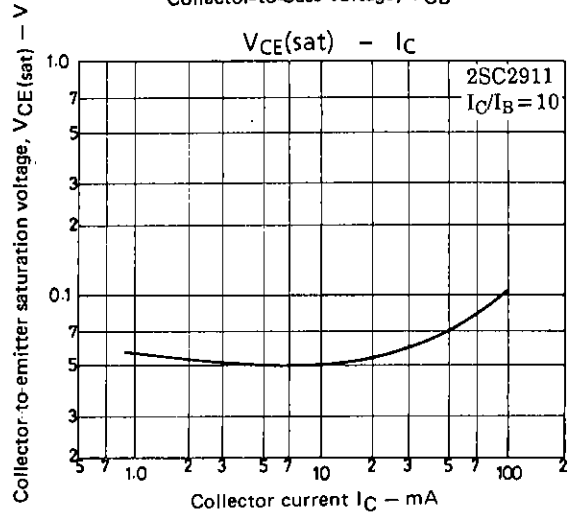
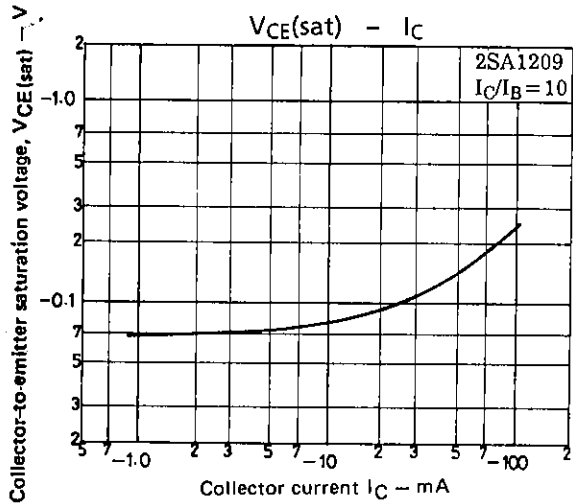
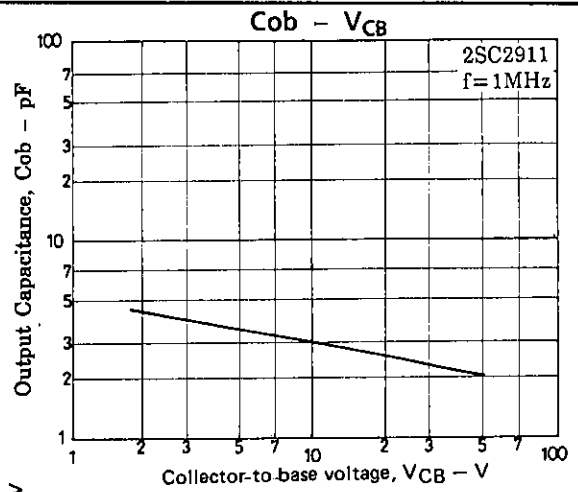
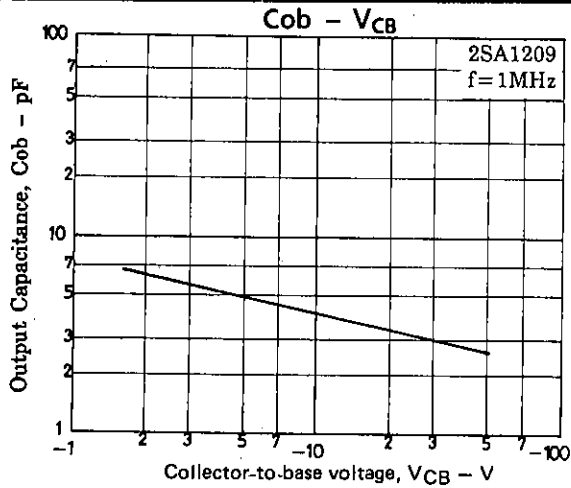
JEDEC: TO-126

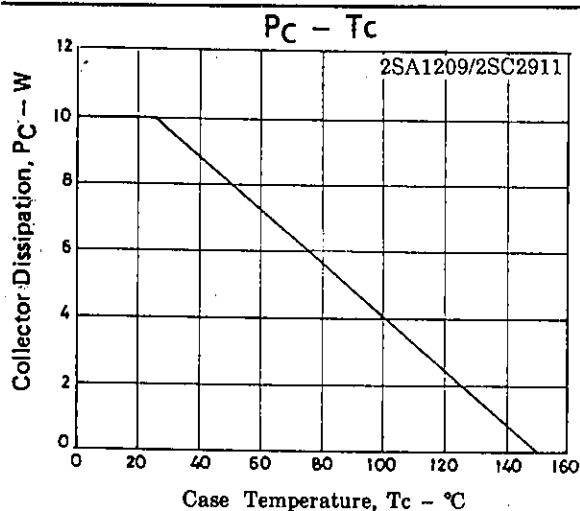
B: Base  
 C: Collector  
 E: Emitter

2SA1209/2SC2911



2SA1209/2SC2911





- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.