



FX504

NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

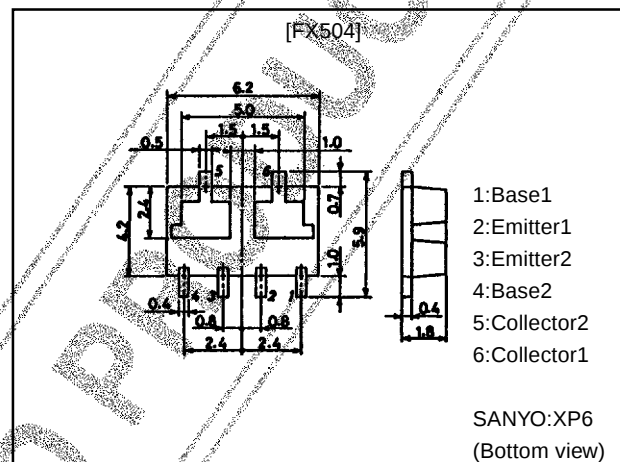
Features

- Composite type with 2 NPN transistors contained in one package, facilitating high-density mounting.
- The FX504 houses two chips, each being equivalent to the 2SD1802, in one package.
- Matched pair characteristics.

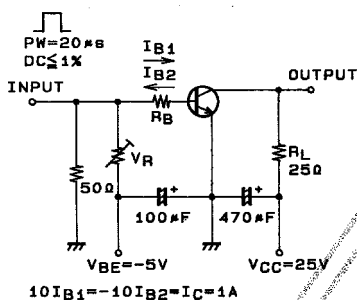
Package Dimensions

unit:mm

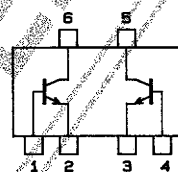
2118



Switching Time Test Circuit



Electrical Connection



- 1:Base1
- 2:Emitter1
- 3:Emitter2
- 4:Base2
- 5:Collector2
- 6:Collector1

(Top view)

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		6	A
Base Current	I_B		600	mA
Collector Dissipation	P_C	Mounted on ceramic board (750mm ² ×0.8mm) 1 unit	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:504

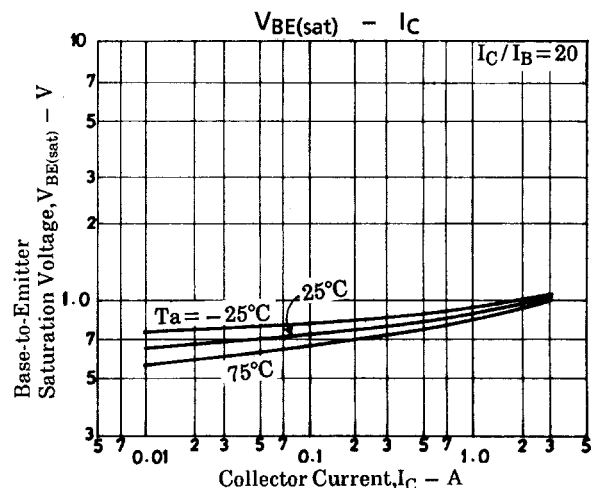
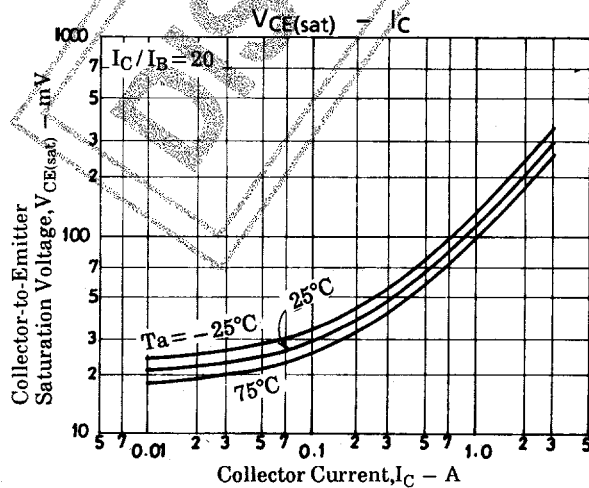
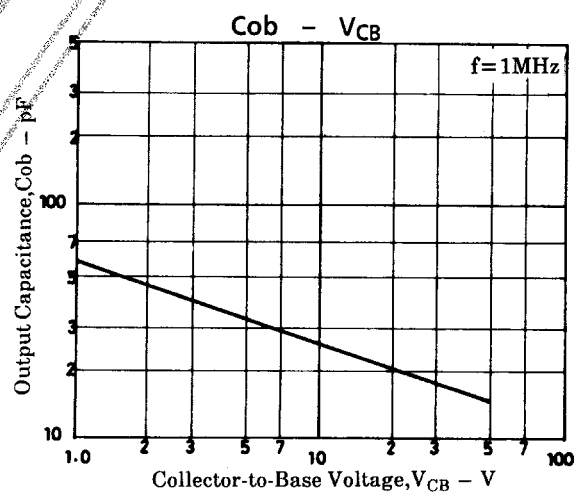
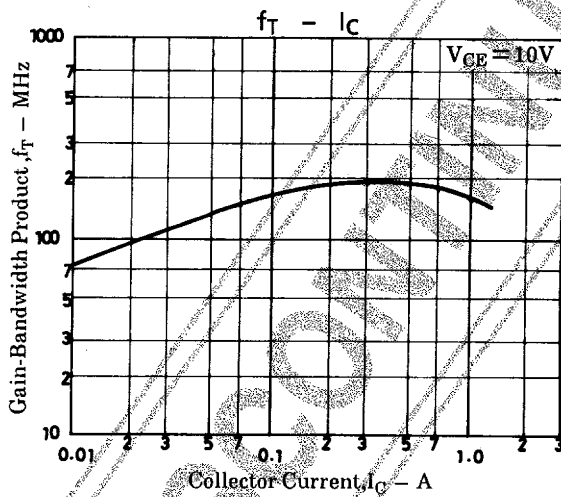
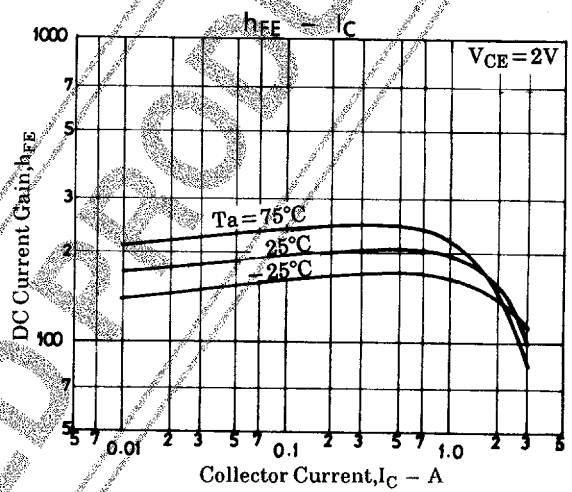
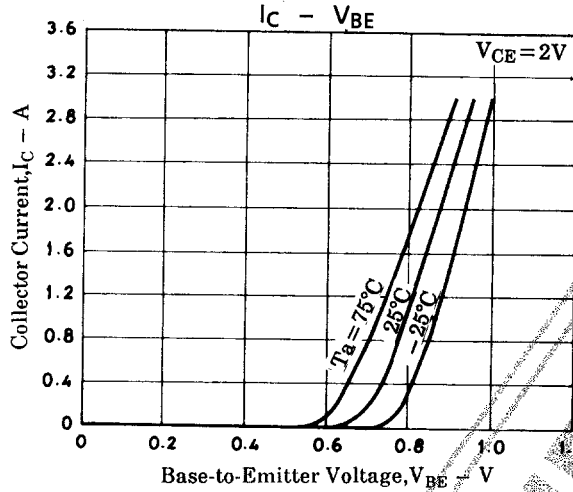
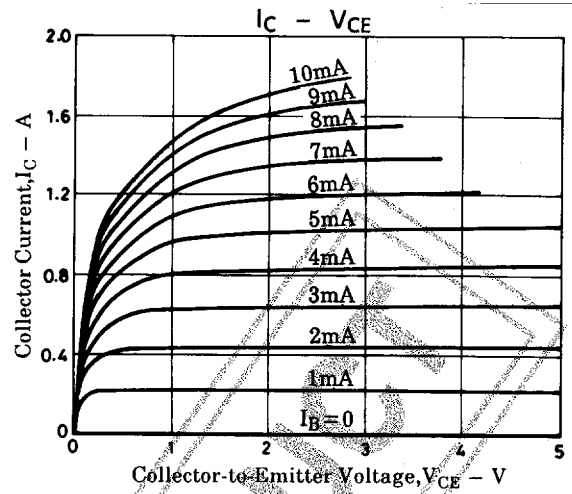
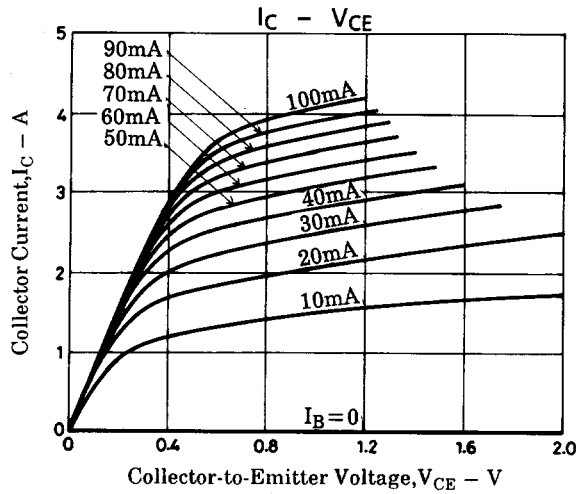
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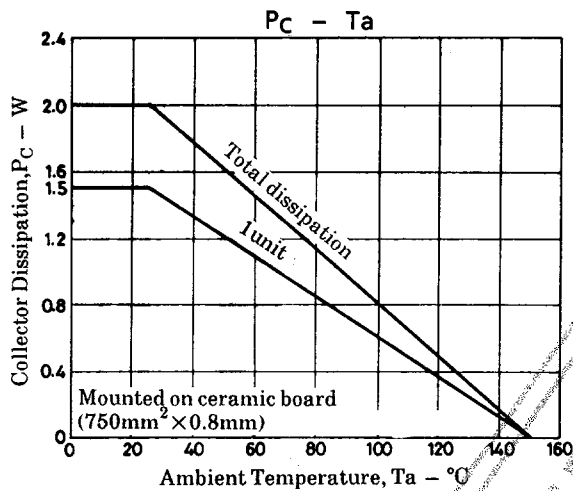
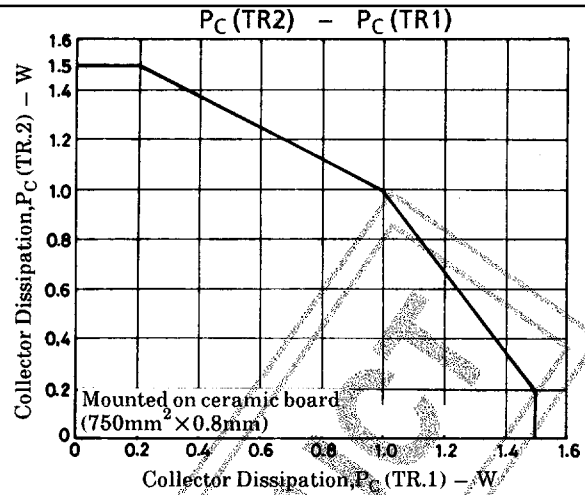
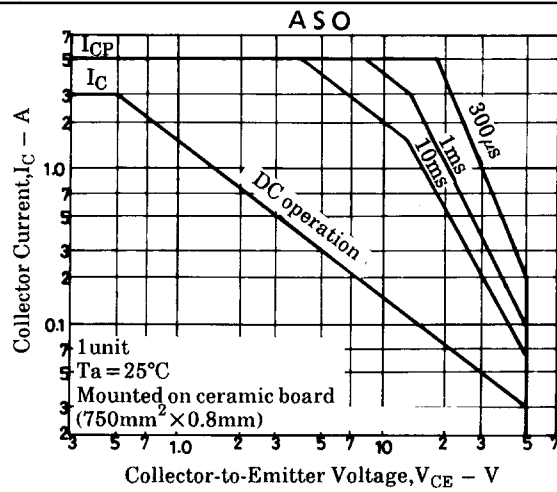
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Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			1	μA
DC Current Gain	h_{FE1}	$V_{CE}=2\text{V}, I_C=100\text{mA}$	140		400	
	h_{FE2}	$V_{CE}=2\text{V}, I_C=-3\text{A}$	35			
DC Current Gain Ratio	$h_{FE}(\text{small/large})$	$V_{CE}=2\text{V}, I_C=100\text{mA}$	0.8			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=100\text{mA}$		170		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		25		pF
C-E Saturation Voltage	$V_{CE(\text{sat})}$	$I_C=2\text{A}, I_B=100\text{mA}$		190	500	mV
B-E Saturation Voltage	$V_{BE(\text{sat})}$	$I_C=2\text{A}, I_B=100\text{mA}$		0.94	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	50			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 specified Test Circuit		70		ns
Storage Time	t_{stg}	See specified Test Circuit		650		ns
Fall Time	t_f	See specified Test Circuit		35		ns

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