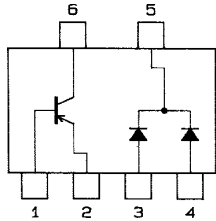


**FX802**

TR:PNP Epitaxial Planar Silicon Transistor  
 SBD:Schottky Barrier Diode (Twin type · Cathode Common)

**DC-DC Converter****Features**

- Complex type of a low saturation voltage, high speed switching and large current PNP transistor and a fast recovery and low forward voltage Schottky barrier diode facilitating high-density mounting.
- The FX802 is composed of 2 chips, one being equivalent to the 2SB1302 and the other the SB20W03P, placed in one package.

**Electrical Connection**

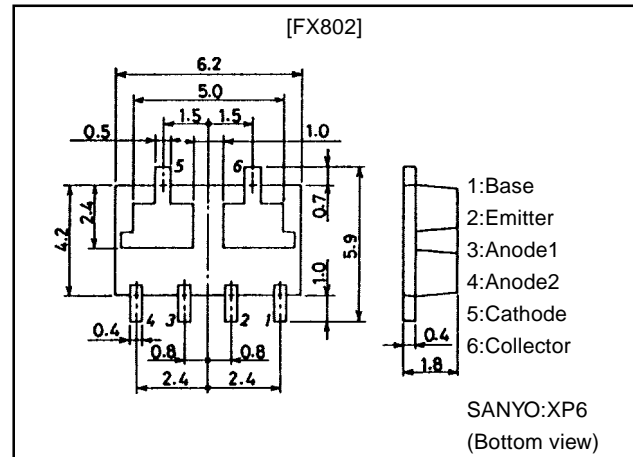
- 1:Base  
 2:Emitter  
 3:Anode1  
 4:Anode2  
 5:Cathode  
 6:Collector

(Top view)

**Package Dimensions**

unit:mm

2126

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	$V_{CBO}$		-25	V
Collector-to-Emitter Voltage	$V_{CEO}$		-20	V
Emitter-to-Base Voltage	$V_{EBO}$		-5	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 <sup>2</sup> ×0.8mm) 1 unit	1.5	W
Junction Temperature	$T_J$		150	°C
[SBD]				
Repetitive Peak Reverse Voltage	$V_{RRM}$		30	V
Non-repetitive Peak Reverse Surge Voltage	$V_{RSM}$		35	V
Average Rectified Current	$I_O$		2	A
	$I_O$	(Total)	4	A
Surge Forward Current	$I_{FSM}$	50Hz sine wave, 1 cycle	10	A
Junction Temperature	$T_J$		-55 to +125	°C
Storage Temperature	$T_{stg}$		-55 to +125	°C

· Marking:802

Continued on next page.

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52098HA (KT)/41095TS (KOTO) TA-0134 No.5052-1/4

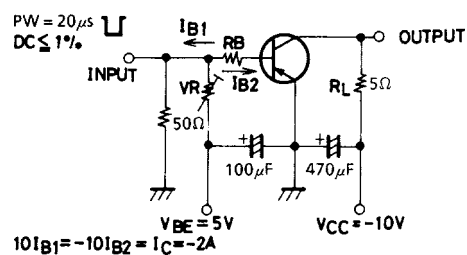
# FX802

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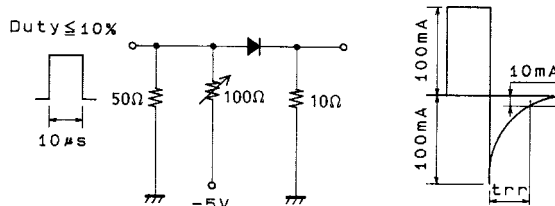
## Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-20V, I_E=0$			-500	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4V, I_C=0$			-500	nA
DC Current Gain	$h_{FE1}$	$V_{CE}=-2V, I_C=-500mA$	140		400	
	$h_{FE2}$	$V_{CE}=-2V, I_C=-4A$	60			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-5V, I_C=-200mA$		320		MHz
Output Capacitance	$C_{ob}$	$V_{CE}=-10V, f=1MHz$		60		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-3A, I_B=-60mA$		-250	-500	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-3A, I_B=-60mA$		-1.0	-1.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-25			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_E=-1mA, R_{BE}=\infty$	-20			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-5			V
Turn-ON Time	$t_{on}$	See sepcified Test Circuit		40		ns
Storage Time	$t_{stg}$	See sepcified Test Circuit		200		ns
Fall Time	$t_f$	See sepcified Test Circuit		10		ns
[SBD] (Value per element)						
Reverse Voltage	$V_R$	$I_R=500\mu A$	30			V
Forward Voltage	$V_F$	$I_F=2A$			0.55	V
Reverse Current	$I_R$	$V_R=15V$			100	$\mu A$
Interterminal Capacitance	$C$	$V_R=10V, f=1MHz$		70		pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=100mA$ , See specified Test Circuit			20	ns
Thermal Resistance	$R_{thj-a}$	Mounted on ceramic board (750mm <sup>2</sup> ×0.8mm)		85		°C/W

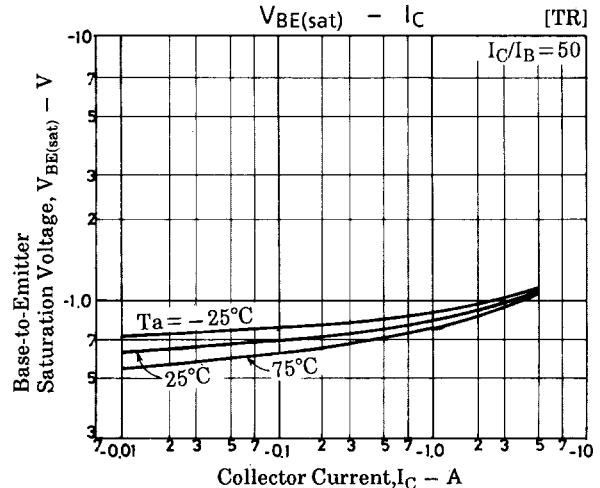
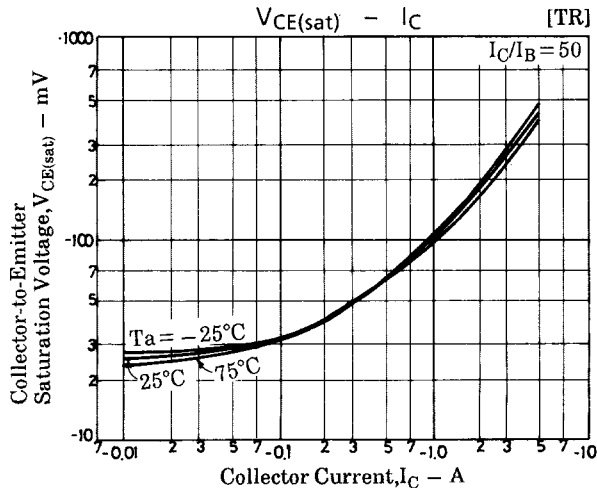
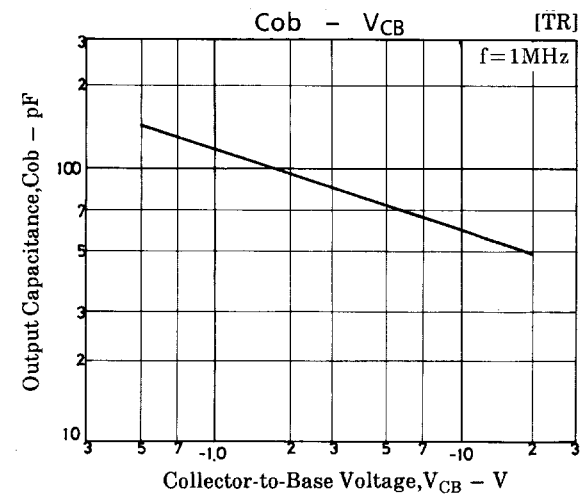
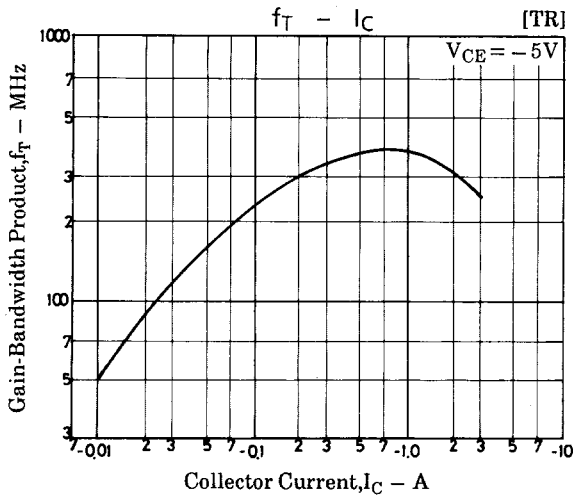
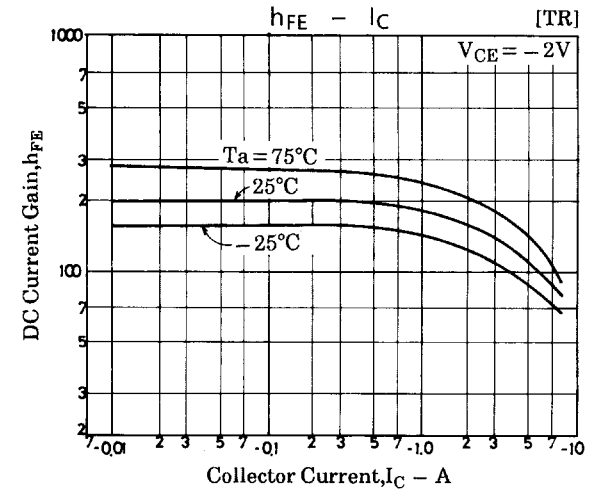
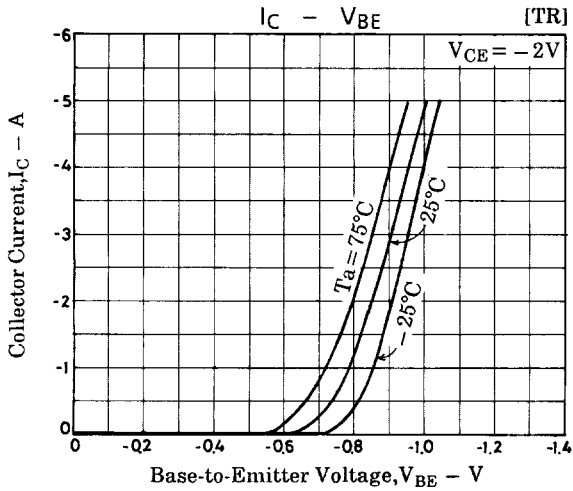
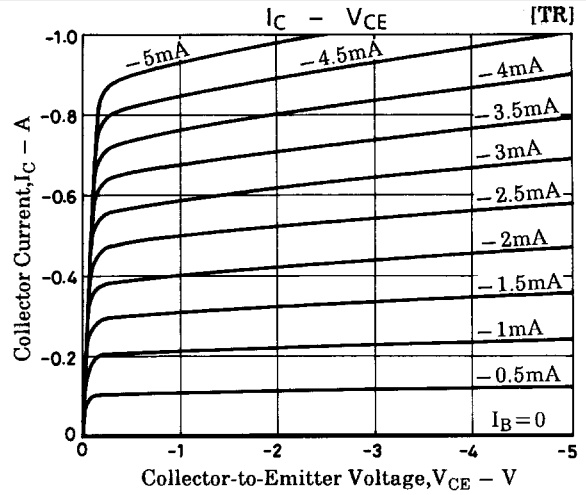
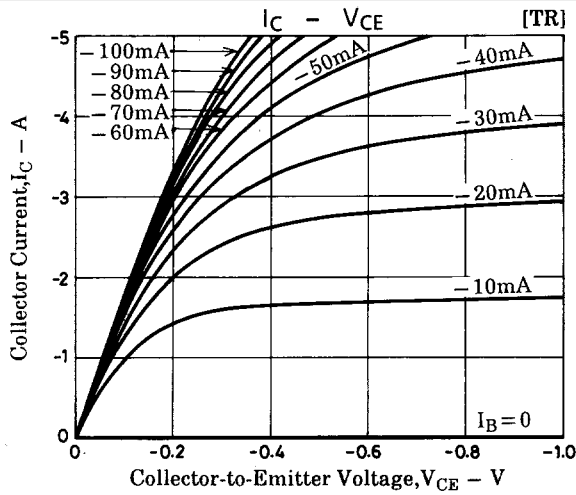
### Switching Time Test Circuit



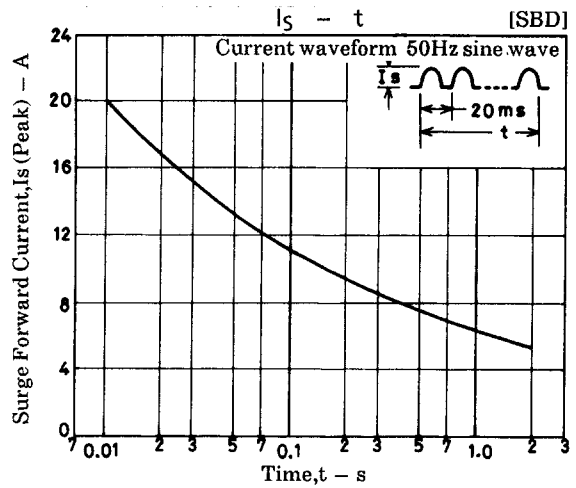
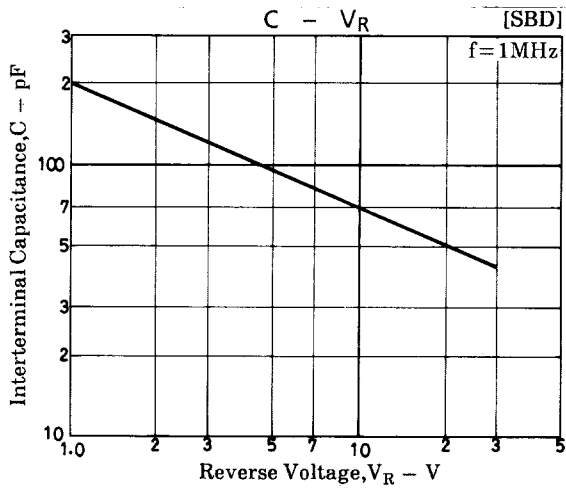
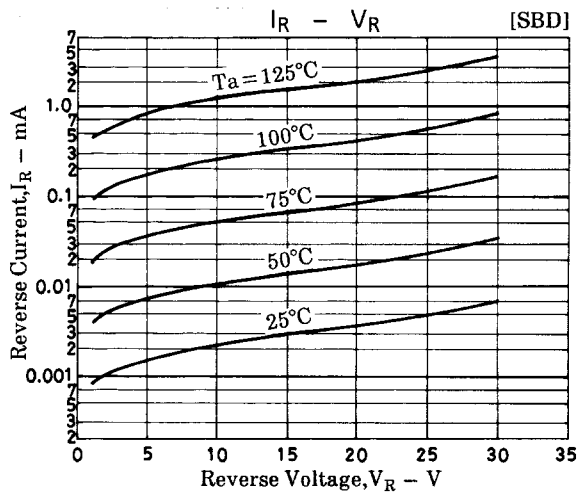
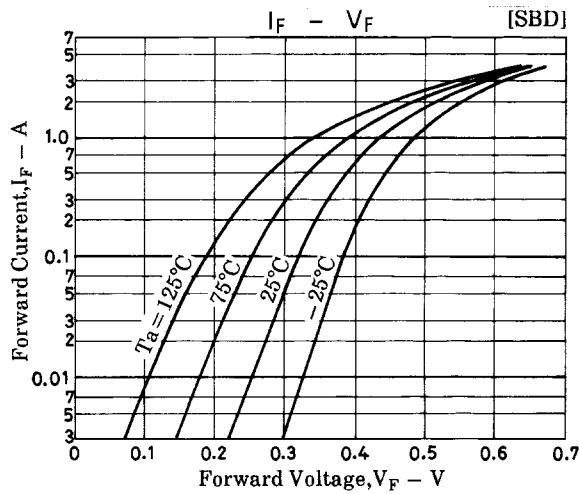
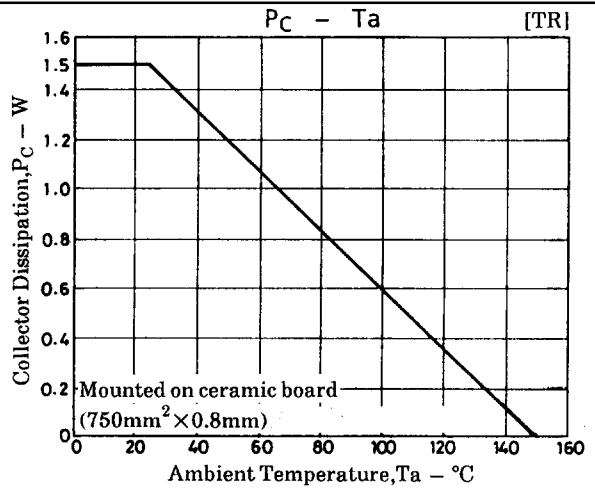
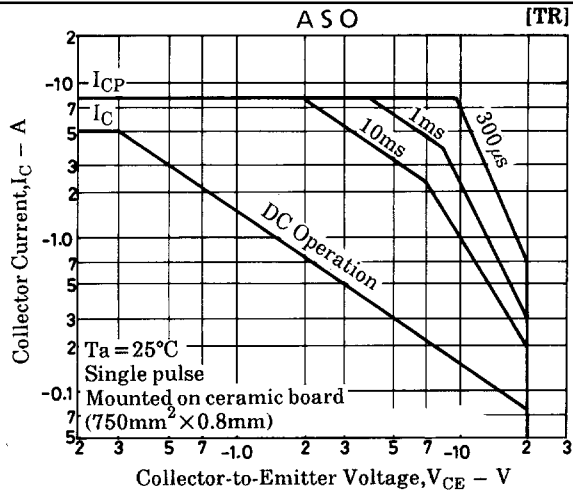
### Trr Test Circuit



# FX802



# FX802



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