



FX502

NPN Epitaxial Planar Silicon Transistor

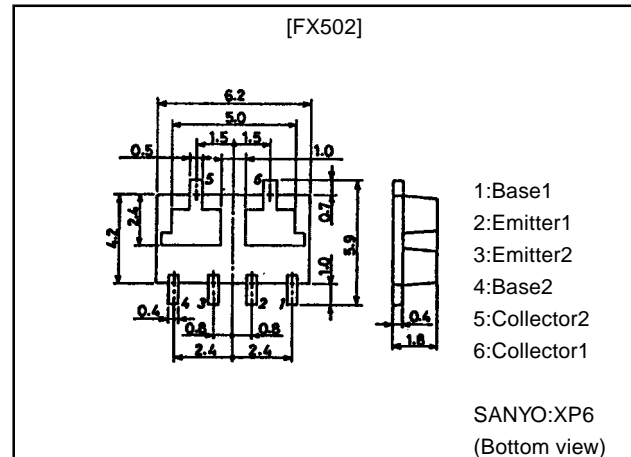
High-Current Switching Applications

Features

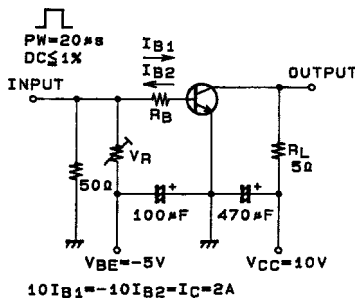
- Composite type with 2 NPN transistors contained in one package, facilitating high-density mounting.
- The FX502 houses two chips, each being equivalent to the 2SD1805, in one package.
- Matched pair characteristics.

Package Dimensions

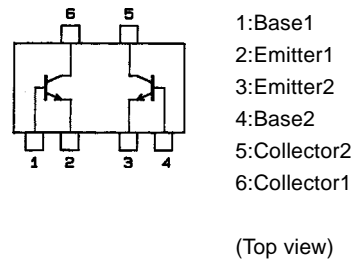
unit:mm
2118



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_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		5	A
Collector Current (Pulse)	I_{CP}		8	A
Base Current	I_B		1	A
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:502

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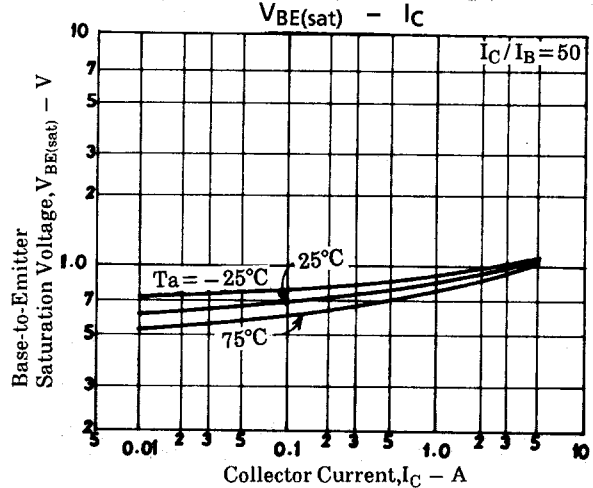
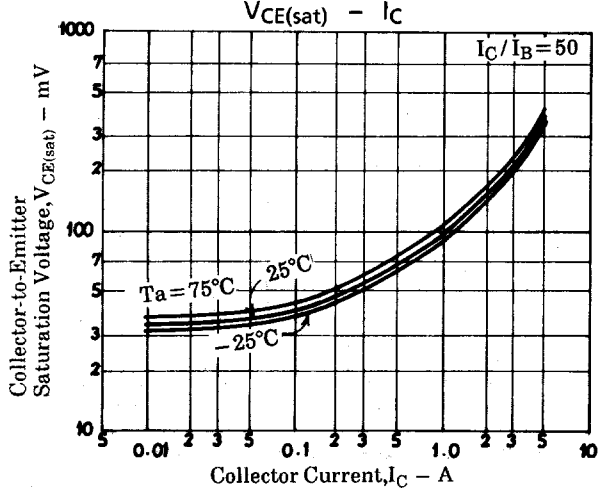
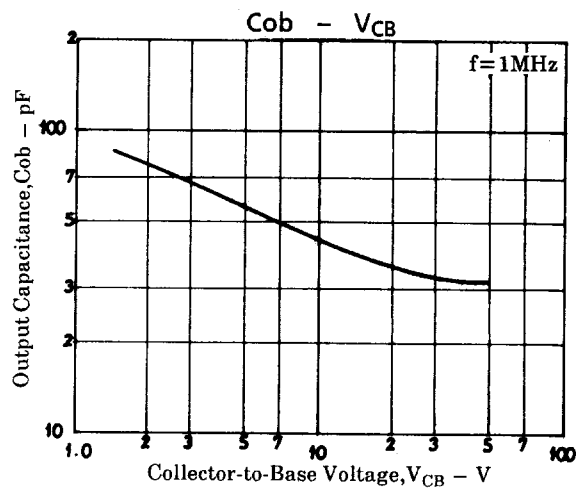
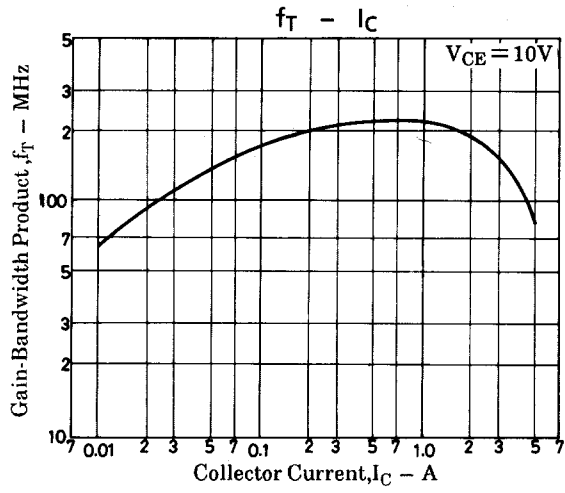
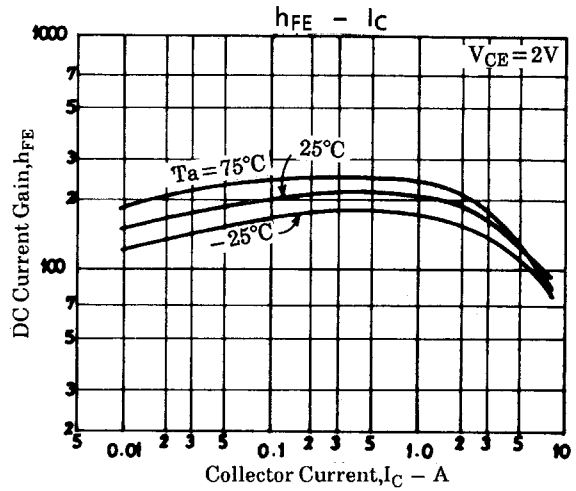
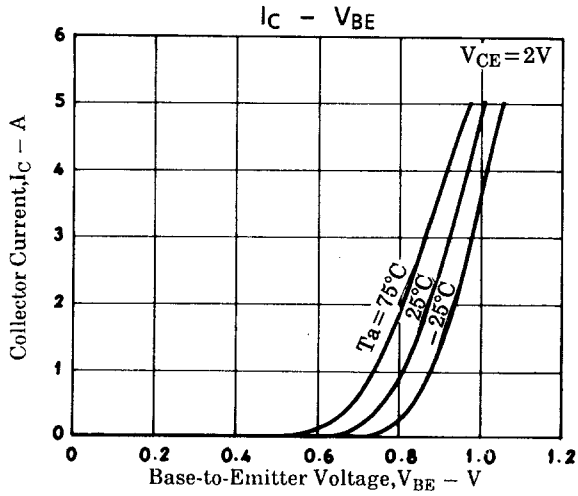
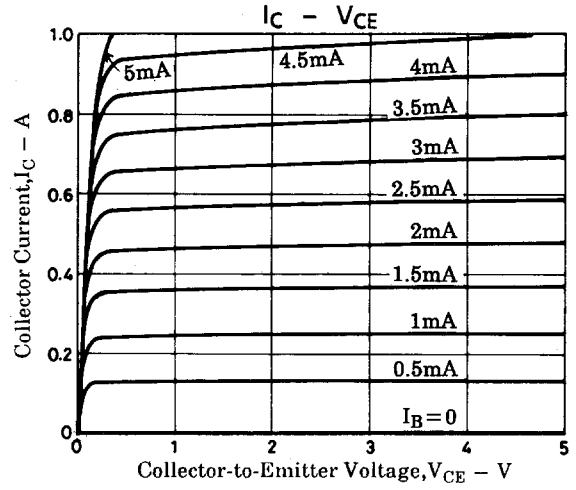
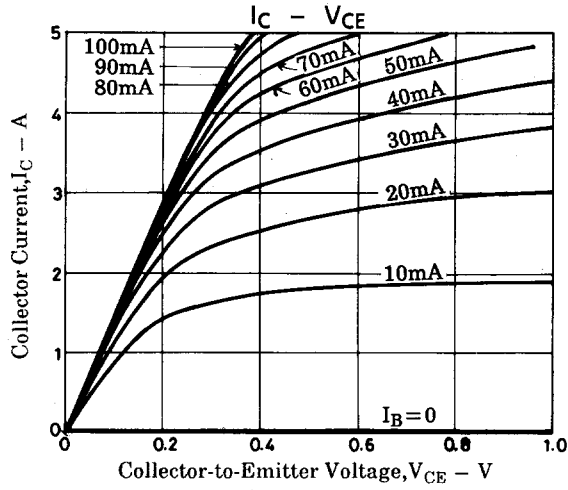
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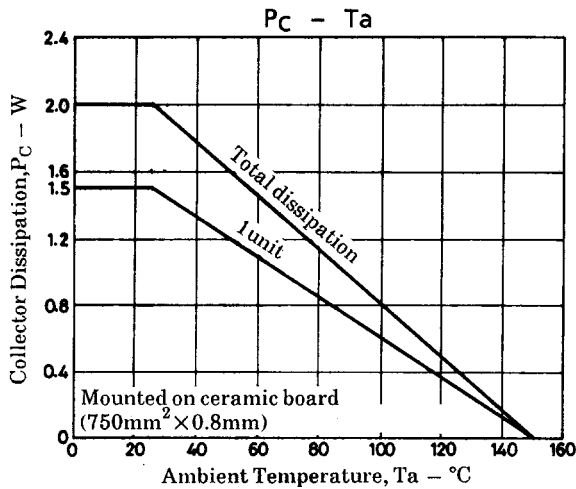
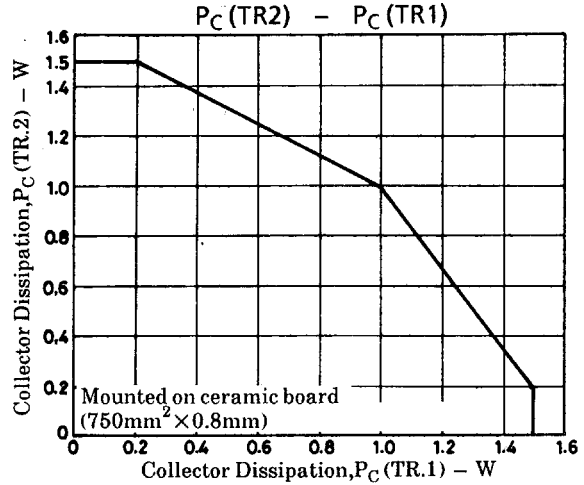
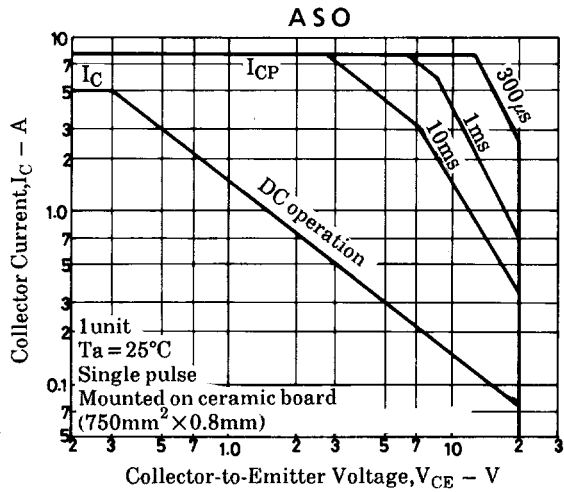
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=50\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	nA
DC Current Gain	h_{FE1}	$V_{CE}=2\text{V}, I_C=500\text{mA}$	160		560	
	h_{FE2}	$V_{CE}=2\text{V}, I_C=3\text{A}$	95			
DC Current Gain Ratio	$h_{FE}(\text{small/large})$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	0.8			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=500\text{mA}$		220		MHz
Output Capacitance	Cob	$V_{CB}=10\text{V}, f=1\text{MHz}$		45		pF
C-E Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=3\text{A}, I_B=60\text{mA}$		220	500	mV
B-E Saturation Voltage	$V_{BE}(\text{sat})$	$I_C=3\text{A}, I_B=60\text{mA}$		1.0	1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	20			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		30		ns
Storage Time	tstg	See specified Test Circuit		300		ns
Fall Time	t_f	See specified Test Circuit		40		ns

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