



FX401

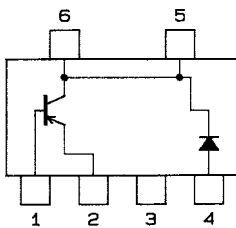
TR:PNP Epitaxial Planar Silicon Transistor
SBD:Schottky Barrier Diode

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 FX401 is composed on 2chips, one being equivalent to the 2SB1121 and the other the SB30-03P, placed in one package.

Electrical Connection



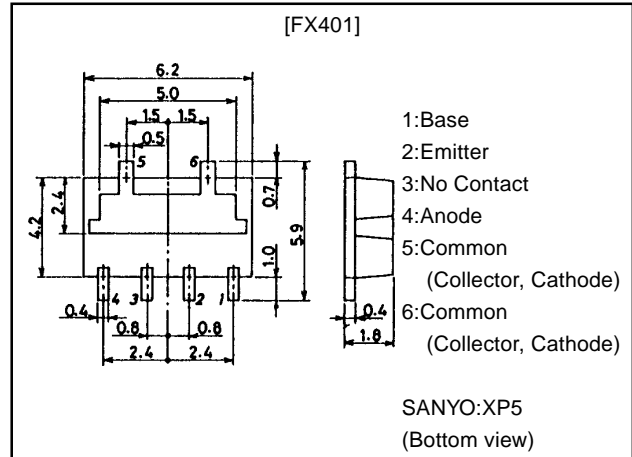
- 1:Base
- 2:Emitter
- 3:No Contact
- 4:Anode
- 5, 6:Common
(Collector, Cathode)

(Top view)

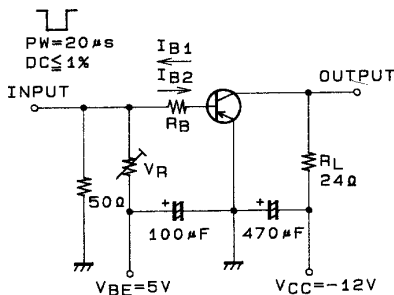
Package Dimensions

unit:mm

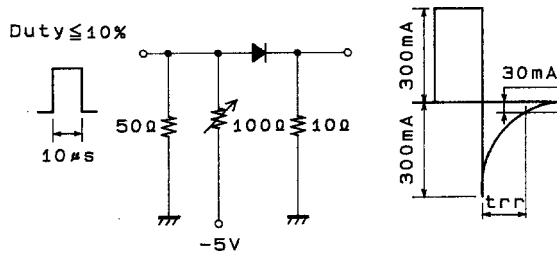
2123



Switching Time Test Circuit



Trr Test Circuit



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V _{CBO}		-30	V
Collector-to-Emitter Voltage	V _{CEO}		-25	V
Emitter-to-Base Voltage	V _{EBO}		-6	V
Collector Current	I _C		-2	A
Collector Current (Pulse)	I _{CP}		-5	A
Base Current	I _B		-400	mA
Collector Dissipation	P _C	Mounted on ceramic board (750mm ² ×0.8mm)	1.5	W
Junction Temperature	T _J		150	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _R RM		30	V
Non-repetitive Peak Reverse Surge Voltage	V _R S		35	V
Average Rectified Current	I _O		3	A
Surge Forward Current	I _F SM	50Hz sine wave, 1cycle	10	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

· Marking:401

Continued on next page.

SANYO Electric Co.,Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

52098HA (KT)/41095TS (KOTO) TA-0087 No.5028-1/4

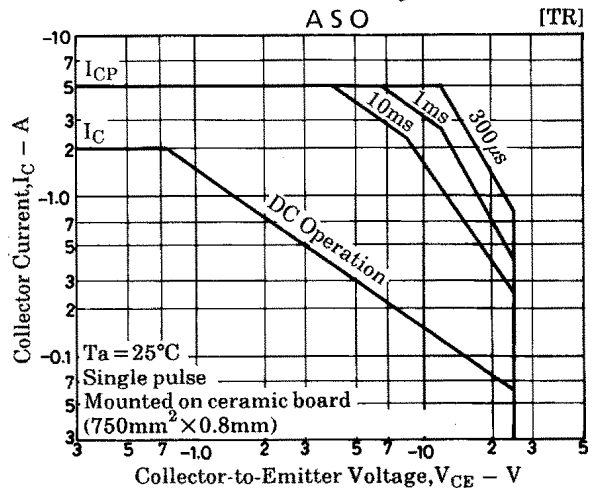
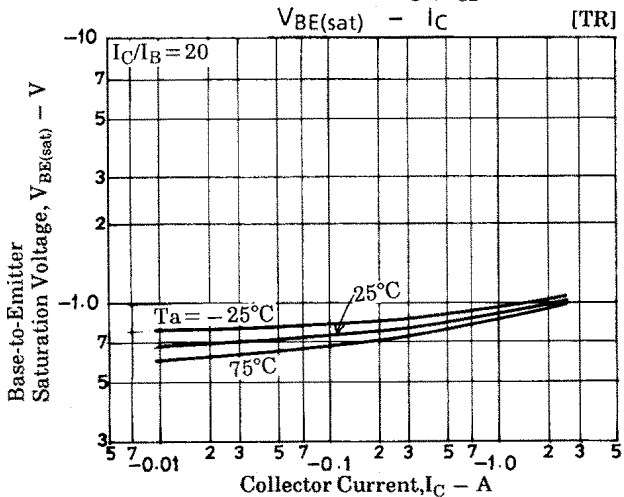
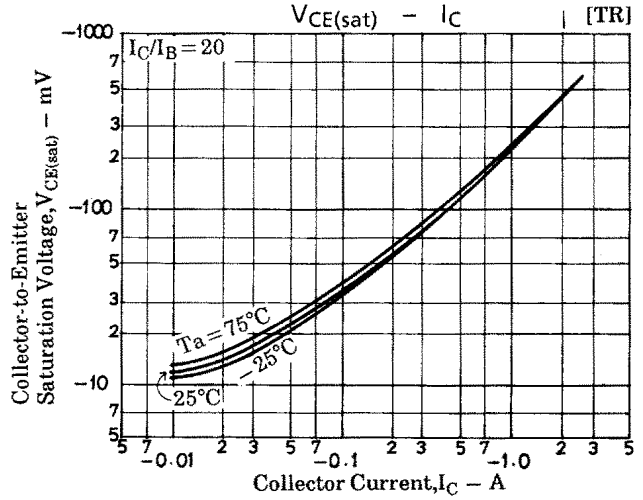
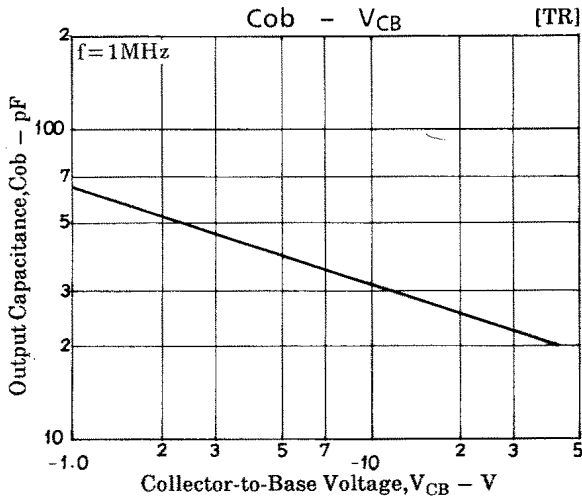
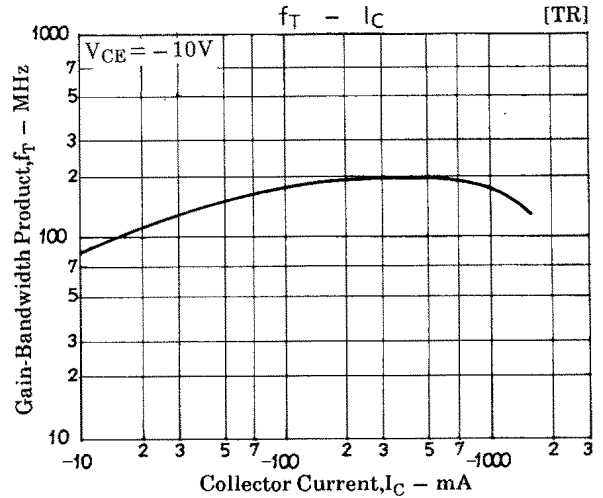
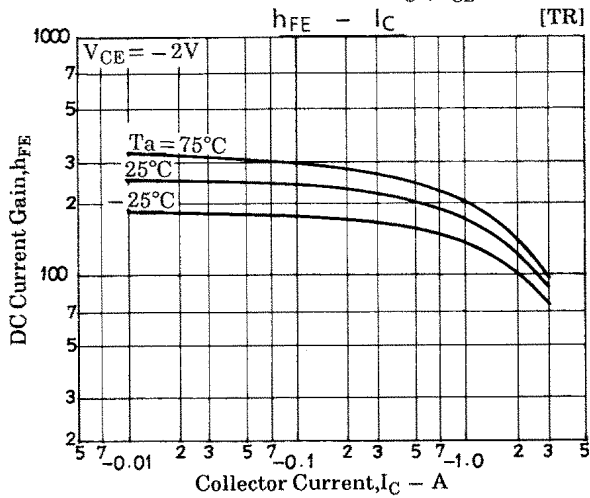
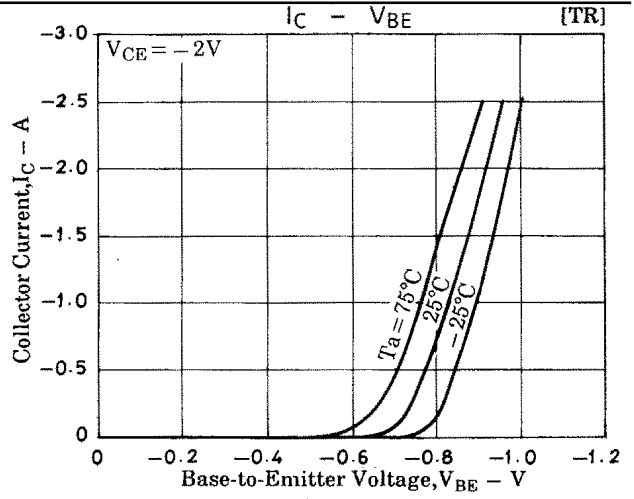
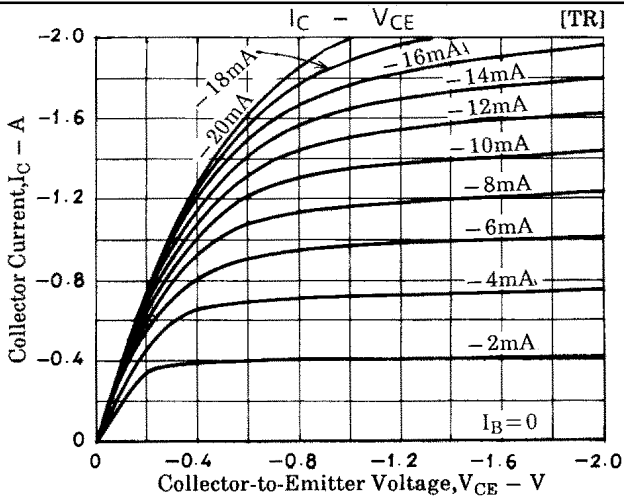
FX401

Continued from preceding page.

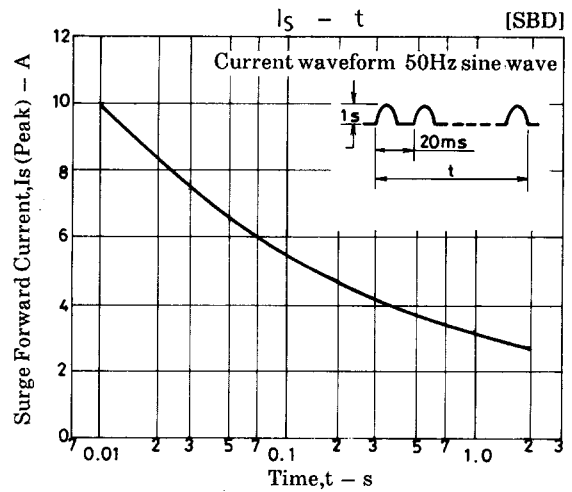
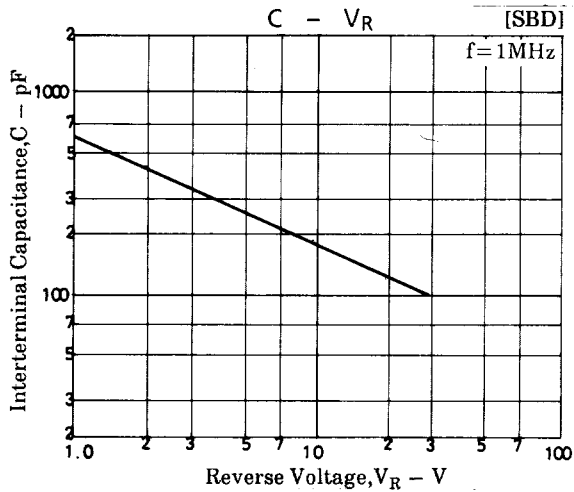
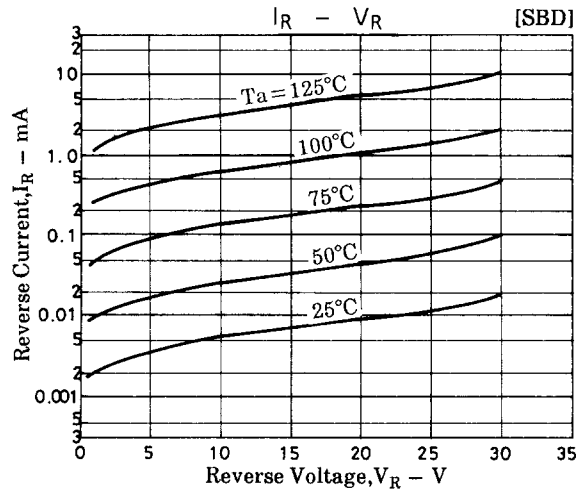
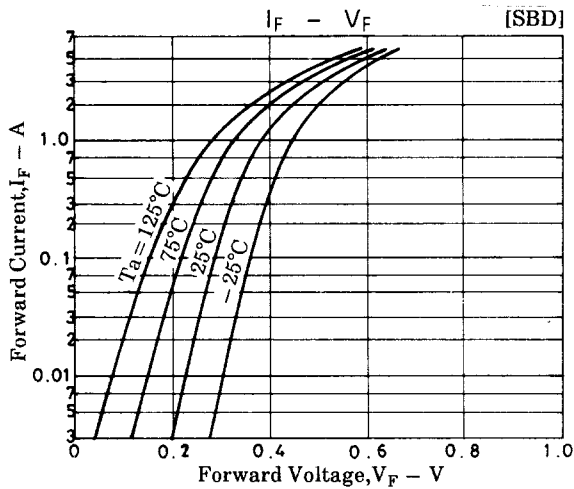
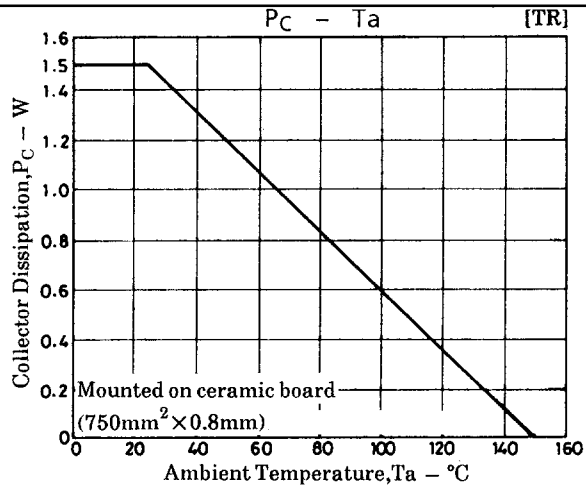
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	$V_{CB}=-20V, I_E=0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4V, I_C=0$			-0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=-2V, I_C=-100mA$	140		400	
	h_{FE2}	$V_{CE}=-2V, I_C=-1.5A$	65			
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_C=-200mA$		320		MHz
Output Capacitance	C_{ob}	$V_{CE}=-10V, f=1MHz$		32		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-1.5A, I_B=-75mA$		-350	-600	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-1.5A, I_B=-75mA$		-1.0	-1.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-30			V
C-E Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, R_{BE}=\infty$	-25			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-6			V
Turn-ON Time	t_{on}	See sepcified Test Circuit		60		ns
Storage Time	t_{stg}	See sepcified Test Circuit		350		ns
Fall Time	t_f	See sepcified Test Circuit		25		ns
[SBD] (Value per element)						
Reverse Voltage	V_R	$I_R=1mA$	30			V
Forward Voltage	V_F	$I_F=3A$			0.55	V
Reverse Current	I_R	$V_R=15V$			200	μA
Interterminal Capacitance	C	$V_R=10V, f=1MHz$		160		pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=300mA$, See specified Test Circuit			30	ns
Thermal Resistance	R_{thj-a}	Mounted on ceramic board (750mm ² ×0.8mm)		85		°C/W

FX401



FX401



■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:

- ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
- ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of May, 1998. Specifications and information herein are subject to change without notice.