



SANYO Semiconductors

DATA SHEET

MCH6731

PNP Epitaxial Planar Silicon Transistor

Schottky Barrier Diode

DC / DC Converter Applications**Features**

- Composite type with a PNP transistor and a Schottky barrier diode contained in one package facilitating high-density mounting.
- Ultrasmall package permitting applied sets to be small and slim (mounting height 0.85mm).

Specifications**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V _{CBO}		-15	V
Collector-to-Emitter Voltage	V _{CEO}		-12	V
Emitter-to-Base Voltage	V _{EBO}		-5	V
Collector Current	I _C		-1	A
Collector Current (Pulse)	I _{CP}		-2	A
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² X0.8mm)	0.85	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _{RRM}		15	V
Non-repetitive Peak Reverse Surge Voltage	V _{RSM}		15	V
Average Output Current	I _O		0.5	A
Surge Current	I _{FSM}	50Hz sine wave, 1 cycle	2	A
Junction Temperature	T _J		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

Marking : PF

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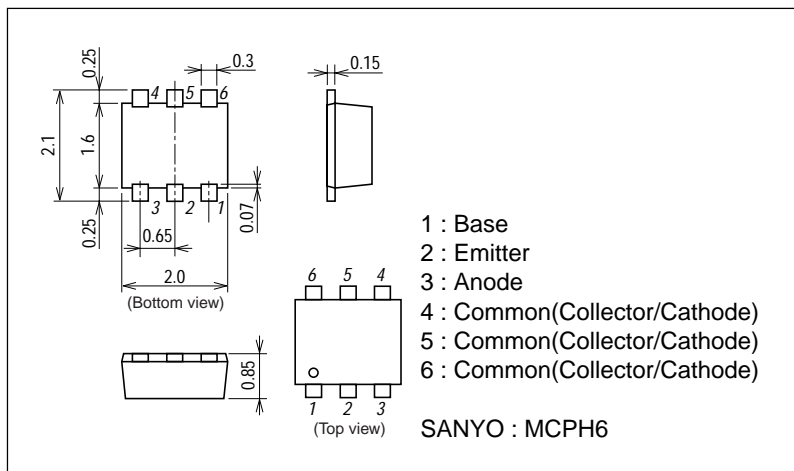
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	$V_{CB}=-12V, I_E=0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4V, I_C=0$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-2V, I_C=-10mA$	300		700	
Gain-Bandwidth Product	f_T	$V_{CE}=-2V, I_C=-50mA$		450		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10V, f=1MHz$		6		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-400mA, I_B=-20mA$		-120	-180	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-400mA, I_B=-20mA$		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-12			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		75		ns
Fall Time	t_f	See specified Test Circuit.		15		ns
[Di]						
Reverse Voltage	V_R	$I_R=0.5mA$	12			V
Forward Voltage	V_F	$I_F=0.5A$		0.40	0.45	V
Reverse Current	I_R	$V_R=6V$			90	μA
Interterminal Capacitance	C	$V_R=10V, f=1MHz$		13		pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=100mA$, See specified Test Circuit.			10	ns

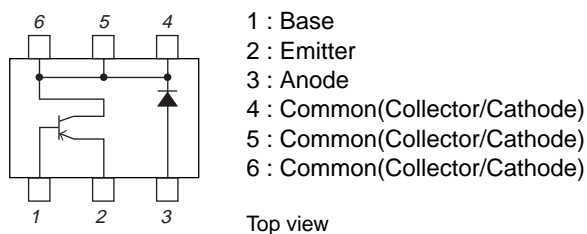
Package Dimensions

unit : mm

2191A

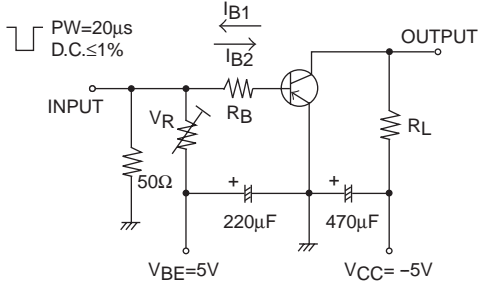


Electrical Connection



Switching Time Test Circuit

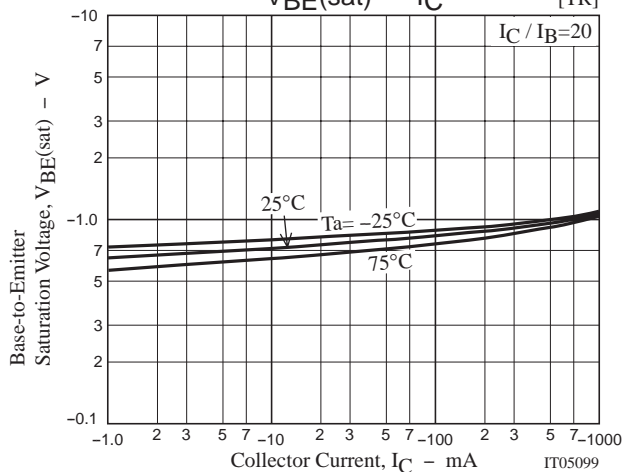
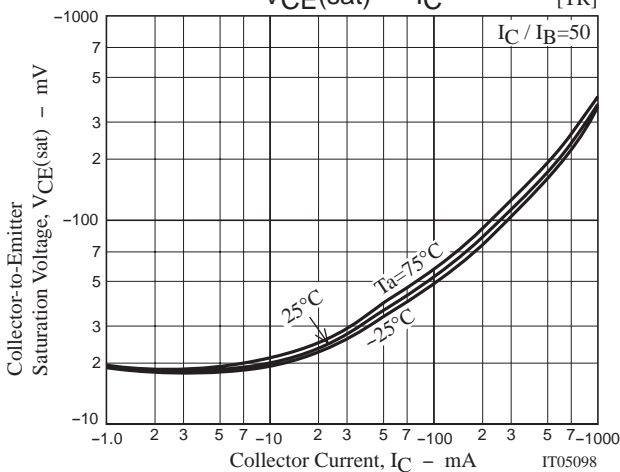
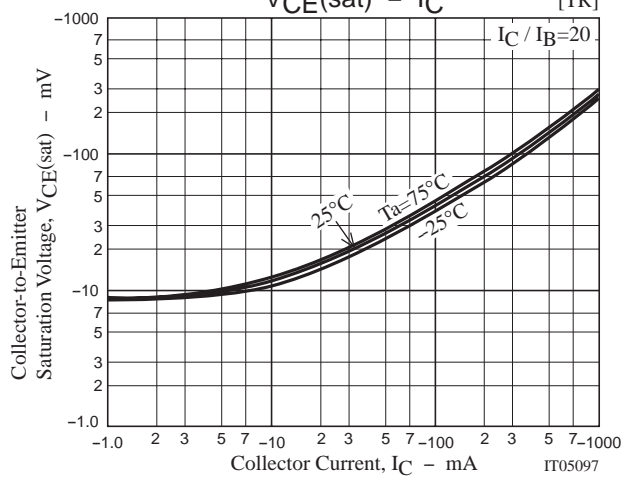
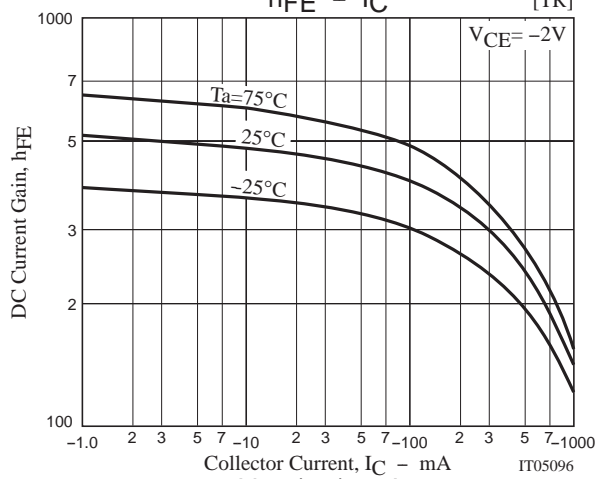
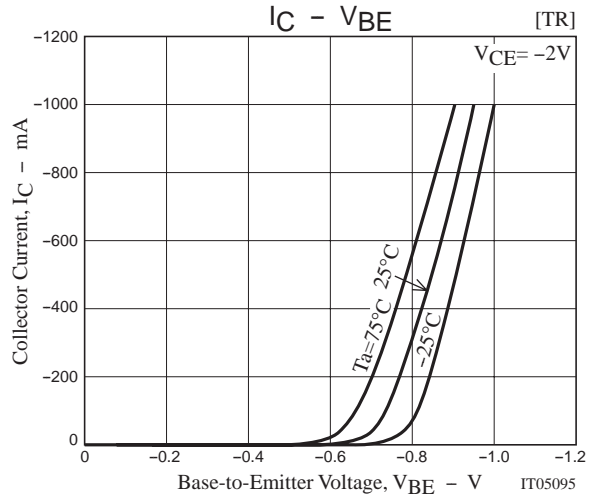
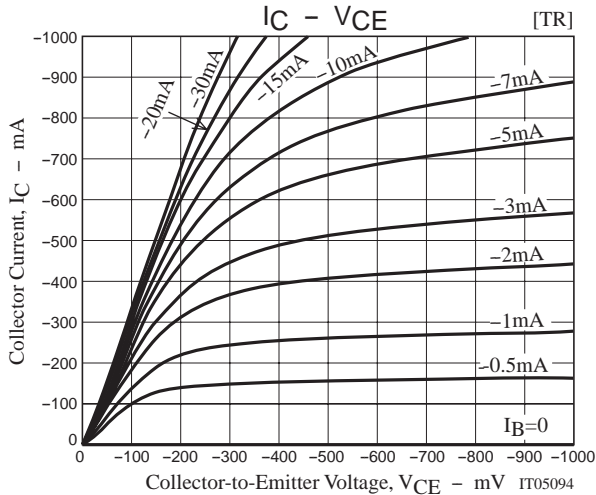
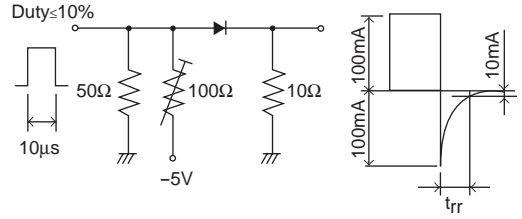
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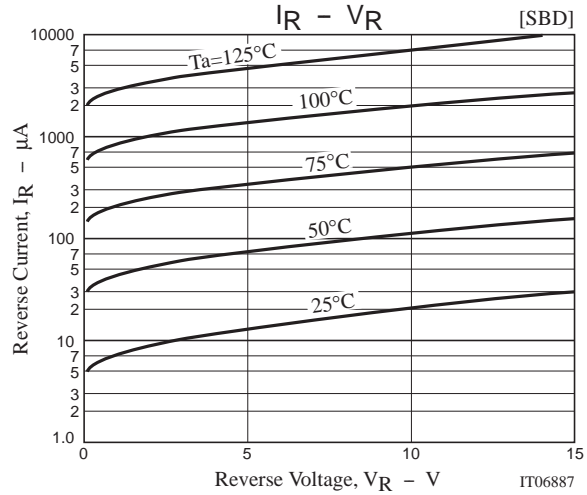
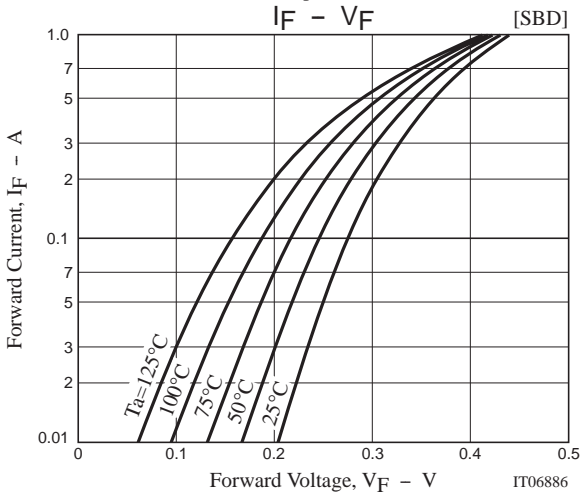
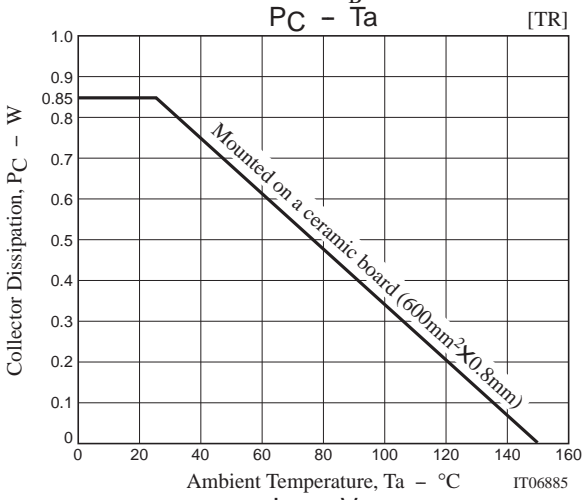
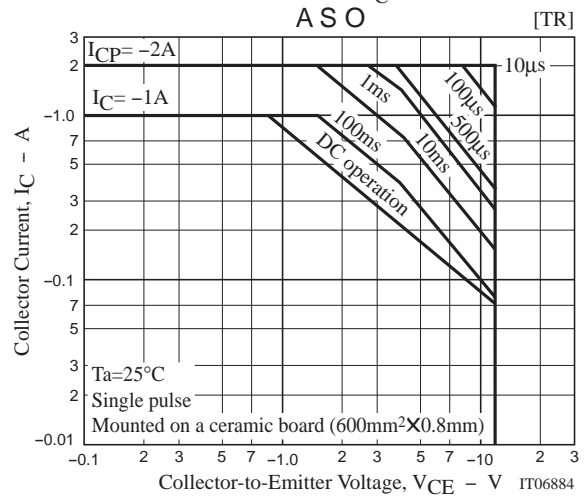
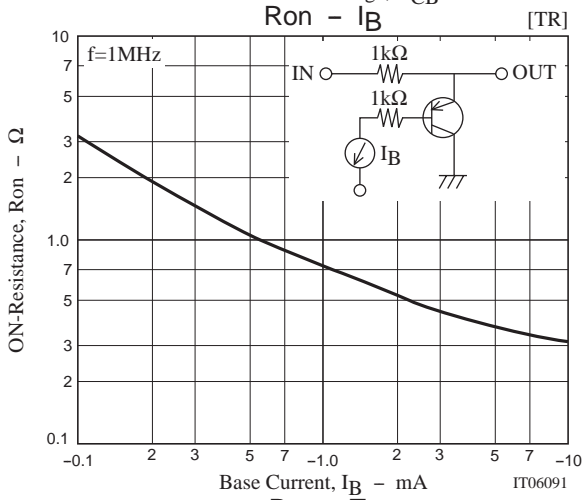
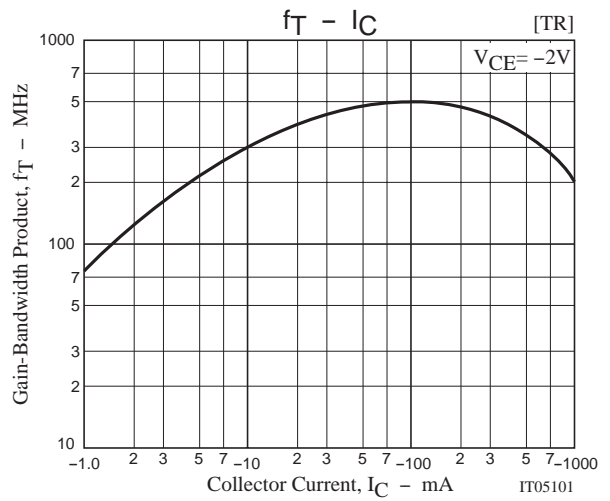
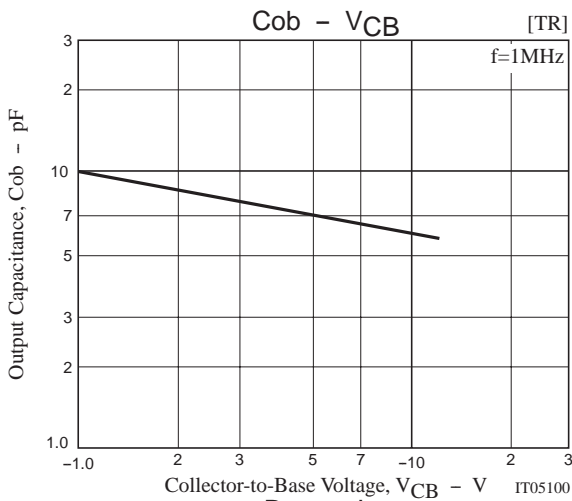
$I_C = 20I_{B1} = -20I_{B2} = -400\text{mA}$

t_{rr} Specified Circuit

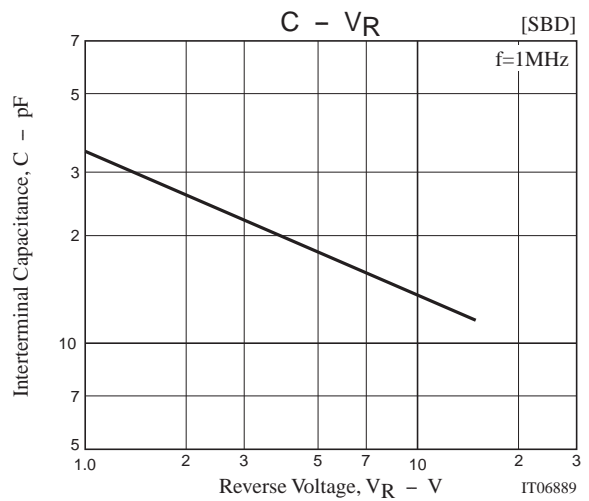
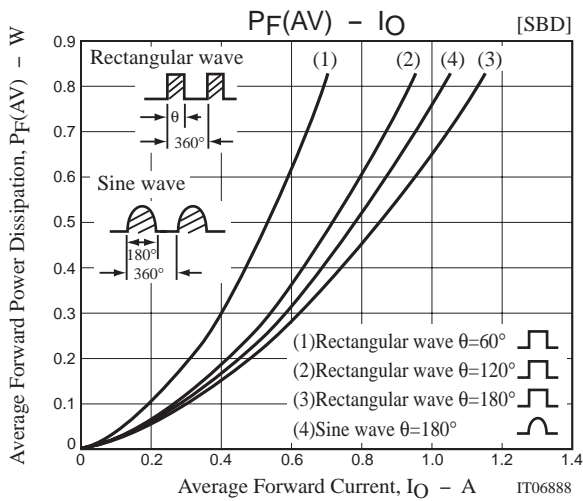
[Di]



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