



# FC601

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

## DC-DC Converter Applications

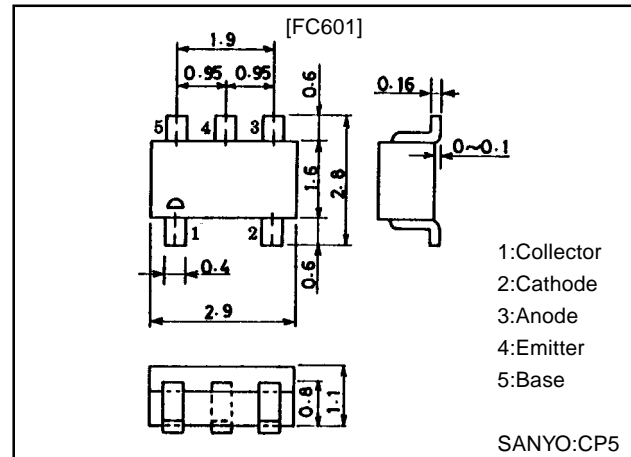
### Features

- 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 $\Omega$ , R2=47k $\Omega$ ).

### Package Dimensions

unit:mm

2105A



### Specifications

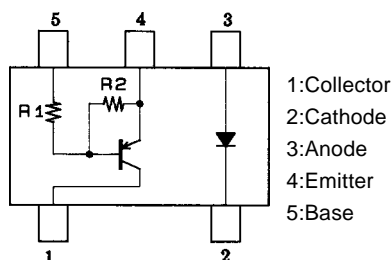
#### Absolute Maximum Ratings at Ta = 25°C

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

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### Electrical Connection



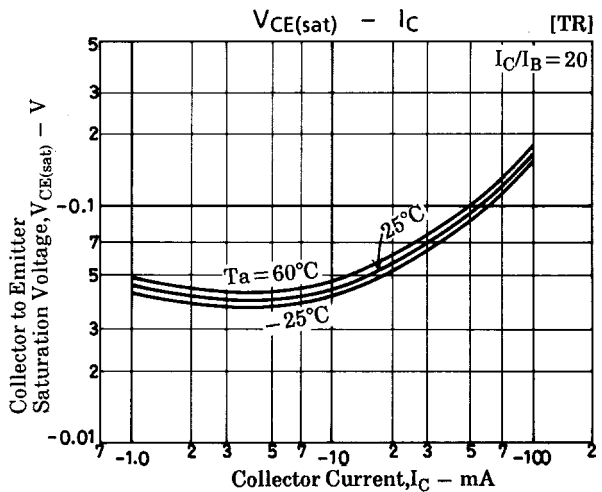
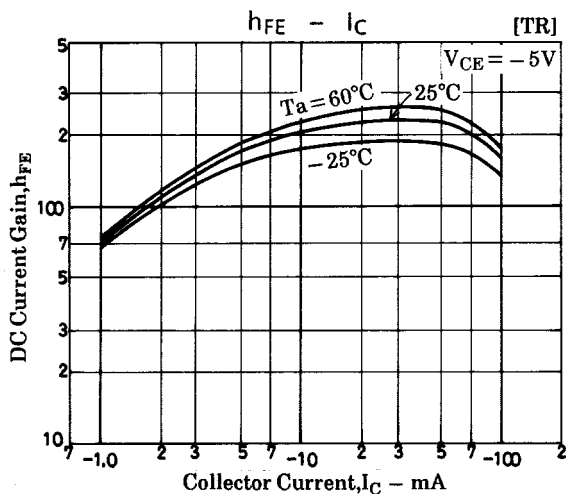
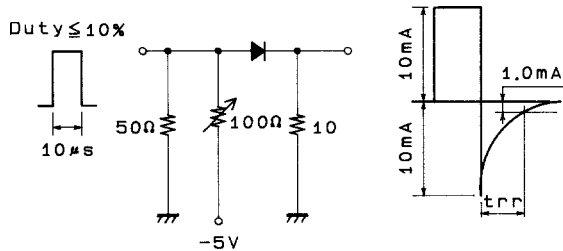
# FC601

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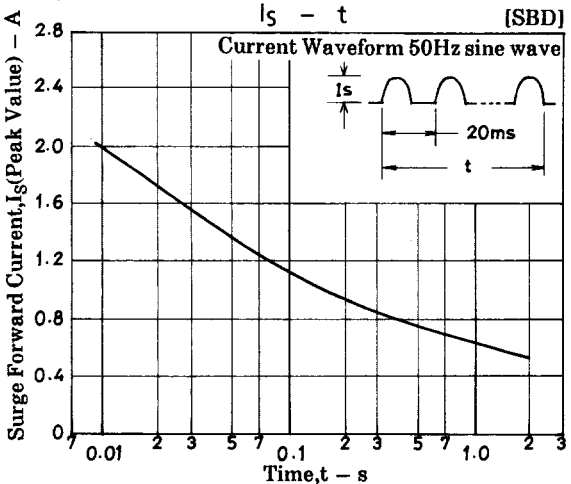
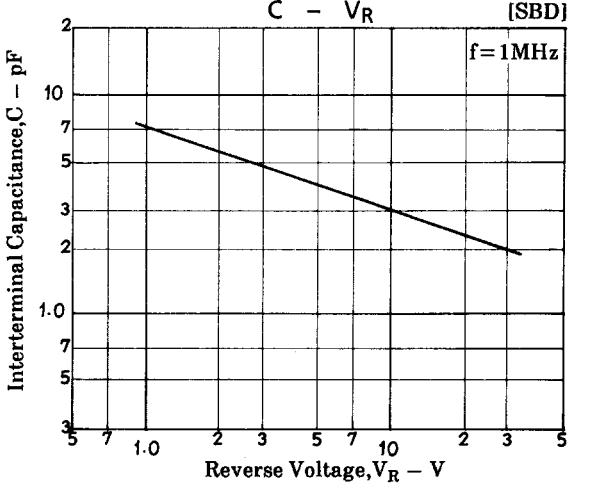
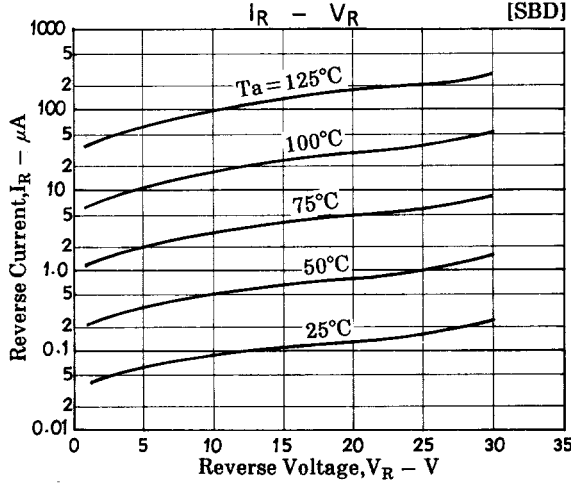
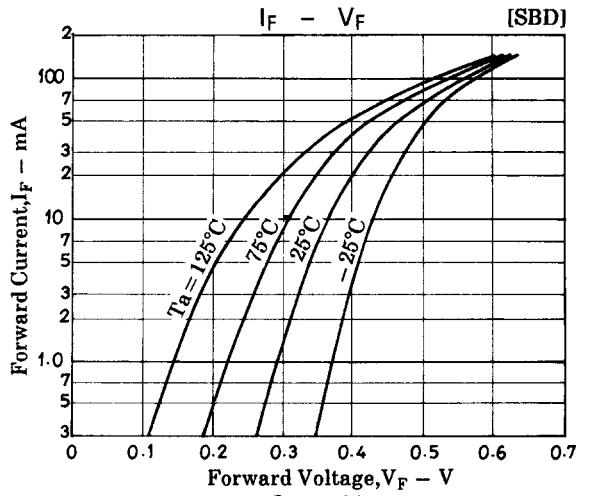
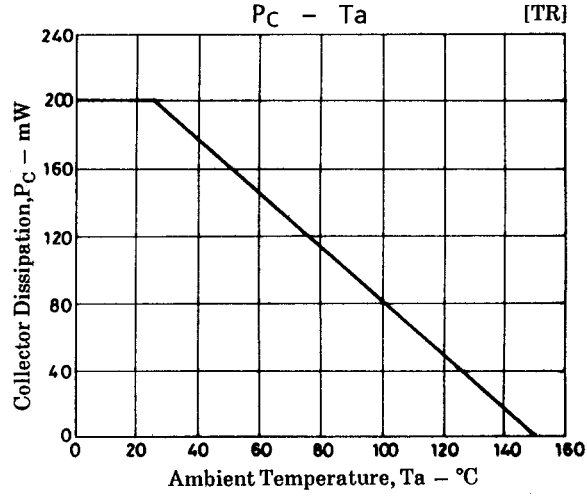
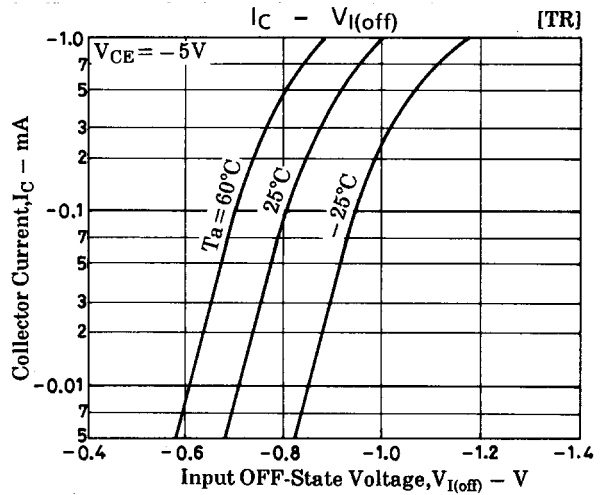
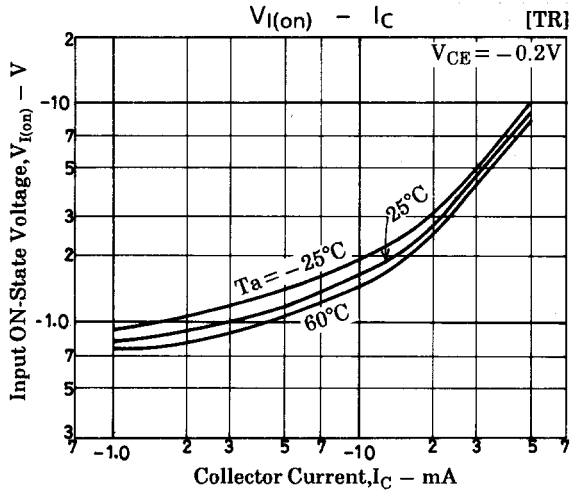
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-40V, I_E=0$			-0.1	$\mu A$
Collector Cutoff Current	$I_{CEO}$	$V_{CE}=-40V, I_B=0$			-0.5	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-5V, I_C=0$	-67	-88	-125	$\mu A$
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 $\Omega$
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	$\mu A$
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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