



# FX504

NPN Epitaxial Planar Silicon Transistor

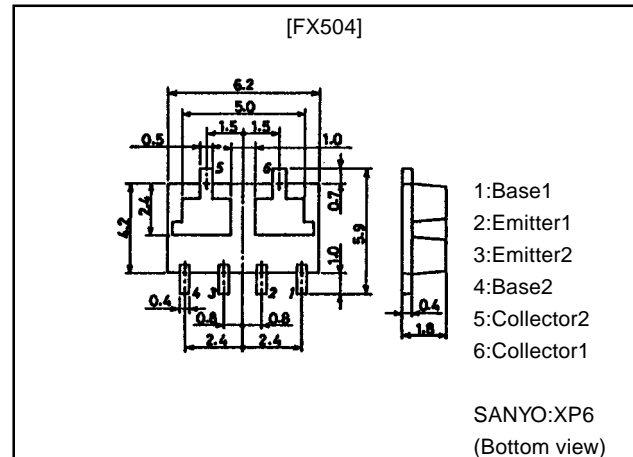
## High-Current Switching Applications

### Features

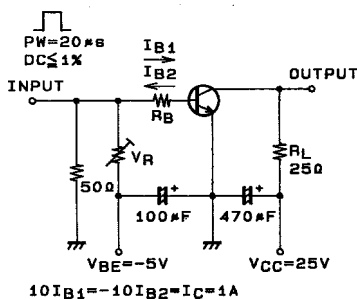
- Composite type with 2 NPN transistors contained in one package, facilitating high-density mounting.
- The FX504 houses two chips, each being equivalent to the 2SD1802, in one package.
- Matched pair characteristics.

### Package Dimensions

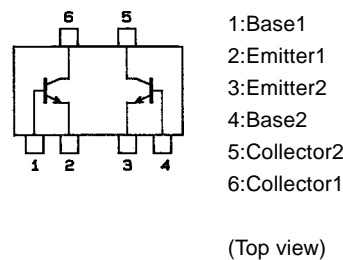
unit:mm  
2118



### Switching Time Test Circuit



### Electrical Connection



### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		60	V
Collector-to-Emitter Voltage	$V_{CE0}$		50	V
Emitter-to-Base Voltage	$V_{EB0}$		6	V
Collector Current	$I_C$		3	A
Collector Current (Pulse)	$I_{CP}$		6	A
Base Current	$I_B$		600	mA
Collector Dissipation	$P_C$	Mounted on ceramic board (750mm <sup>2</sup> ×0.8mm) 1 unit	1.5	W
Total Dissipation	$P_T$	Mounted on ceramic board (750mm <sup>2</sup> ×0.8mm)	2	W
Junction Temperature	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

· Marking:504

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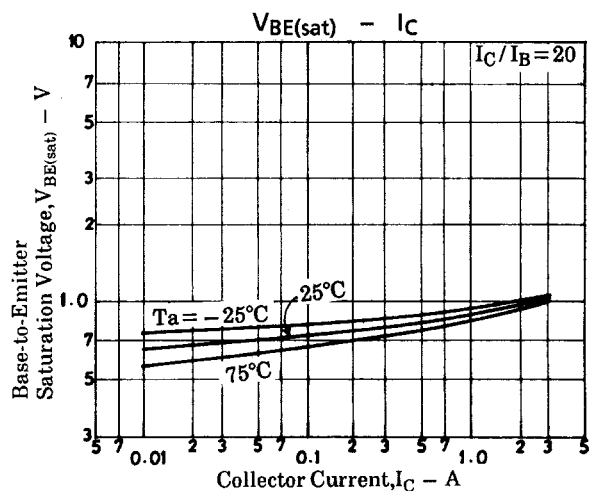
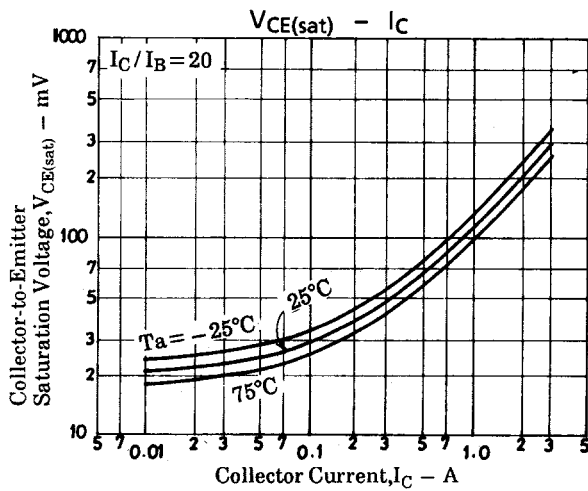
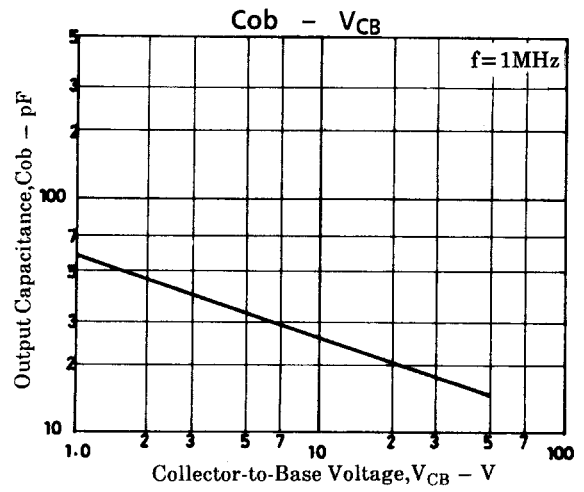
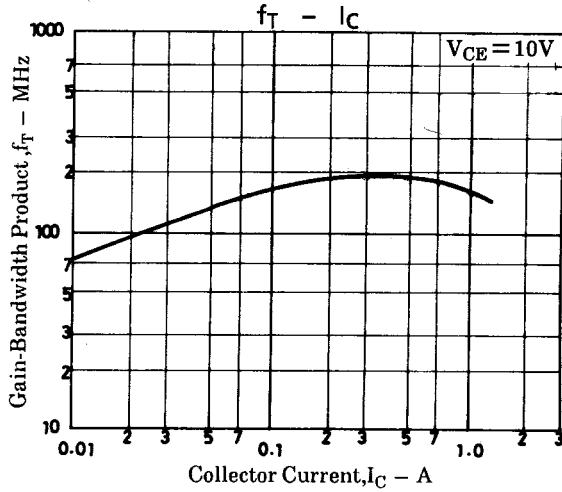
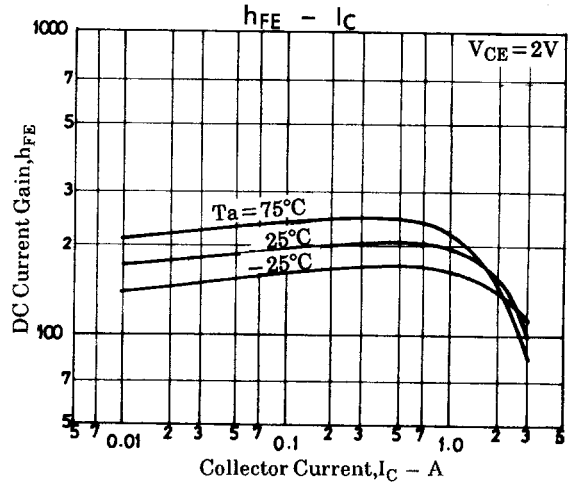
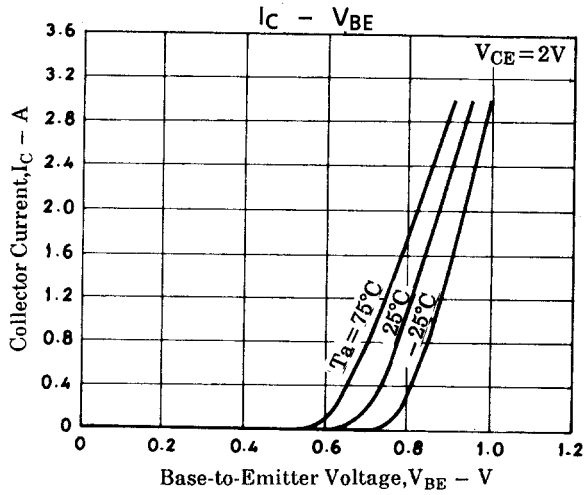
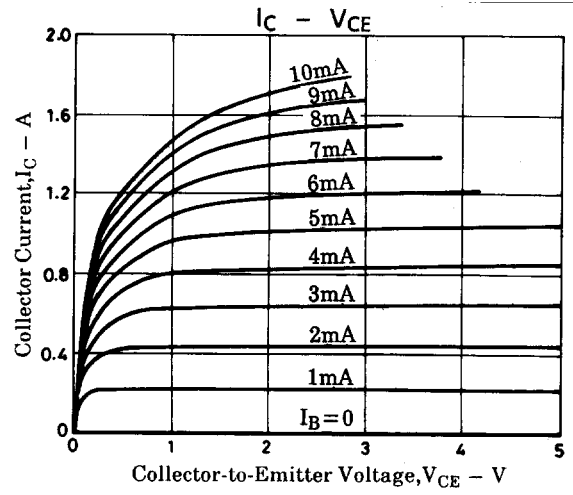
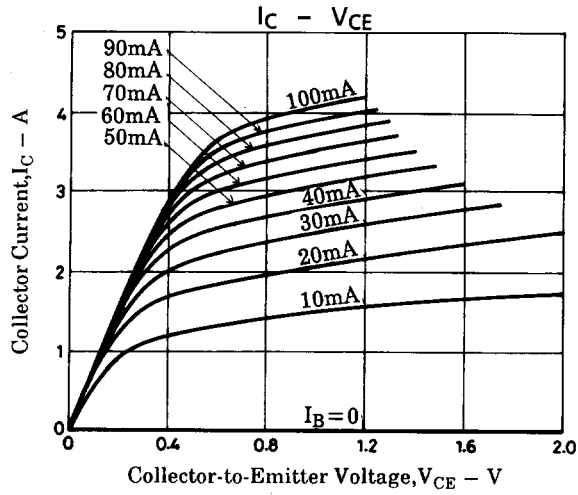
## FX504

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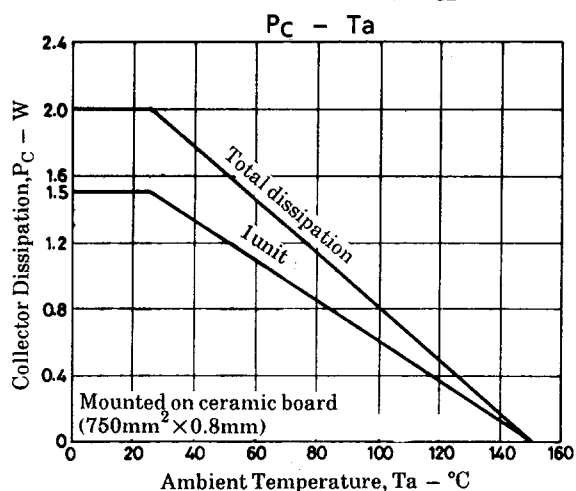
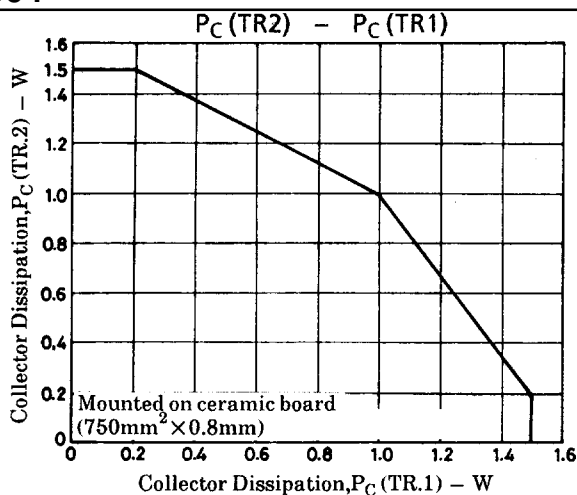
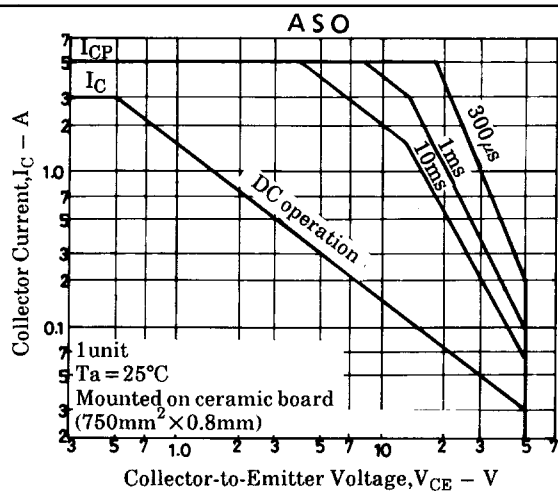
### Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			1	$\mu\text{A}$
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	Cob	$V_{CB}=10\text{V}, f=1\text{MHz}$		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 sepcified Test Circuit		70		ns
Storage Time	tstg	See sepcified Test Circuit		650		ns
Fall Time	$t_f$	See sepcified Test Circuit		35		ns

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