Ordering number:ENN3962A

Discontinued

PNP Epitaxial Planar Silicon Transistor
Schottky Barrier Diode

FP103

DC/DC Converter Applications

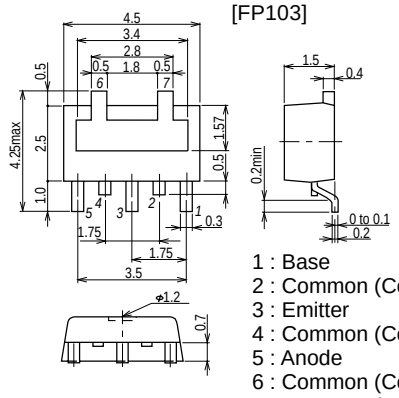
Features

- Composite type with a PNP transistor and a Shottky barrier diode contained in one package, facilitating high-density mounting.
- The FP103 is formed with 2chips, one being equivalent to the 2SB1121 and the other the SB07-03C, placed in one package.

Package Dimensions

unit:mm

2088A



1 : Base
2 : Common (Collector/Cathode)
3 : Emitter
4 : Common (Collector/Cathode)
5 : Anode
6 : Common (Collector/Cathode)
7 : Common (Collector/Cathode)
SANYO : PCP4

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V_{CBO}		–30	V
Collector-to-Emitter Voltage	V_{CEO}		–25	V
Emitter-to-Base Voltage	V_{EBO}		–6	V
Collector Current	I_C		–2	A
Collector Current (Pulse)	I_{CP}		–5	A
Base Current	I_B		–400	mA
Collector Dissipation	P_C		1.3	W
Junction Temperature	Tj	Mounted on a ceramic board (250mm²×0.8mm)	150	˚C
Strage 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 Rectified Current	I_O		700	mA
Surge Forward Current	I_{FSM}	50Hz sine wave, 1cycle	5	A
Junction Temperature	Tj		–55 to +125	˚C
Storage Temperature	Tstg		–55 to +125	˚C

Marking:103

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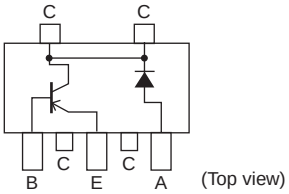
Electrical Characteristics at Ta = 25˚C

.Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	V_{CB}=–20V, I_E=0			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0			–0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=–2V, I_C=–100mA	140		560	
	$h_{FE}2$	V_{CE}=–2V, I_C=–1.5A	65			
Gain-Bandwidth Product	f_T	V_{CE}=–10V, I_C=–50mA		150		MHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		32		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=–1.5A, I_B=–75mA		–0.35	–0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=–1.5A, I_B=–75mA		–0.85	–1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–25			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, IC=0	–6			V
Turn-ON Time	t_{on}	See specified Test Circuit		60		ns
Storage Time	tstg	See specified Test Circuit		350		ns
Fall Time	t_f	See specified Test Circuit		25		ns
[SBD]						
Reverse Voltage	V_R	I_R=300μA	30			V
Forward Voltage	V_F	I_F=700mA			0.55	V
Reverse Current	I_R	V_R=15V			80	μA
Interterminal Capacitance	C	V_R=10V, f=1MHz		28		pF
Reverse Recovery Time	t_{rr}	I_F=I_R=100mA, See specified Test Circuit			10	ns
Thermal Resistance	Rthj-a	Mounted on a ceramic board (250mm²×0.8mm)		120		

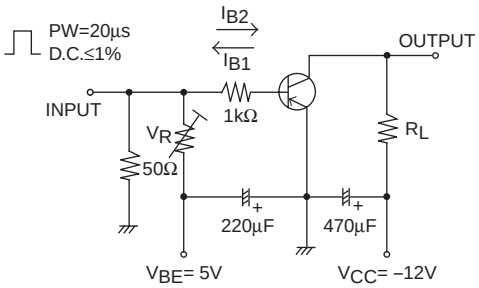
Electrical Connection



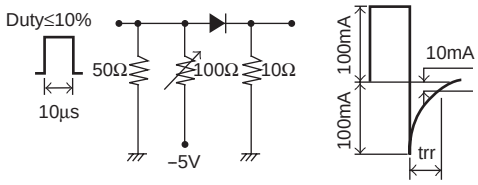
(Top view)

Switching Time Test Circuit

[TR]

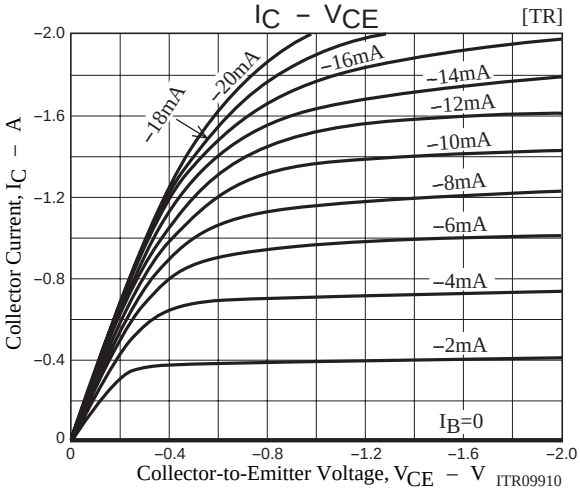


[SBD]

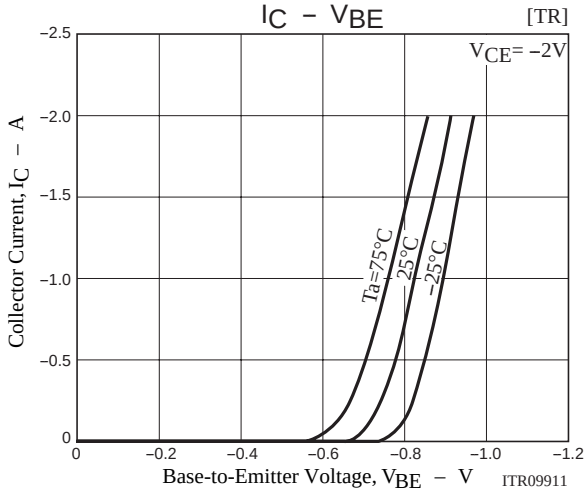


$-20I_{B1}=20I_{B2}=I_C=-500mA$

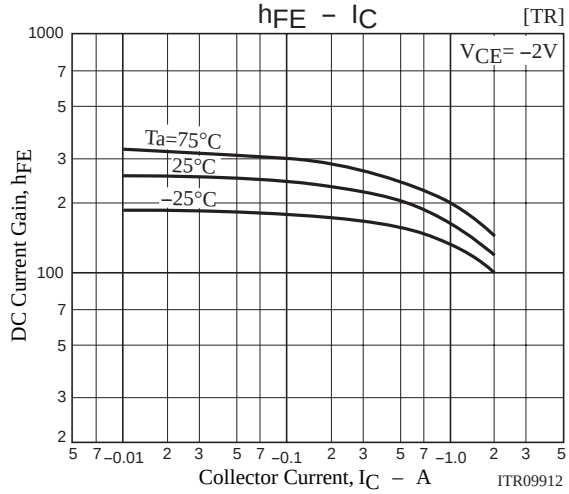
I_C – V_{CE} [TR]



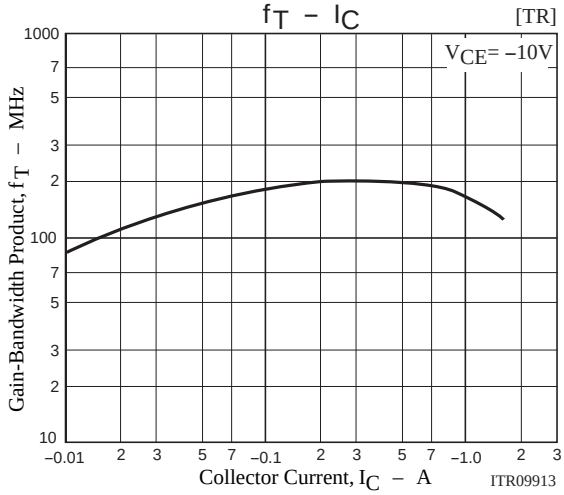
I_C – V_{BE} [TR]



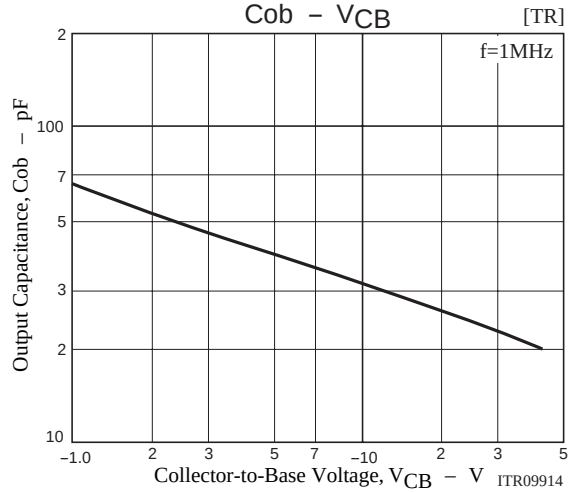
h_{FE} – I_C [TR]



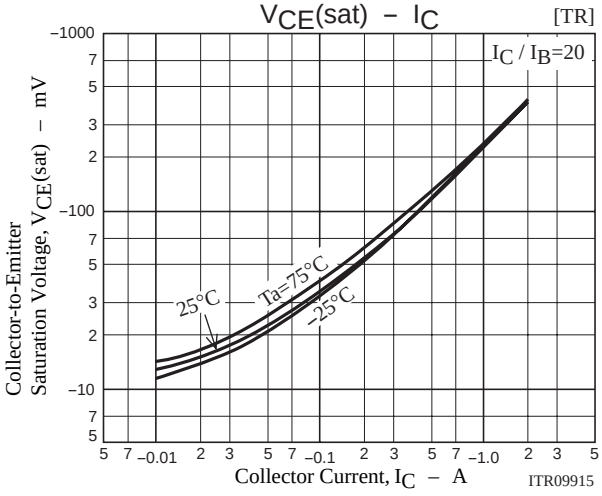
f_T – I_C [TR]



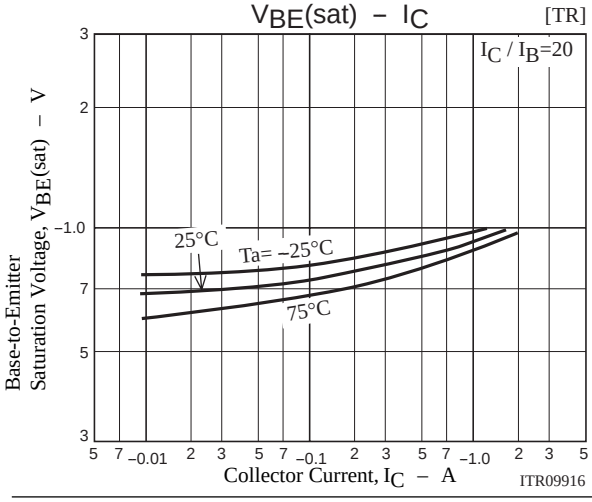
Cob – V_{CB} [TR]



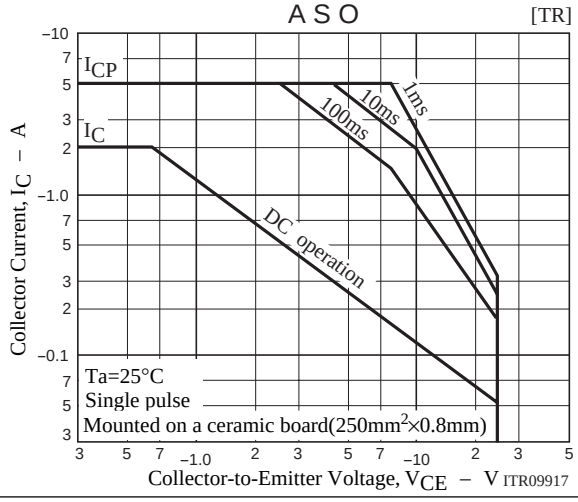
V_{CE}(sat) – I_C [TR]



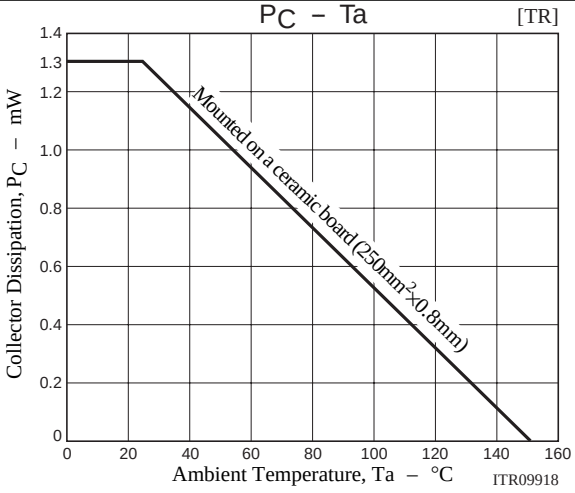
V_{BE}(sat) – I_C [TR]



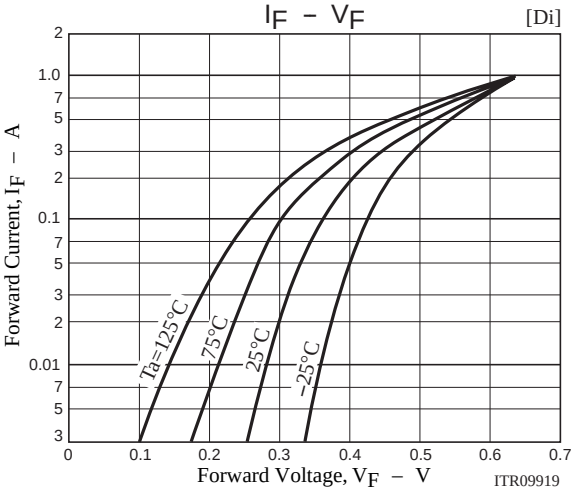
A S O [TR]



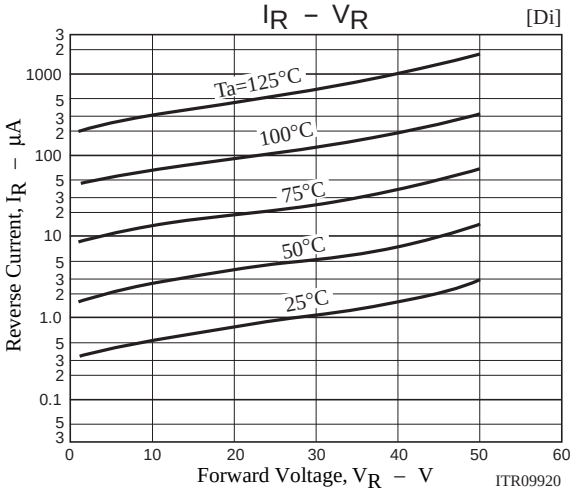
P_C – Ta [TR]



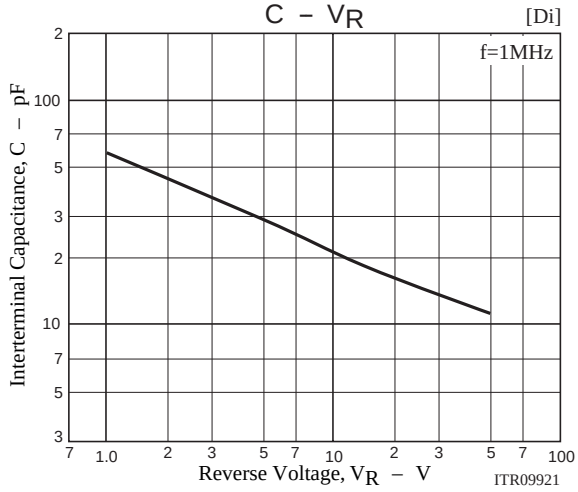
I_F – V_F [Di]



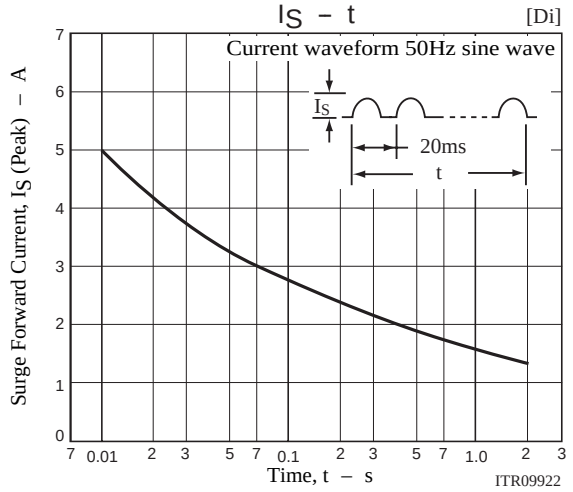
I_R – V_R [Di]



C – V_R [Di]



I_S – t [Di]



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