



FC601

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

DC-DC Converter Applications

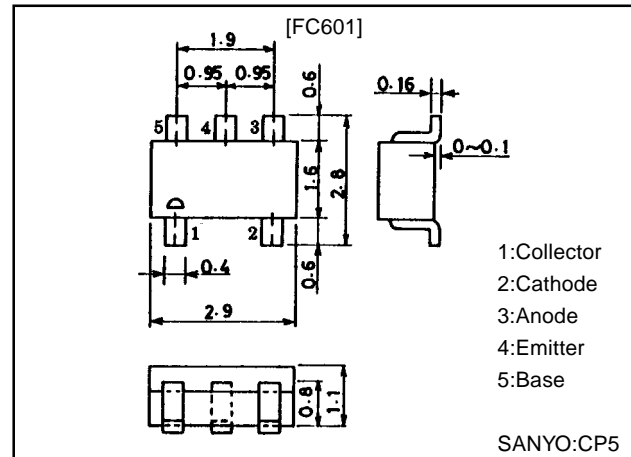
Features

- Composed of a Schottky barrier diode and a PNP transistor with built-in resistors, and contained in one CP package, resulting in greatly improved circuit-board using efficiency.
- The FC601 is composed of an equivalent chip to the SB007-03CP and an equivalent chip to the RA104C (R1=10k Ω , R2=47k Ω).

Package Dimensions

unit:mm

2105A



Specifications

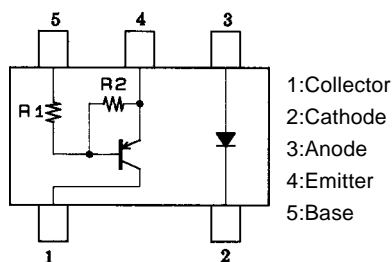
Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-6	V
Collector Current	I_C		-100	mA
Collector Dissipation	P_C		200	mW
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C
[SBD]				
Repetitive Peak Reverse Voltage	V_{RRM}		30	V
Non-repetitive Peak Reverse Surge Voltage	V_{RSM}		35	V
Average Output Current	I_O		70	mA
Surge Forward Current	I_{FSM}	50Hz sine wave, 1cycle	2	A
Junction Temperature	T_j		-55 to +125	°C
Storage Temperature	T_{stg}		-55 to +125	°C

Marking:601

Continued on next page.

Electrical Connection



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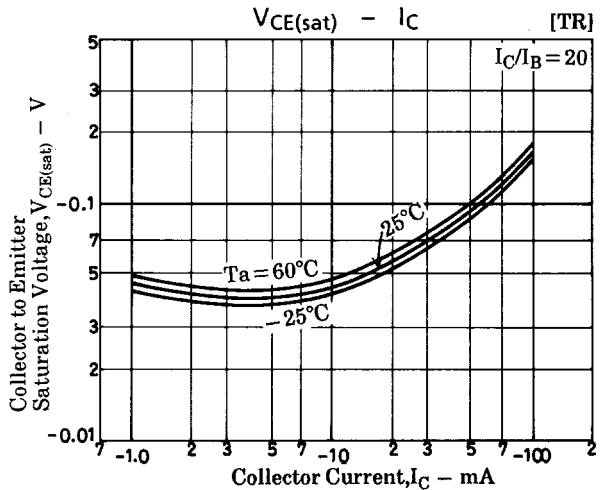
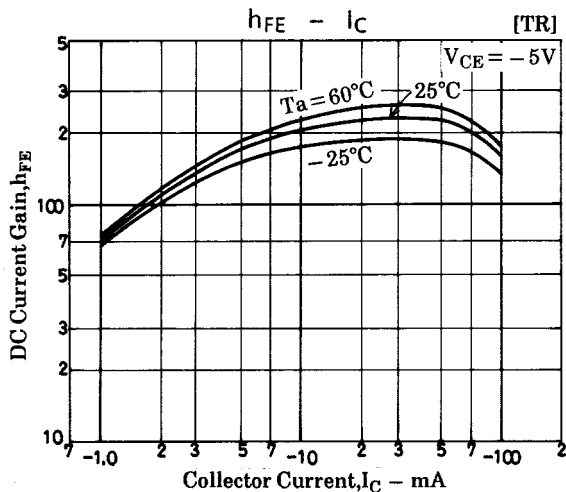
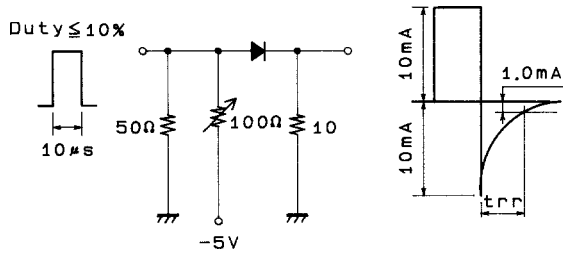
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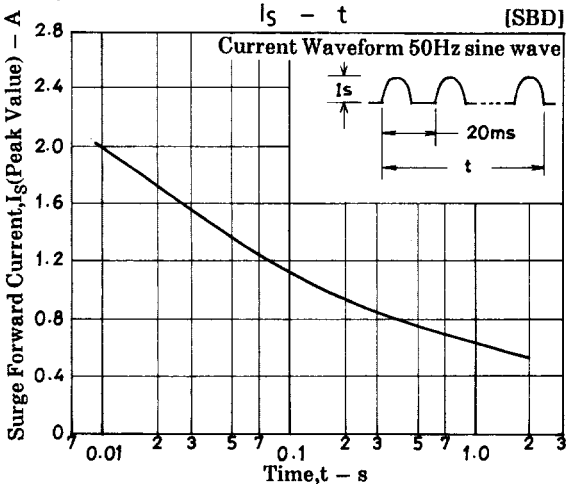
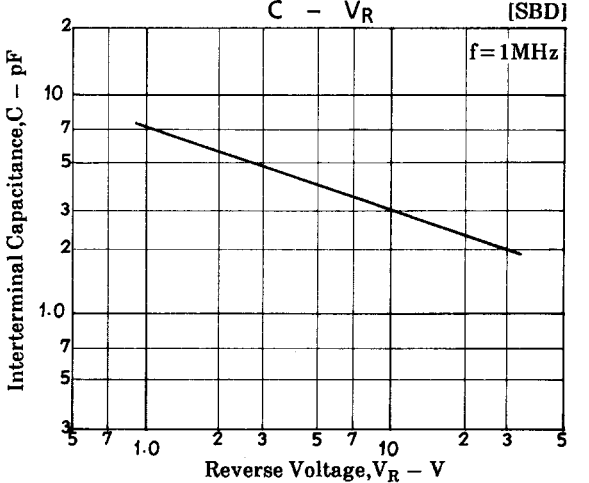
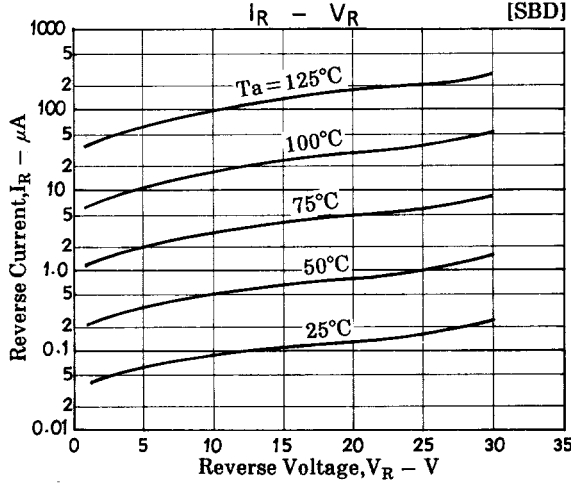
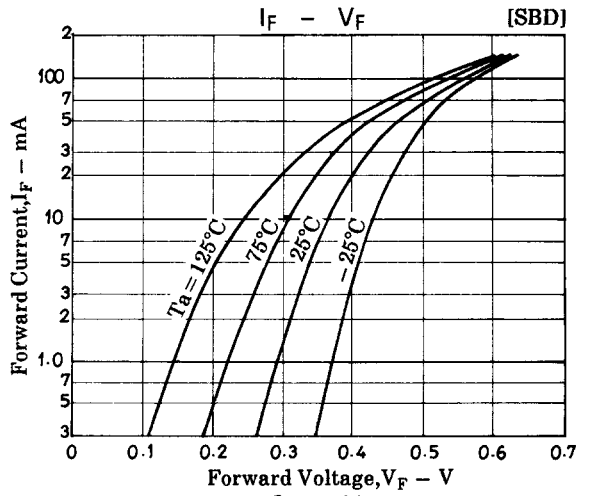
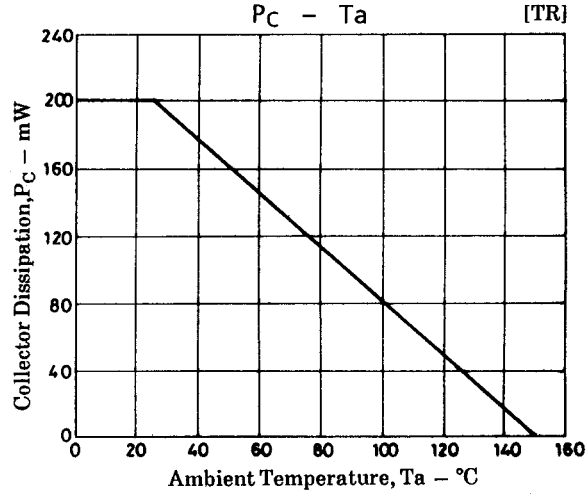
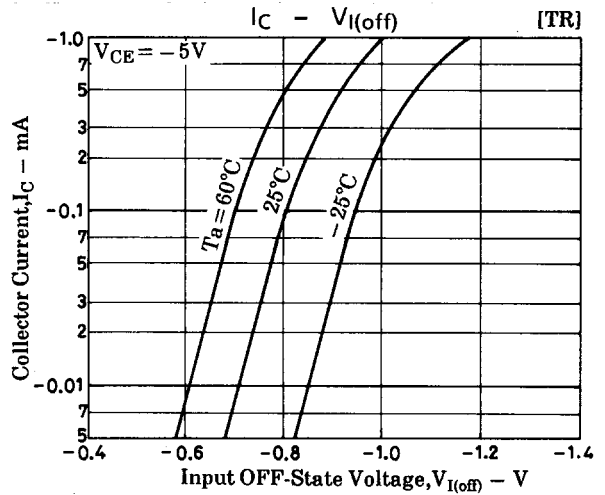
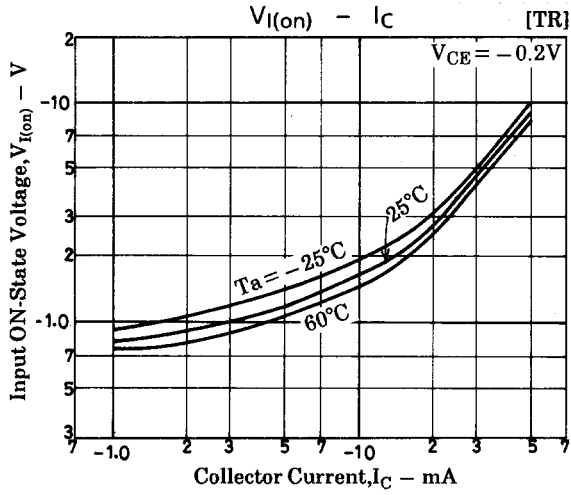
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	$V_{CB}=-40V, I_E=0$			-0.1	μA
Collector Cutoff Current	I_{CEO}	$V_{CE}=-40V, I_B=0$			-0.5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-5V, I_C=0$	-67	-88	-125	μA
DC Current Gain	h_{FE}	$V_{CE}=-5V, I_C=5mA$	70			
Gain-Bandwidth Product	f_T	$V_{CE}=-10V, I_C=5mA$		200		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$		5.3		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$		-0.1	-0.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	-50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100\mu A, R_{BE}=\infty$	-50			V
Input OFF-State Voltage	$V_{I(off)}$	$V_{CE}=-5V, I_C=100\mu A$	-0.6	-0.8	-1.0	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=-0.2V, I_C=5mA$	-0.7	-1.0	-2.0	V
Input Resistance	R_1		7	10	13	k Ω
Resistance Ratio	R_1/R_2			0.213		
[SBD]						
Reverse Voltage	V_R	$I_R=20\mu A$	30			V
Forward Voltage	V_F	$I_F=70mA$			0.55	V
Reverse Current	I_R	$V_R=15V$			5	μA
Interterminal Capacitance	C	$V_R=10V, f=1MHz$		3.0		pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=10mA$, See specified Test Circuit			10	ns
Thermal Resistance	R_{thj-a}			620		$^{\circ}C/W$

Trr Test Circuit



FC601



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