

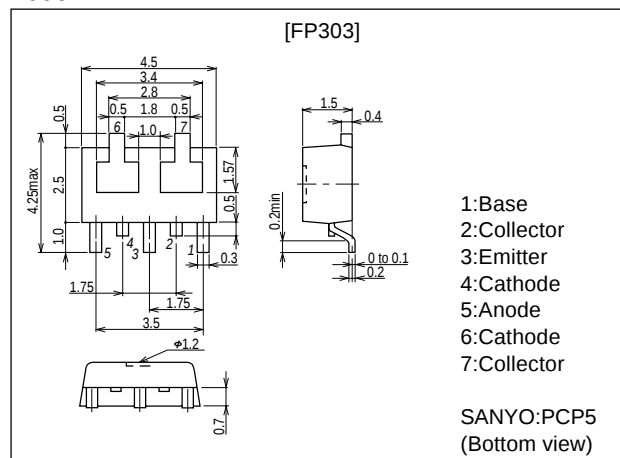
**FP303****DC-DC Converter Applications****Features**

- Composite type with NPN transistor and Schottky barrier diode facilitates high-density mounting.
- The FP303 is composed of chips equivalent to the 2SD1623 and SB05-05CP, which are placed in one package.

Package Dimensions

unit:mm

2099A

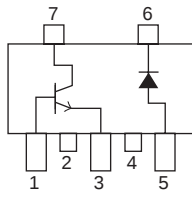
**Specifications****Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V_{CB0}		60	V
Collector-to-Emitter Voltage	V_{CE0}		50	V
Emitter-to-Base Voltage	V_{EB0}		6	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Base Current	I_B		400	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

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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

Electrical Connection



- 1:Base
2:Collector
3:Emitter Common
4:Cathode
5:Anode
6:Cathode
7:Collector

(Top View)

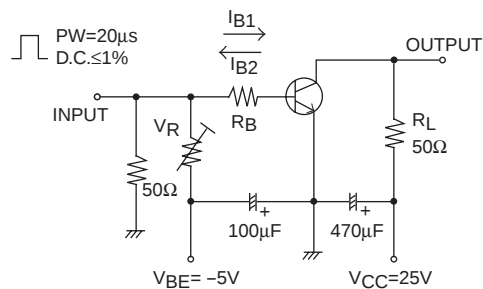
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I _{CBO}	V _{CB} =50V, 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		560	
	h _{FE2}	V _{CE} =2V, I _C =1.5A	40			
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		150		MHz
Output Capacitance	C _{ob}	V _{CE} =10V, f=1MHz		12		pF
C-E Saturation Voltage	V _{CE(sat)}	I _C =1.0A, I _B =50mA		0.15	0.4	V
B-E Saturation Voltage	V _{BE(sat)}	I _C =1.0A, I _B =50mA		0.9	1.2	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} =∞	50			V
E-B Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	6			V
Turn-ON Time	t _{on}	See specified Test Circuit		60		ns
Storage Time	t _{stg}	See specified Test Circuit		550		ns
Fall Time	t _f	See specified Test Circuit		30		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		22		pF
Reverse Recovery Time	t _{rr}	I _F =I _R =100mA, See sepcified Test Circuit.			10	ns
Thermal Resistance	R _{thj-a}	Mounted on ceramic board (250mm²×0.8mm)		170		°C/W

Marking:303

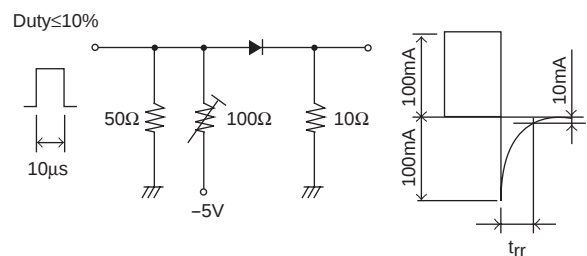
Switching Time Test Circuit

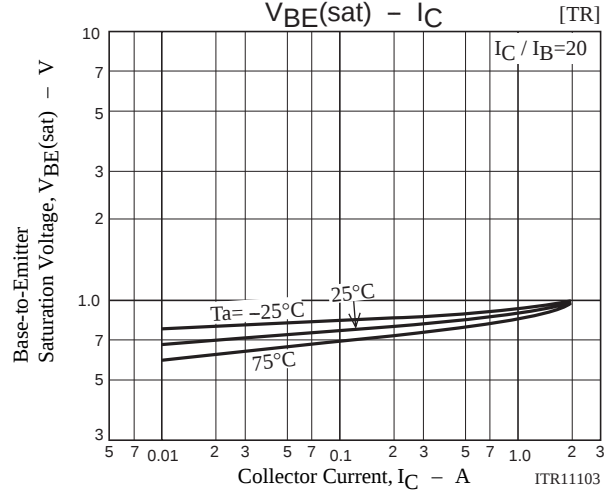
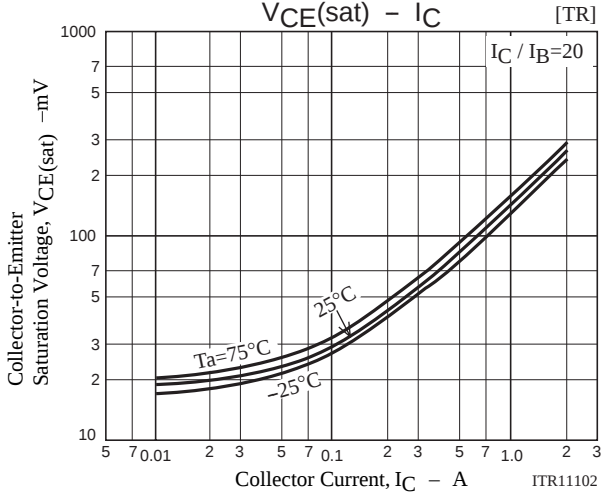
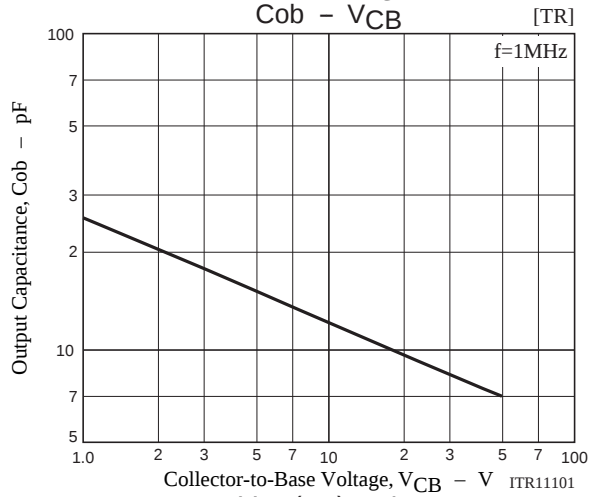
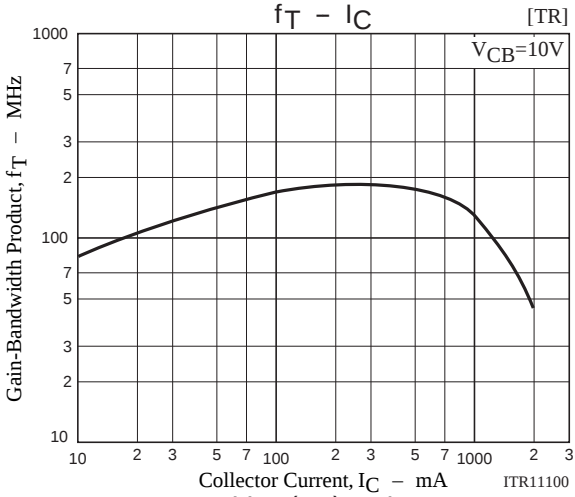
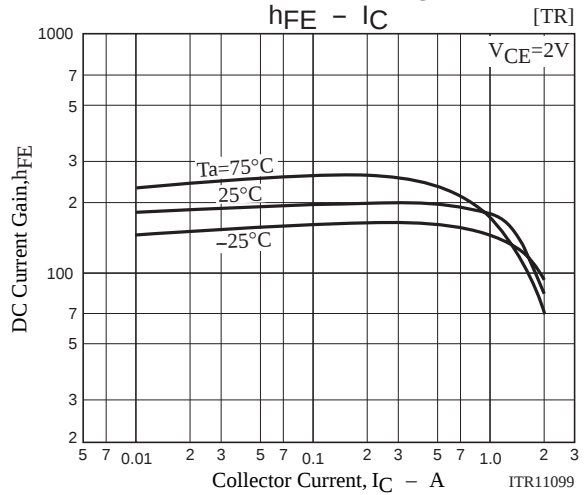
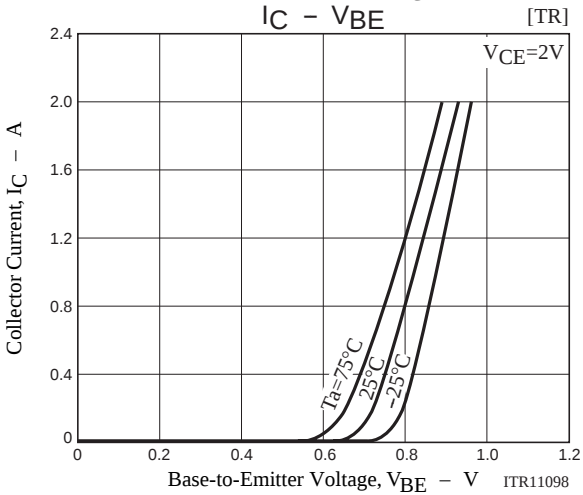
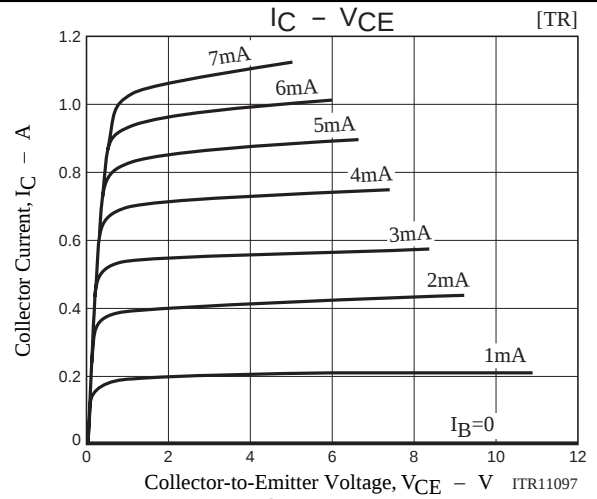
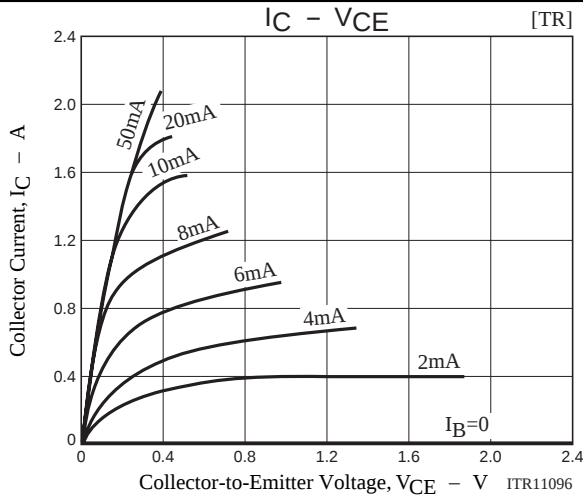
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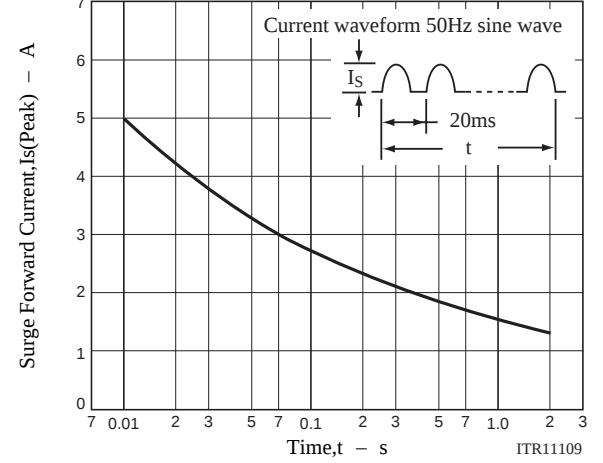
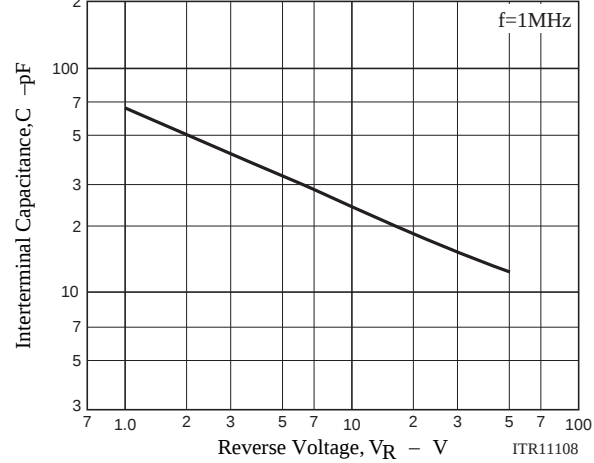
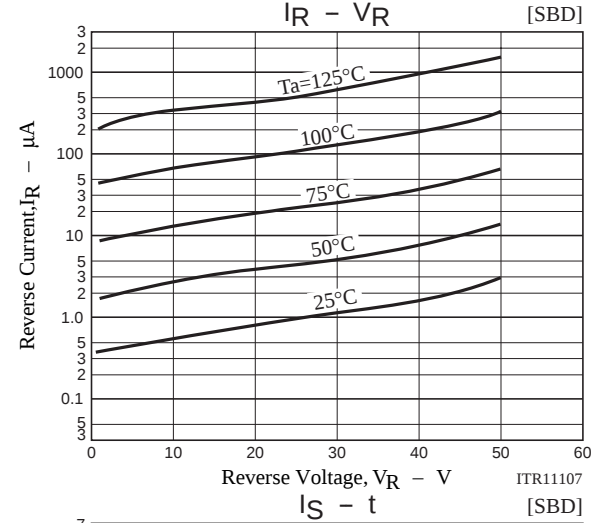
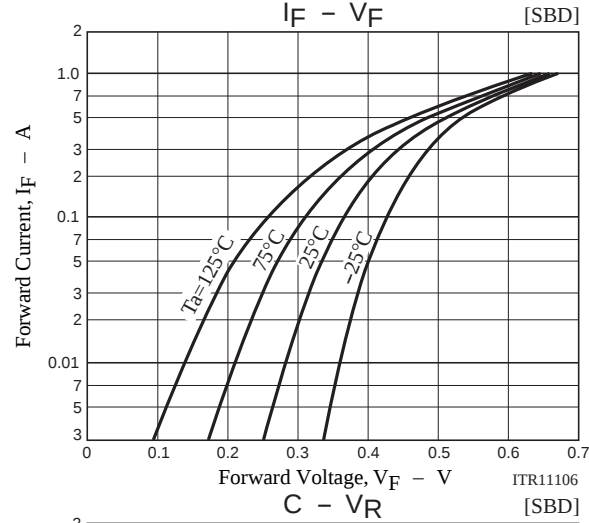
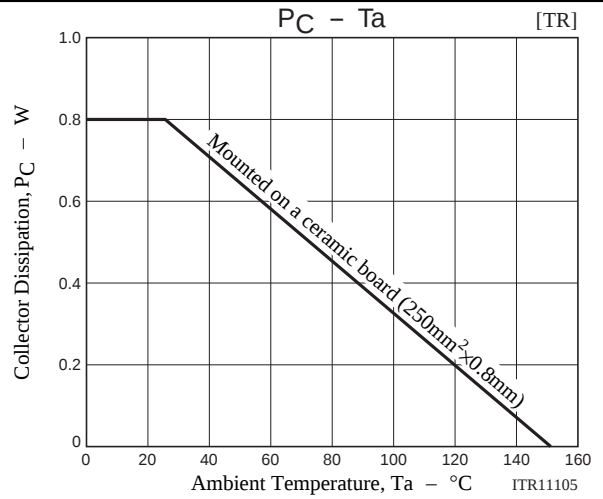
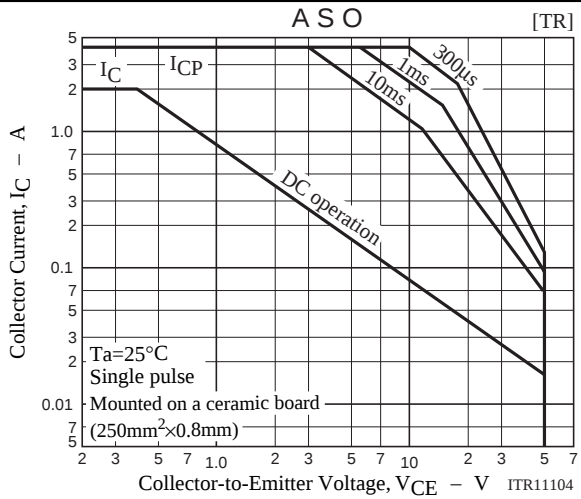


$$10I_{B1} = -10I_{B2} = I_C = 500\text{mA}$$

[SBD]







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