

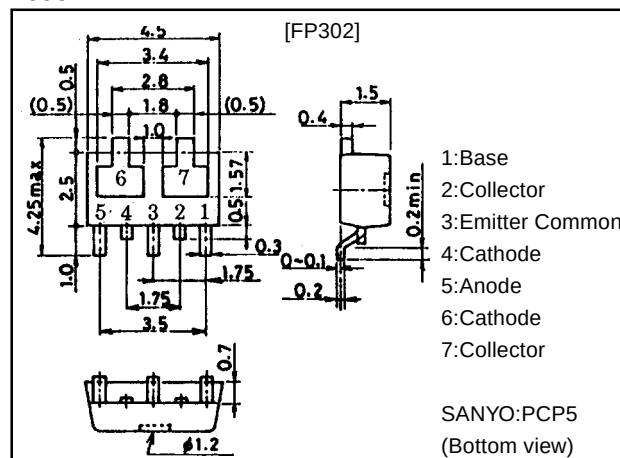
SANYO**FP302**TR:NPN Epitaxial Planar Silicon Transistor
SBD:Schottky Barrier Diode**DC-DC Converter Applications****Features**

- Composite type with NPN transistor and Schottky barrier diode facilitating high-density mounting.
- The FP302 is composed of chips equivalent to the 2SC4520 and SB05-05CP, which are placed in one package.

Package Dimensions

unit:mm

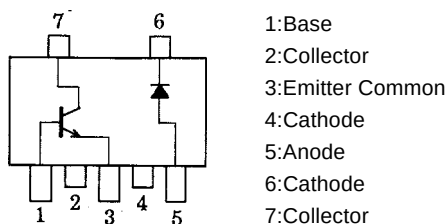
2099A

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

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V_{CB0}		60	V
Collector-to-Emitter Voltage	V_{CE0}		45	V
Emitter-to-Base Voltage	V_{EB0}		5	V
Collector Current	I_C		1.5	A
Collector Current (Pulse)	I_{CP}		3	A
Base Current	I_B		300	mA
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm)	0.8	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C
[SBD]				
Repetitive Peak Reverse Voltage	V_{RRM}		50	V
Non-repetitive Peak Reverse Surge Voltage	V_{RSM}		55	V
Average Rectified Current	I_O		500	mA
Surge Forward Current	I_{FSM}	50Hz sine wave, 1 cycle	5	A
Junction Temperature	T_j		-55 to +125	°C
Storage Temperature	T_{stg}		-55 to +125	°C

Electrical Connection

Continued on next page.



(Top view)

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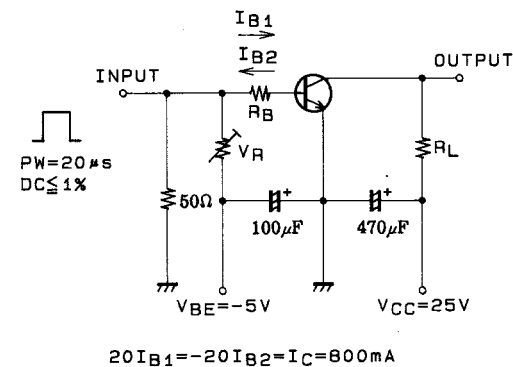
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Electrical Characteristics at Ta=25°C

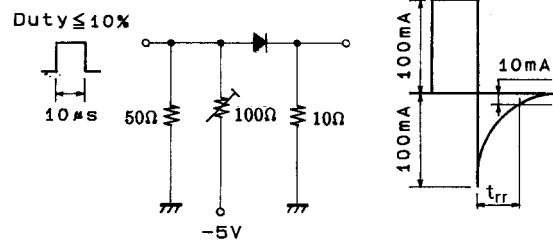
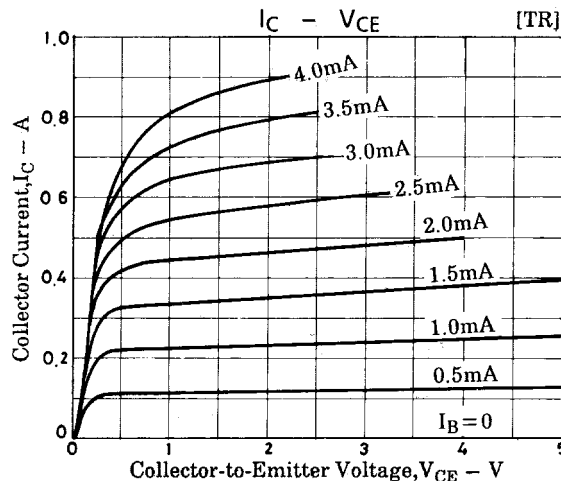
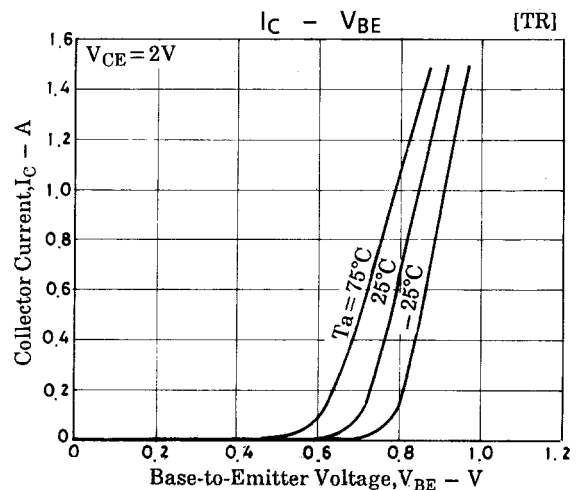
Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I _{CBO}	V _{CB} =45V, I _E =0			1.0	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =3V, I _C =0			1.0	μA
DC Current Gain	h _{FE1}	V _{CE} =2V, I _C =100mA	100		400	
	h _{FE2}	V _{CE} =2V, I _C =1.5A	40			
Gain-Bandwidth Product	f _T	V _{CE} =2V, I _C =100mA		300		MHz
Output Capacitance	Cob	V _{CB} =10V, f=1MHz		13		pF
C-E Saturation Voltage	V _{CE(sat)}	I _C =800mA, I _B =40mA		0.25	0.7	V
B-E Saturation Voltage	V _{BE(sat)}	I _C =800mA, I _B =40mA		0.9	1.3	V
C-B Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	60			V
C-E Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	45			V
E-B Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	5			V
Turn-ON Time	t _{on}	See specified Test Circuit		50		ns
Storage Time	t _{stg}	See specified Test Circuit		150		ns
Turn-OFF Time	t _{off}	See specified Test Circuit		180		ns
[SBD]						
Reverse Voltage	V _R	I _R =200μA	50			V
Forward Voltage	V _F	I _F =500mA			0.55	V
Reverse Current	I _R	V _R =25V			50	μA
Interterminal Capacitance	C	V _R =10V, f=1MHz cycle		22		pF
Reverse Recovery Time	t _{rr}	I _F =I _R =100mA, See sepcified Test Circuit.			10	ns
Thermal Resistance	Rthj-a	Mounted on ceramic board (250mm²×0.8mm)		170		°C/W

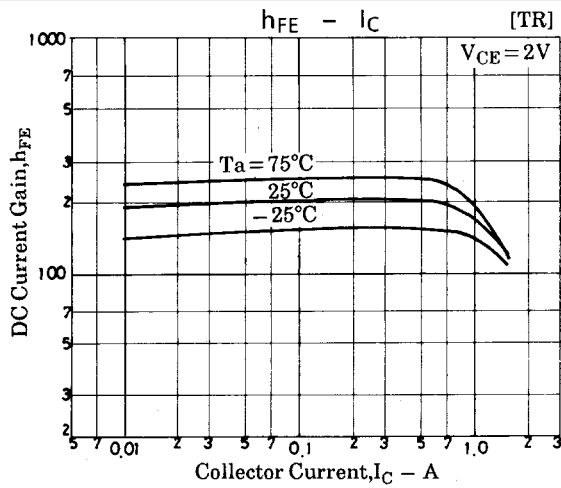
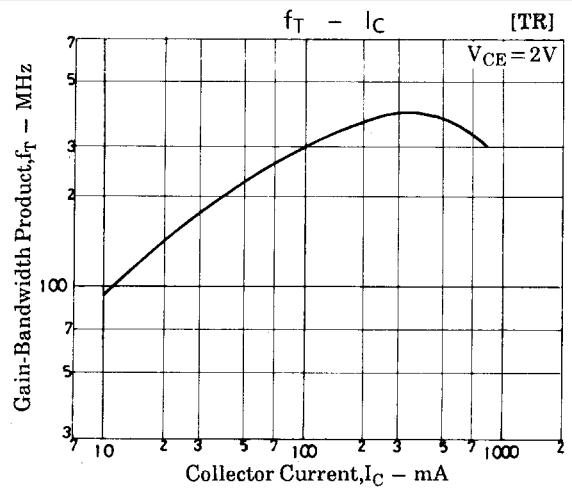
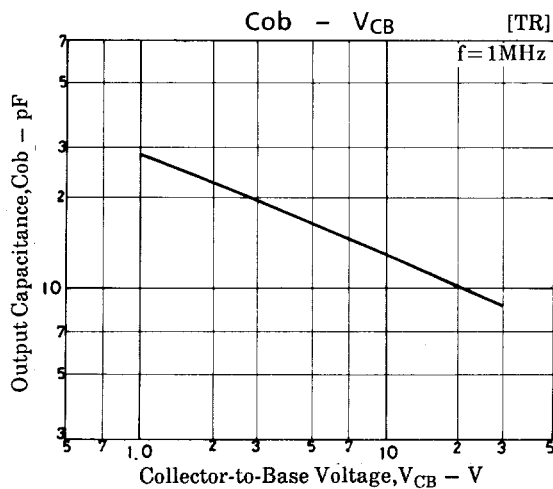
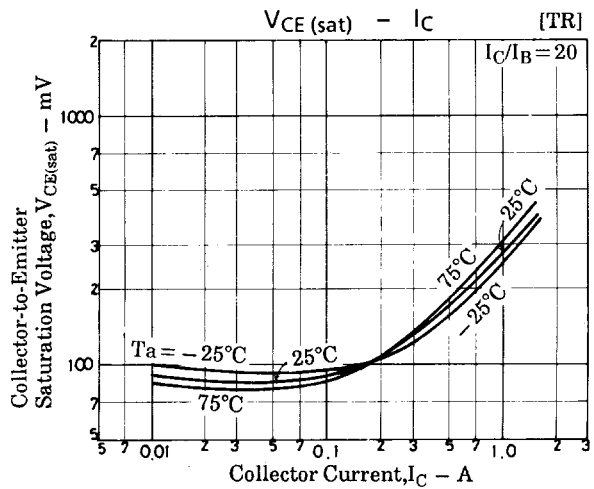
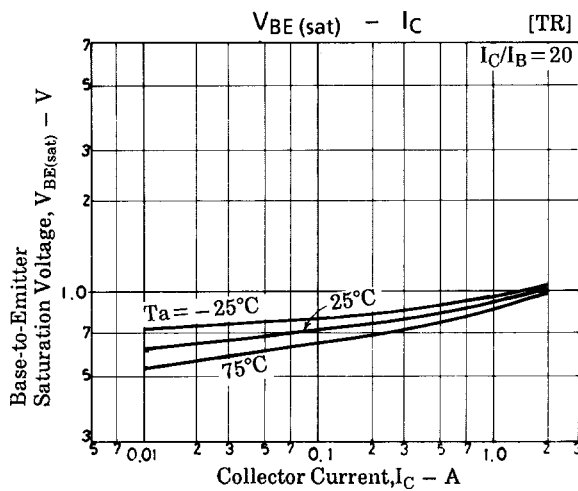
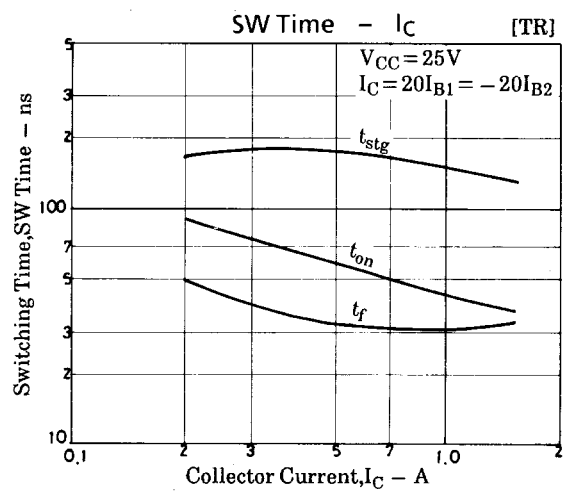
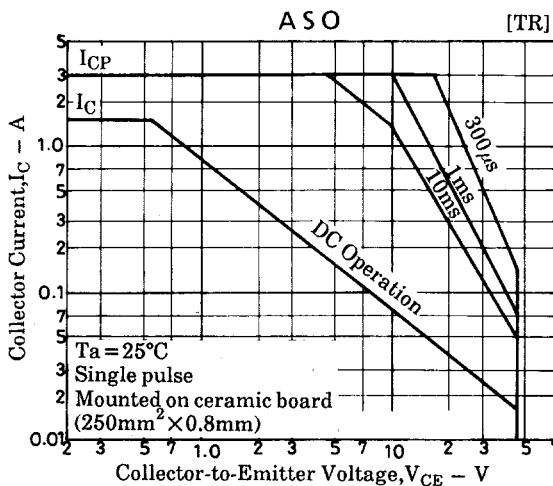
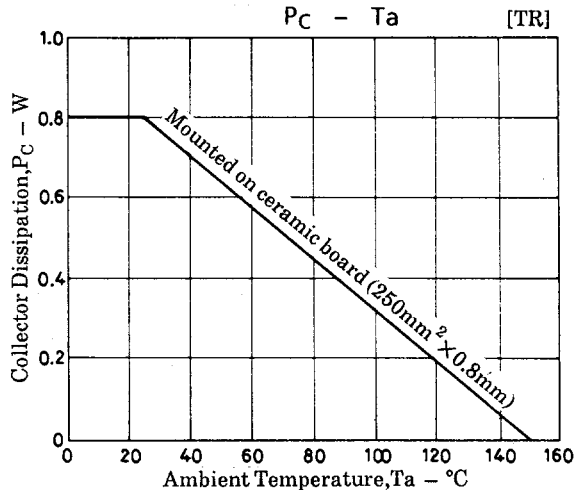
Switching Time Test Circuit

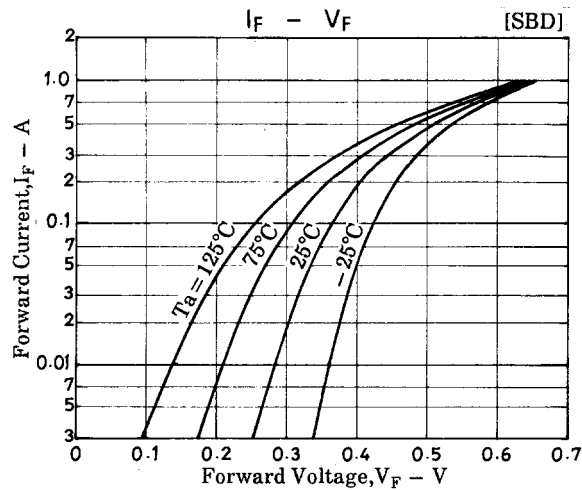
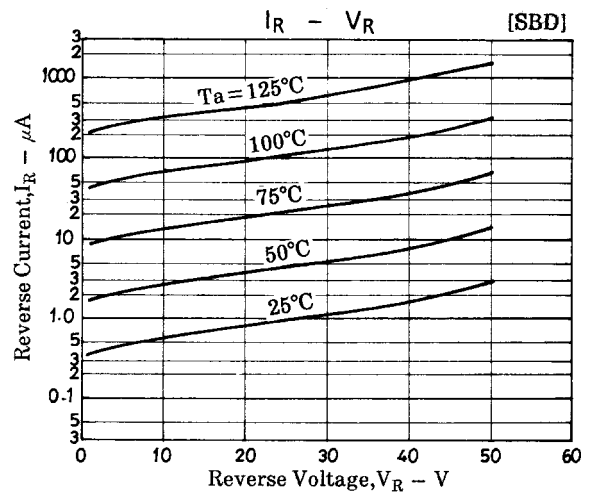
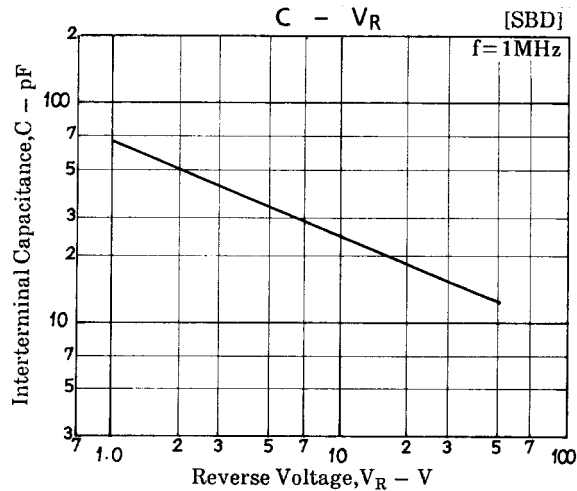
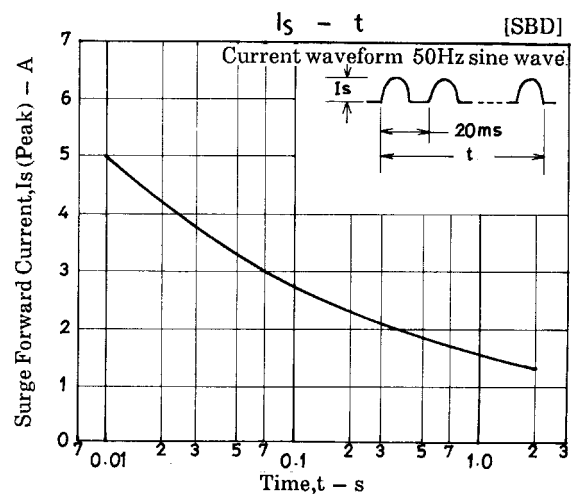
[TR]



[SBD]







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