



FP102

PNP Epitaxial Planar Silicon Transistor/
Composite Schottky Barrier Diode

DC-DC Converter Applications

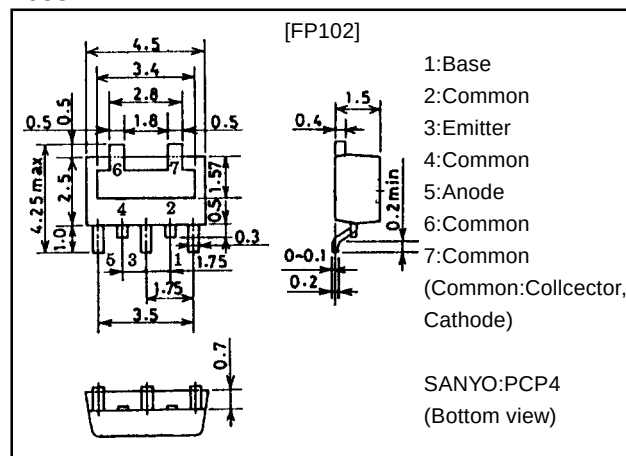
Features

- Composite type with a PNP transistor and a Schottky barrier diode contained in one package, facilitating high-density mounting.
- The FP102 is formed with 2chips, one being equivalent to the 2SB1396 and the other the SB07-03C, placed in one package.

Package Dimensions

unit:mm

2088A



Specifications

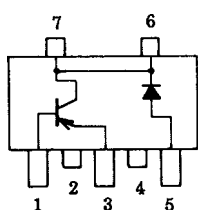
Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V_{CBO}		-15	V
Collector-to-Emitter Voltage	V_{CEO}		-11	V
Emitter-to-Base Voltage	V_{EBO}		-7	V
Collector Current	I_C		-3	A
Collector Current (Pulse)	I_{CP}		-5	A
Base Current	I_B		-600	mA
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm)	1.3	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		700	mA
Surge Forward Current	I_{FSM}	50Hz sine wave, 1cycle	5	A
Junction Temperature	T_J		-55 to +125	°C
Storage Temperature	T_{stg}		-55 to +125	°C

Marking:102

Continued on next page.

Electrical Connection



1:Base
2:Common
3:Emitter
4:Common
5:Anode
6:Common
7:Common
(Common:Collector, Cathode)
(Top view)

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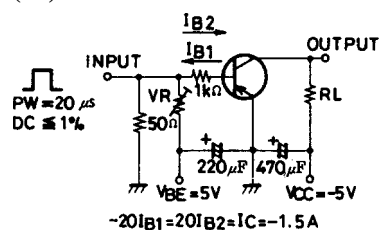
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Electrical Characteristics at Ta=25°C

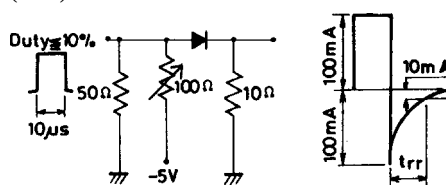
Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I _{CBO}	V _{CB} =-12V, I _E =0			-0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =-6V, I _C =0			-0.1	μA
DC Current Gain	h _{FE1}	V _{CE} =-2V, I _C =-0.5A	140		560	
	h _{FE2}	V _{CE} =-2V, I _C =-3A	70			
Gain-Bandwidth Product	f _T	V _{CE} =-2V, I _C =-0.3A		400		MHz
Output Capacitance	C _{ob}	V _{CB} =-10V, f=1MHz		26		pF
C-E Saturation Voltage	V _{CE(sat)}	I _C =-1.5A, I _B =-30mA		-0.22	-0.4	V
B-E Saturation Voltage	V _{BE(sat)}	I _C =-1.5A, I _B =-30mA		-0.9	-1.2	V
C-B Breakdown Voltage	V _{(BR)CBO}	I _C =-10μA, I _E =0	-15			V
C-E Breakdown Voltage	V _{(BR)CEO}	I _C =-1mA, R _{BE} =∞	-11			V
E-B Breakdown Voltage	V _{(BR)EBO}	I _E =-10μA, I _C =0	-7			V
Turn-ON Time	t _{on}	See specified Test Circuit		25		ns
Storage Time	t _{stg}	See specified Test Circuit		200		ns
Fall Time	t _f	See specified Test Circuit		10		ns
[SBD]						
Reverse Voltage	V _R	I _R =300μA	30			V
Forward Voltage	V _F	I _F =700mA			0.55	V
Reverse Current	I _R	V _R =15V			80	μA
Interterminal Capacitance	C	V _R =10V, f=1MHz		28		pF
Reverse Recovery Time	t _{rr}	I _F =I _R =100mA, See specified Test Circuit			10	ns
Thermal Resistance	R _{thj-a}	Mounted on ceramic board (250mm²×0.8mm)		120		°C/W

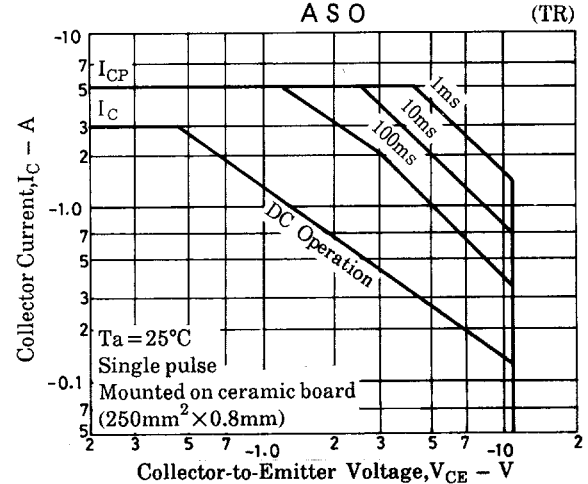
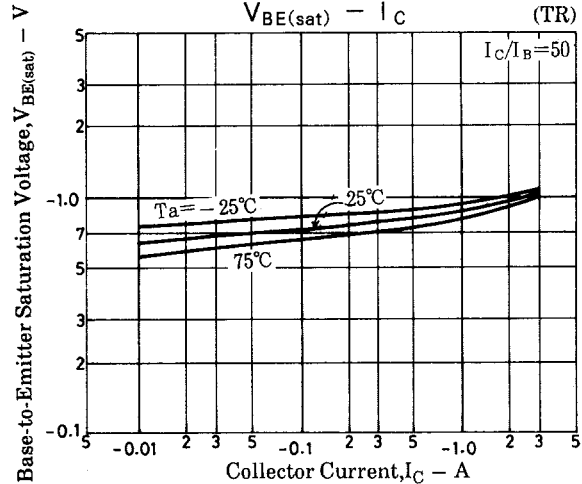
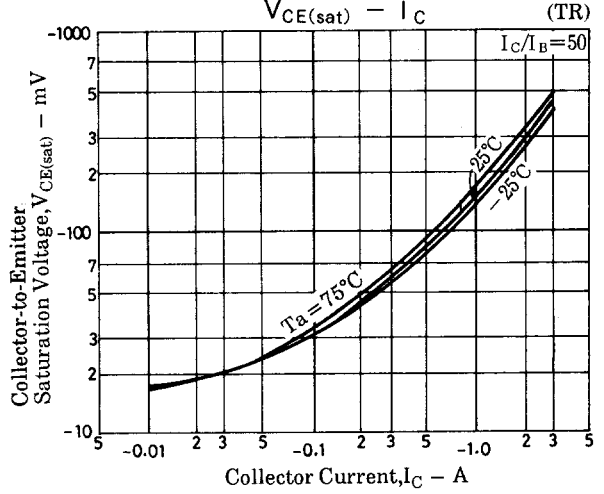
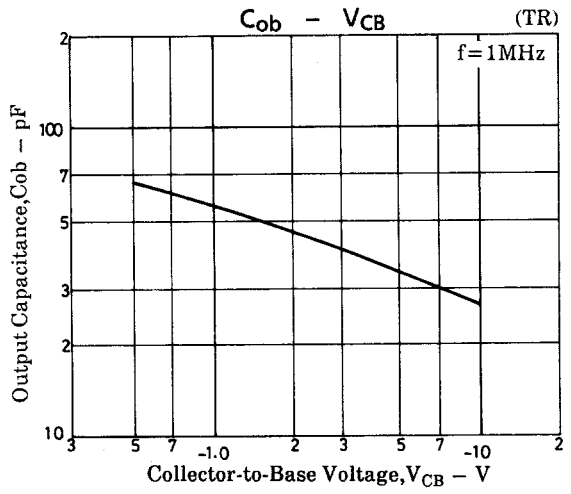
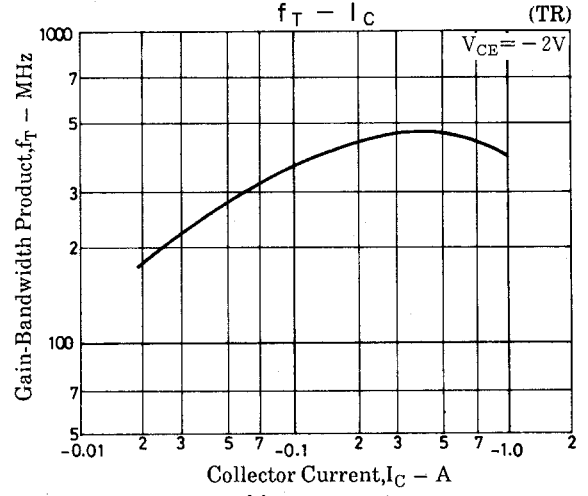
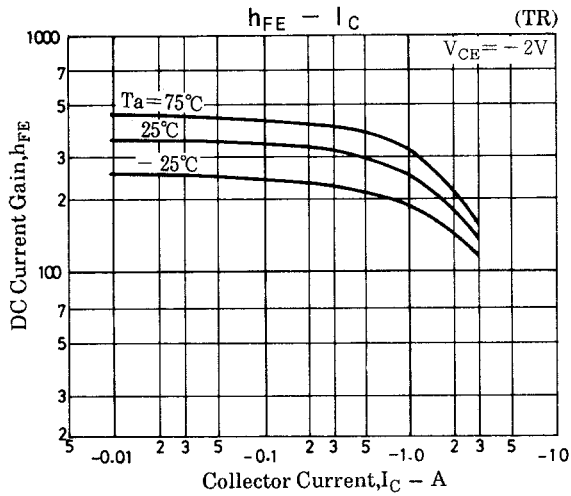
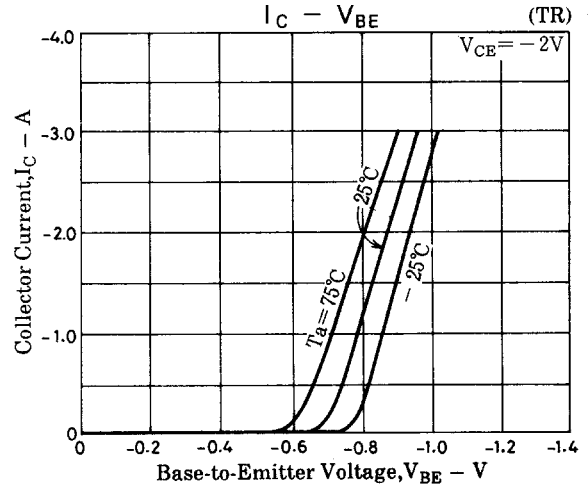
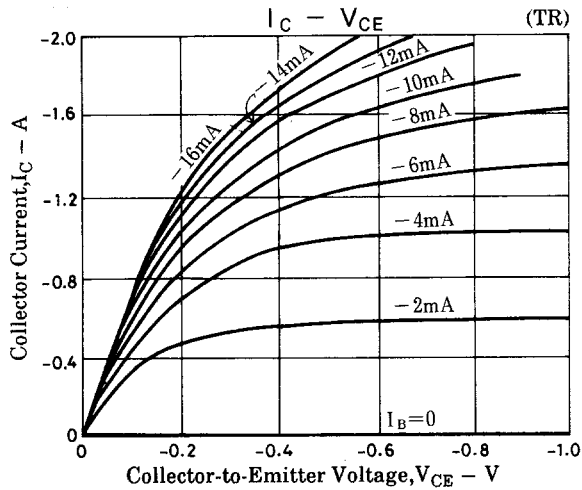
Switching Time Test Circuit

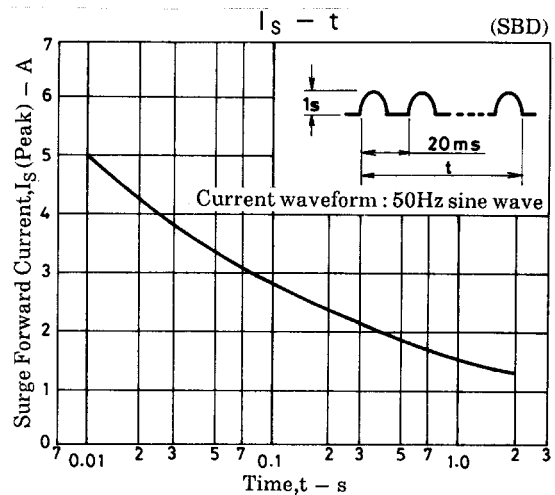
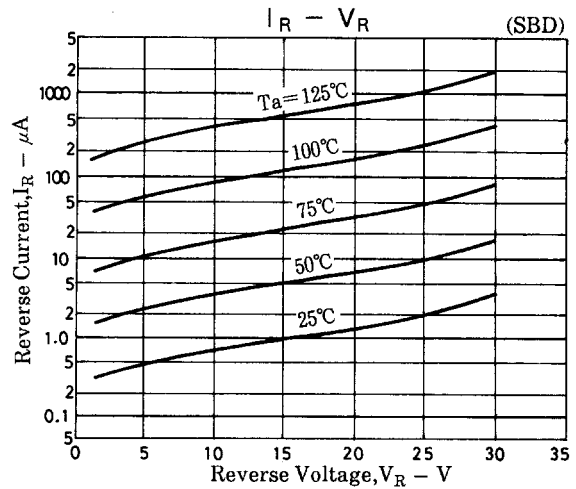
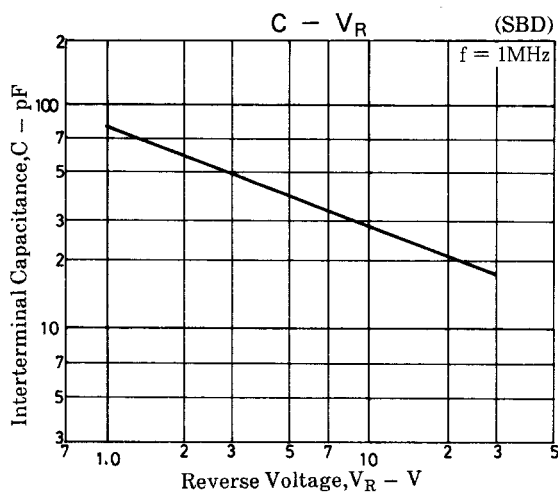
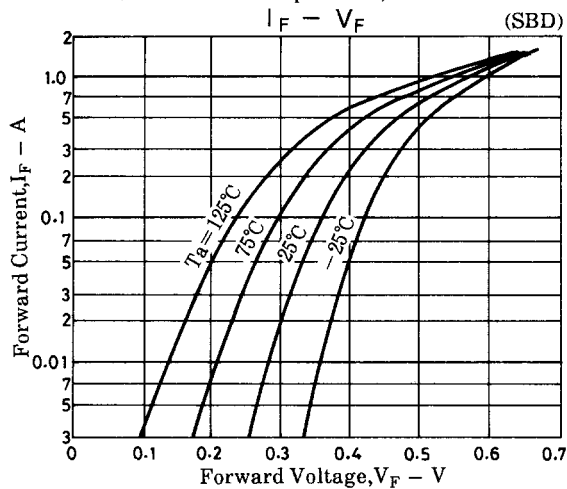
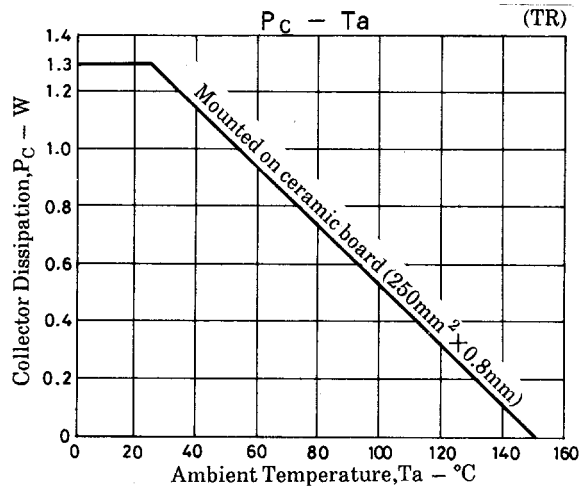
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