Ordering number:EN4658

FC601

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

DC-DC Converter Applications

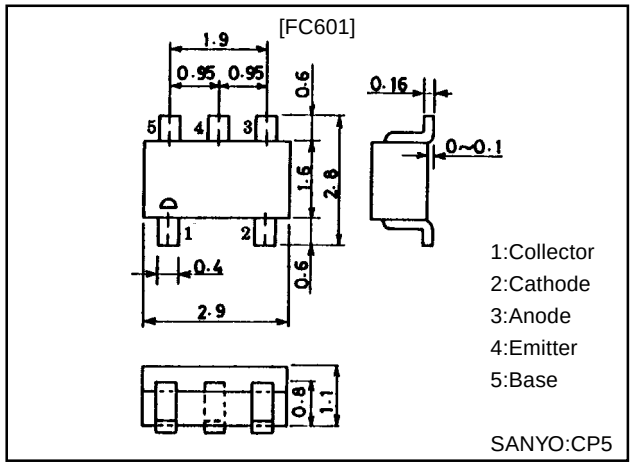
Features

- Composed of a Shottky 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=10kΩ, R2=47kΩ).

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	Tj		150	˚C
Storage Temperature	Tstg		–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	Tj		–55 to +125	˚C
Storage Temperature	Tstg		–55 to +125	˚C

Marking:601

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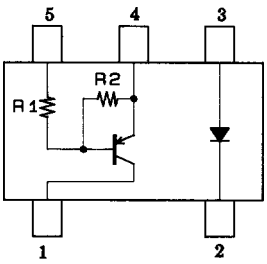
Electrical Connection



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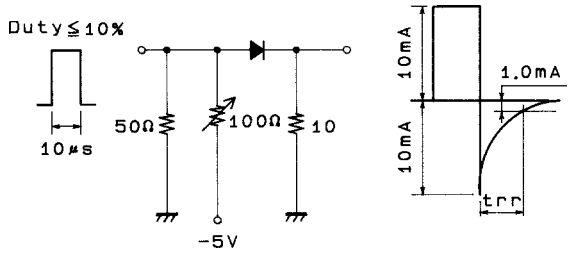
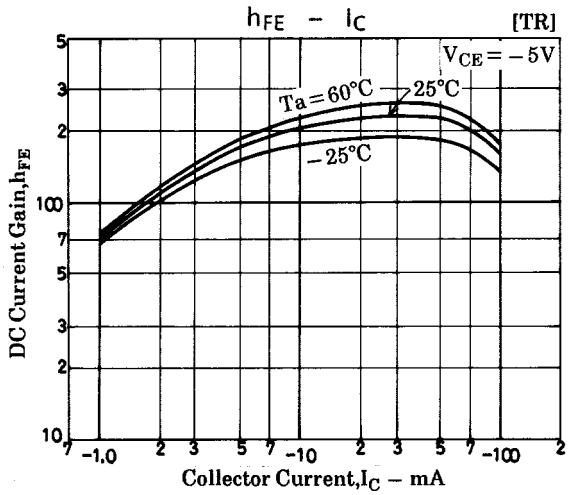
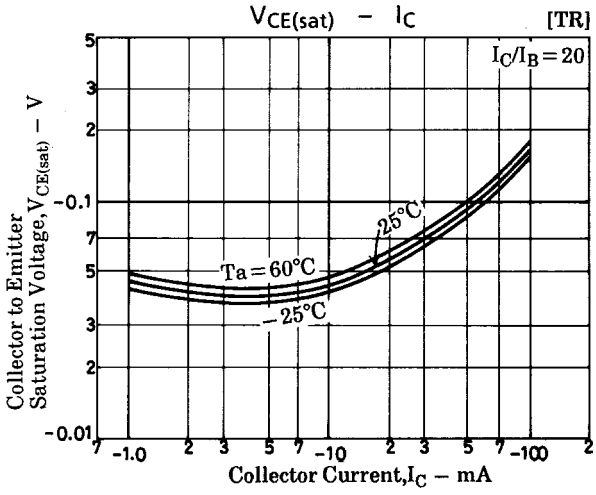
Electrical Characteristics at Ta=25˚C

Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	V_{CB}=–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	Cob	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=–10μA, I_E=0	–50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=–100μA, R_{BE}=∞	–50			V
Input OFF-State Voltage	$V_{I(off)}$	V_{CE}=–5V, I_C=–100μA	–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	R1		7	10	13	kΩ
Resistance Ratio	R1/R2			0.213		
[SBD]						
Reverse Voltage	V_R	I_R=20μA	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	Rthj-a			620		˚C/W

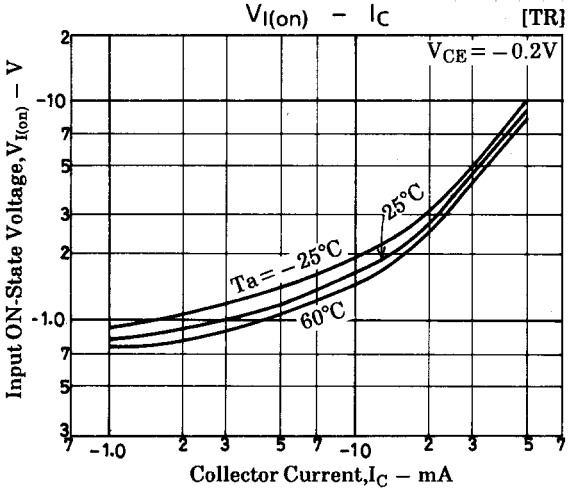
Trr Test Circuit



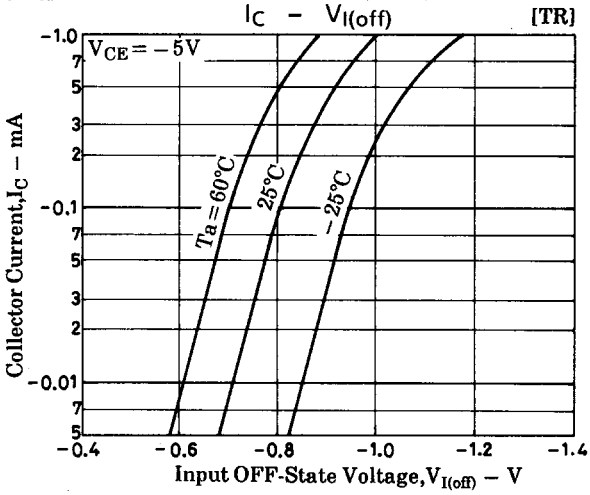




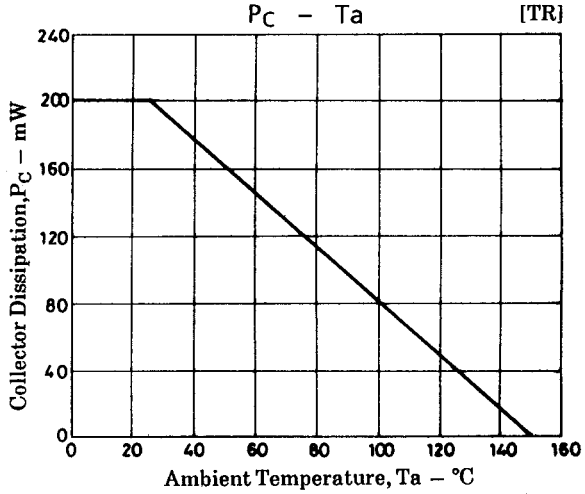
$V_{I(on)}$ – I_C [TR]



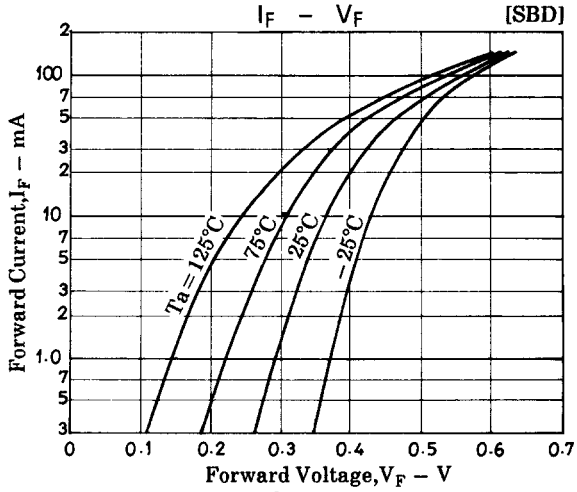
I_C – $V_{I(off)}$ [TR]



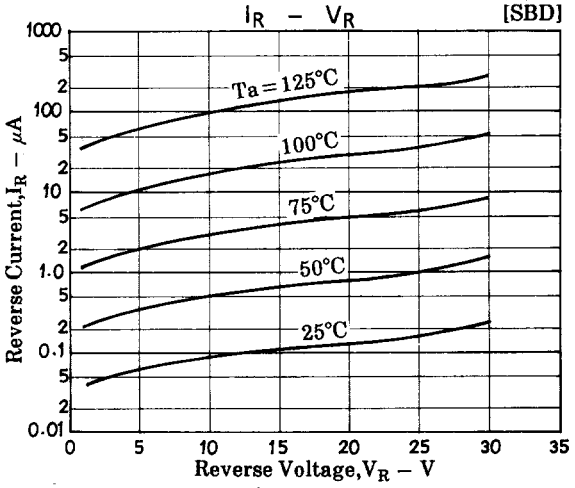
P_C – Ta [TR]



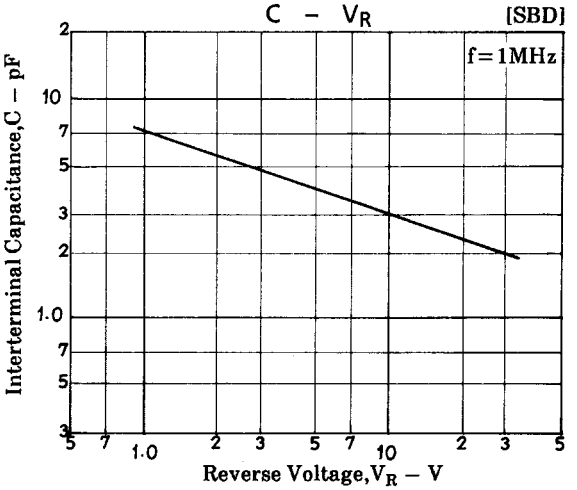
I_F – V_F [SBD]



I_R – V_R [SBD]



C – V_R [SBD]



I_S – t [SBD]