



FX509

PNP Epitaxial Planar Silicon Transistor

High-Current Switching Applications

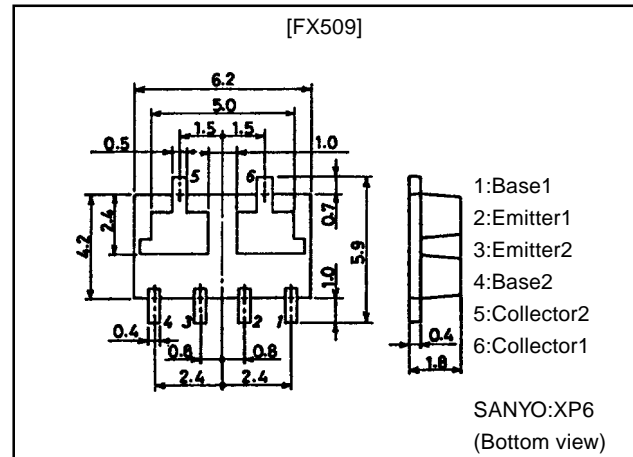
Features

- Composite type with 2PNP transistors contained in one package, facilitating high-density mounting.
- The FX509 houses two chips, each being equivalent to the 2SB1215, in one package.
- Matched pair characteristics.

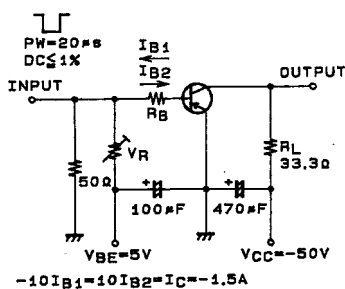
Package Dimensions

unit:mm

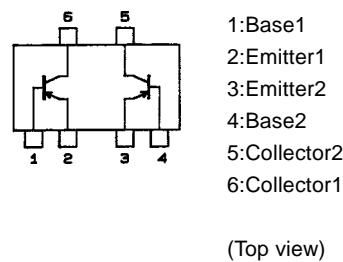
2118



Switching Time Test Circuit



Electrical Connection



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-120	V
Collector-to-Emitter Voltage	V_{CE0}		-100	V
Emitter-to-Base Voltage	V_{EB0}		-6	V
Collector Current	I_C		-3	A
Collector Current (Pulse)	I_{CP}		-6	A
Base Current	I_B		-0.6	A
Collector Dissipation	P_C	Mounted on ceramic board (750mm ² ×0.8mm) 1unit	1.5	W
Total Dissipation	P_T	Mounted on ceramic board (750mm ² ×0.8mm)	2	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

· Marking:509

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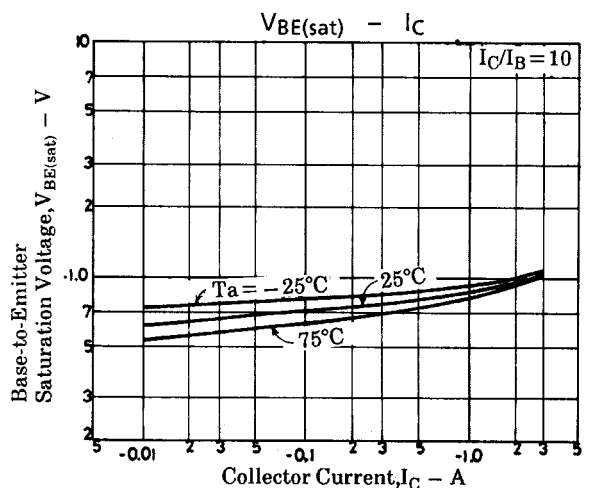
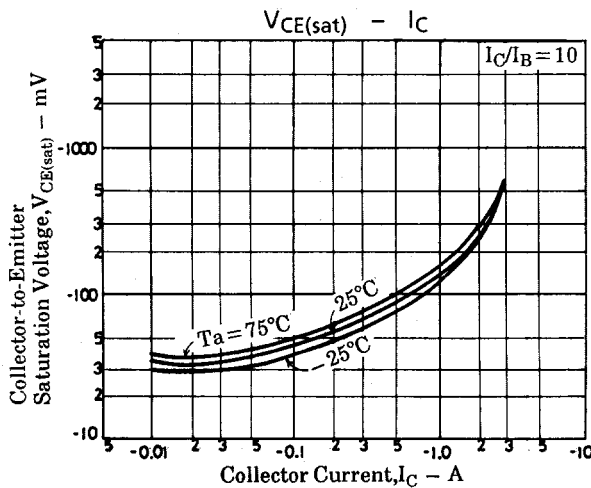
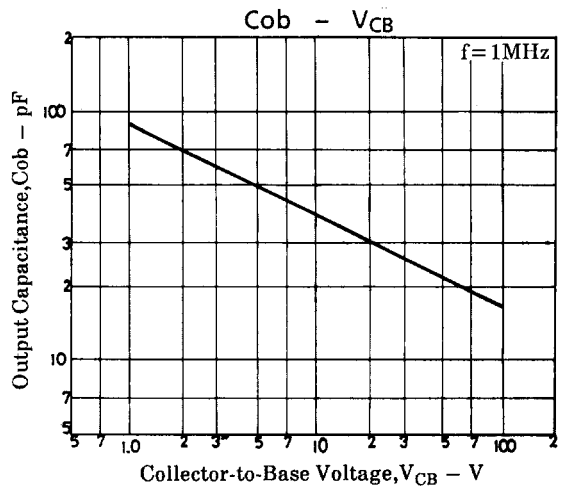
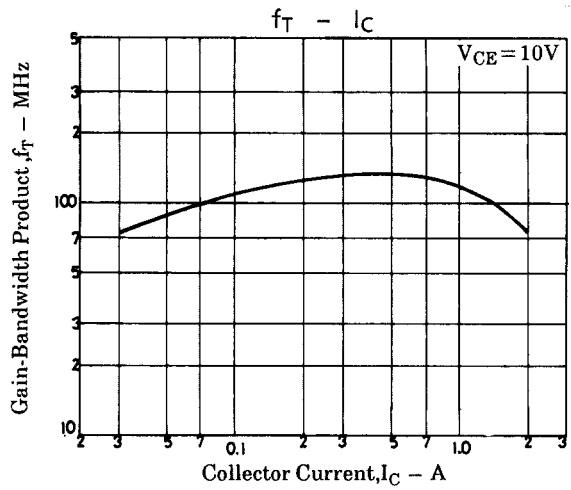
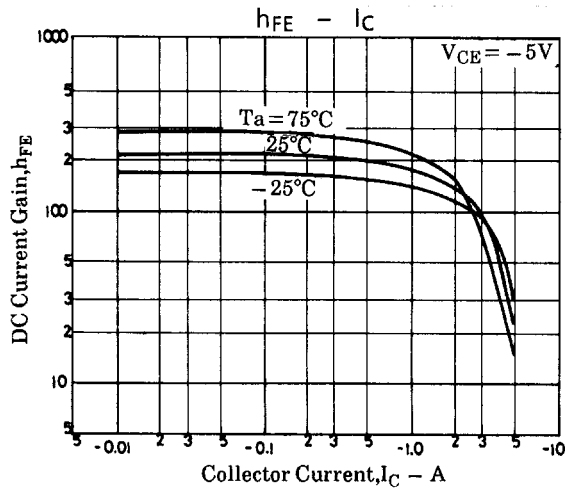
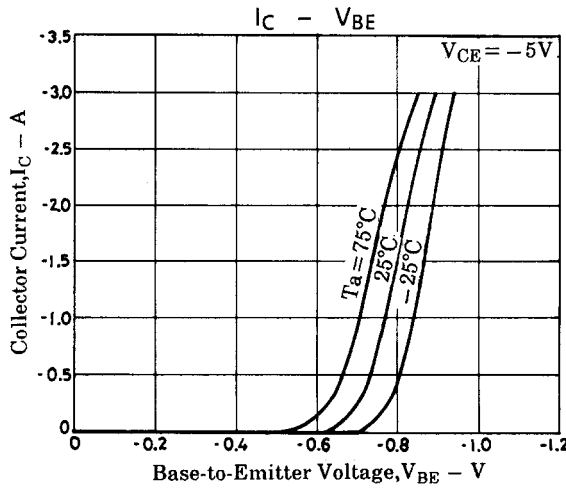
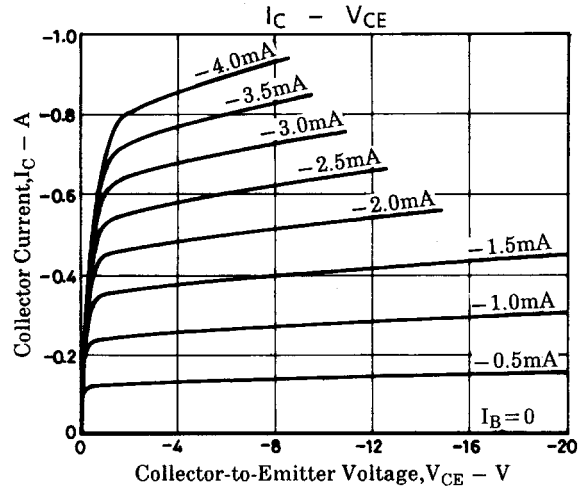
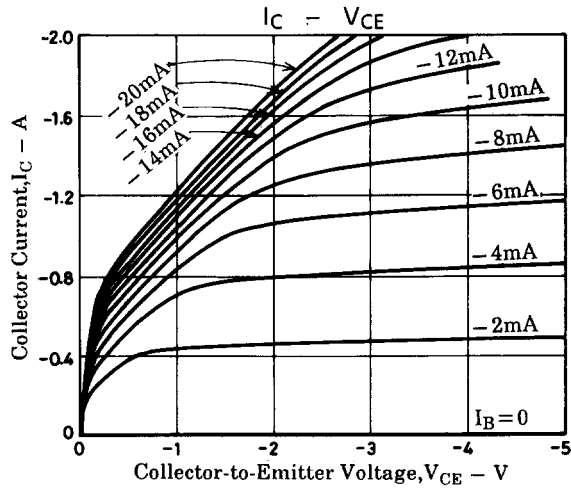
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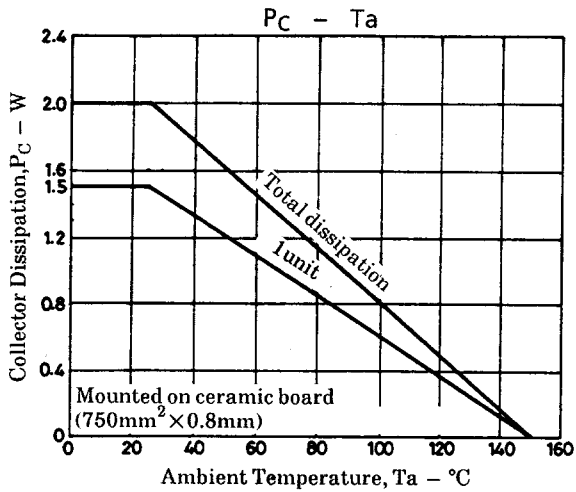
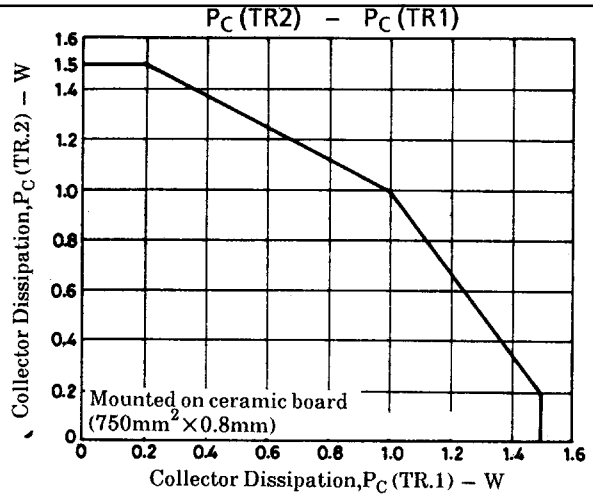
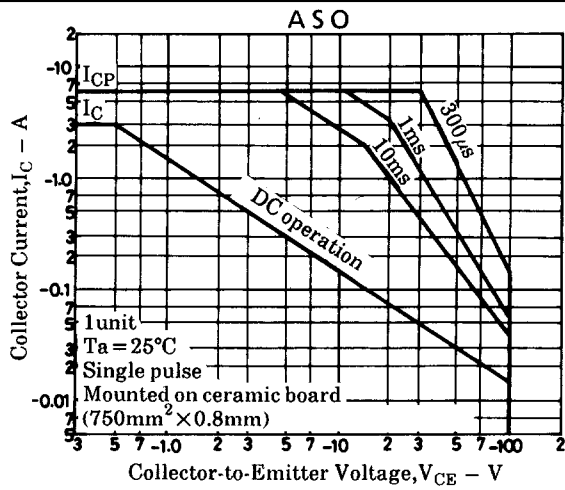
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-100V, I_E=0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4V, I_C=0$			-1	μA
DC Current Gain	h_{FE1}	$V_{CE}=-5V, I_C=-500\text{mA}$	140		400	
	h_{FE2}	$V_{CE}=-5V, I_C=-2A$	40			
DC Current Gain Ratio	$h_{FE}(\text{small/large})$	$V_{CE}=-5V, I_C=-500\text{mA}$	0.8			
Gain-Bandwidth Product	f_T	$V_{CE}=-5V, I_C=-500\text{mA}$		180		MHz
Output Capacitance	Cob	$V_{CB}=-10V, f=1\text{MHz}$		40		pF
C-E Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=-1.5A, I_B=-150\text{mA}$		-200	-500	mV
B-E Saturation Voltage	$V_{BE}(\text{sat})$	$I_C=-1.5A, I_B=-150\text{mA}$		-0.9	-1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-120			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-100			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-6			V
Turn-ON Time	t_{on}	See sepcified Test Circuit		100		ns
Storage Time	t_{stg}	See sepcified Test Circuit		800		ns
Fall Time	t_f	See sepcified Test Circuit		50		ns

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