

Ordering number : ENN6684A

PNP Epitaxial Planar Silicon Transistor
Schottky Barrier Diode



MCH6702

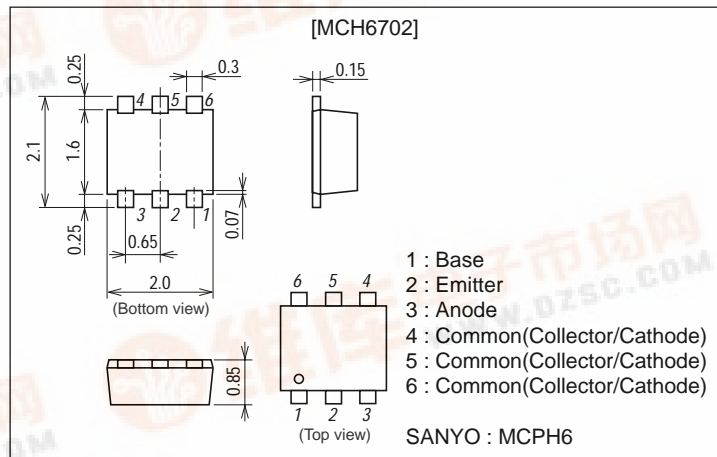
DC/DC Converter Applications

Features

- Composite type with a PNP transistor and a Schottky barrier diode contained in one package facilitating high-density mounting.
- The MCH6702 consists of two chips which are equivalent to the MCH6101 and SBS006, respectively.
- The ultrasmall package facilitates miniaturization in end products. (mounting height 0.85mm).

Package Dimensions

unit : mm
2191A



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}		-15	V
Emitter-to-Base Voltage	V _{EBO}		-5	V
Collector Current	I _C		-1.5	A
Collector Current (Pulse)	I _{CP}		-3	A
Base Current	I _B		-300	mA
Collector Dissipation	P _C	Mounted on a ceramic board(600mm ² X0.8mm)	1.0	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V _R RM		30	V
Non-repetitive Peak Reverse Surge Voltage	V _R S		30	V
Average Output Current	I _O		0.7	A
Surge Current	I _{FSM}	50Hz sine wave, 1 cycle	10	A
Junction Temperature	T _j		-55 to +125	°C
Storage Temperature	T _{stg}		-55 to +125	°C

Marking : PB

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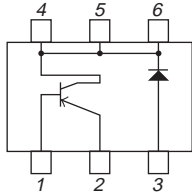


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Electrical Characteristics at $T_a=25^\circ\text{C}$

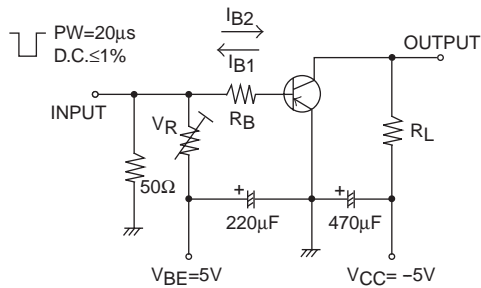
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	$V_{CB}=-12\text{V}, I_E=0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=-100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=-2\text{V}, I_C=-300\text{mA}$		350		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$		17		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-750\text{mA}, I_B=-15\text{mA}$		-120	-180	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-750\text{mA}, I_B=-15\text{mA}$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Turn-ON Time	t_{on}	See specified Test Circuit		50		ns
Storage Time	t_{stg}	See specified Test Circuit		90		ns
Fall Time	t_f	See specified Test Circuit		15		ns
[Di]						
Reverse Voltage	V_R	$I_R=0.5\text{mA}$	30			V
Forward Voltage	V_{F1}	$I_F=0.3\text{A}$		0.35	0.40	V
	V_{F2}	$I_F=0.5\text{A}$		0.42	0.47	V
	V_{F3}	$I_F=0.7\text{A}$		0.5	0.55	V
Reverse Current	I_R	$V_R=10\text{V}$			200	μA
Interterminal Capacitance	C	$V_R=10\text{V}, f=1\text{MHz}$		20		pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=100\text{mA}$, See specified Test Circuit			10	ns

Electrical Connection



Switching Time Test Circuit

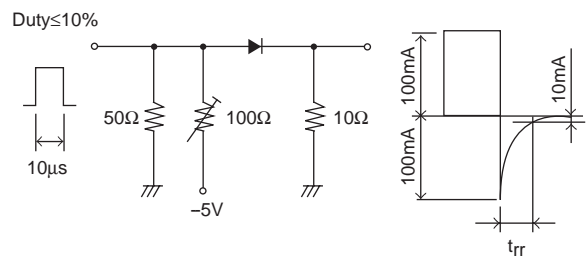
[TR]



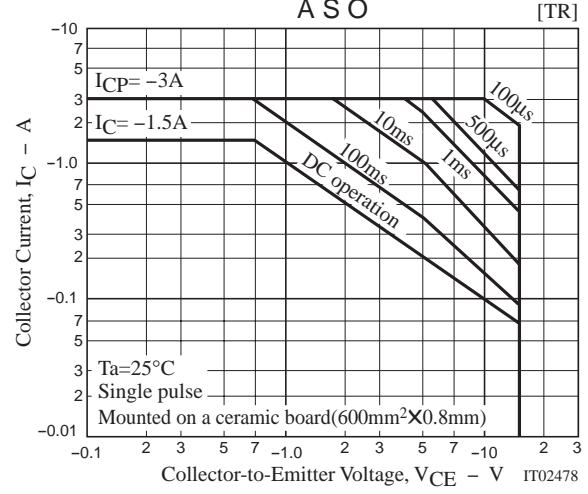
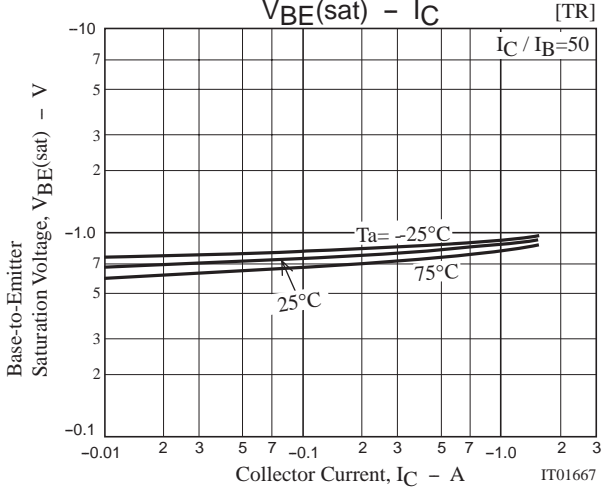
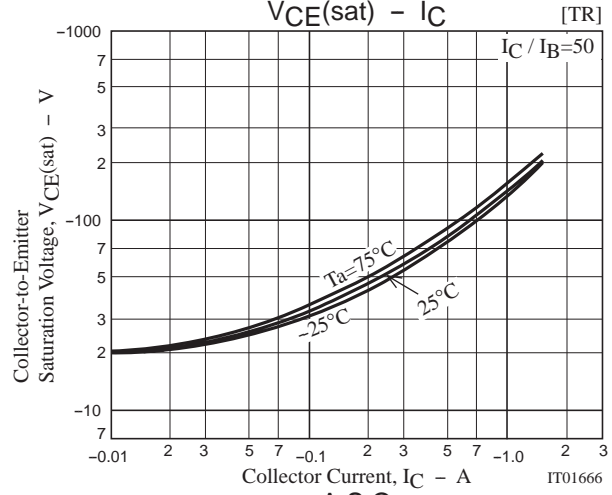
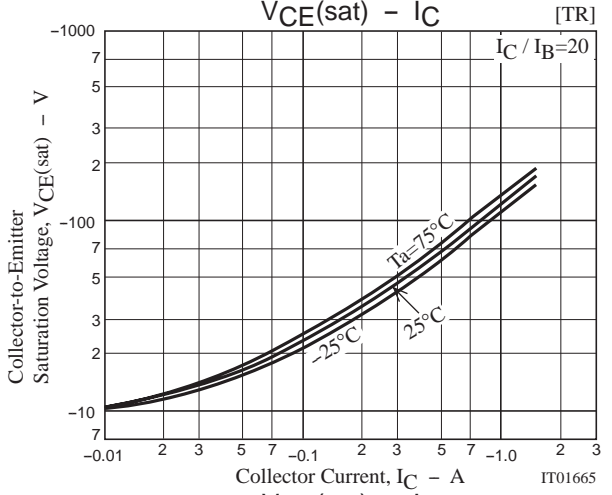
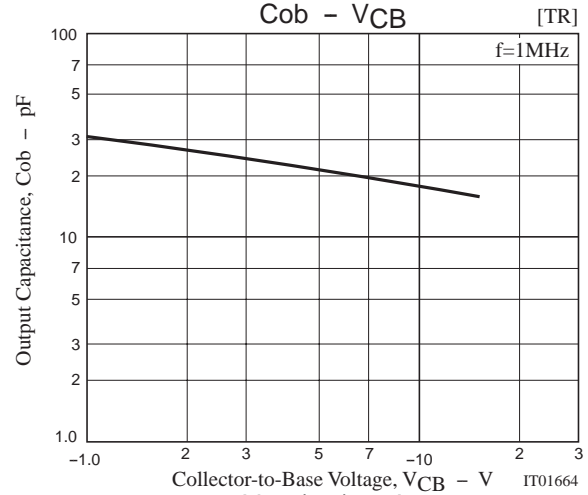
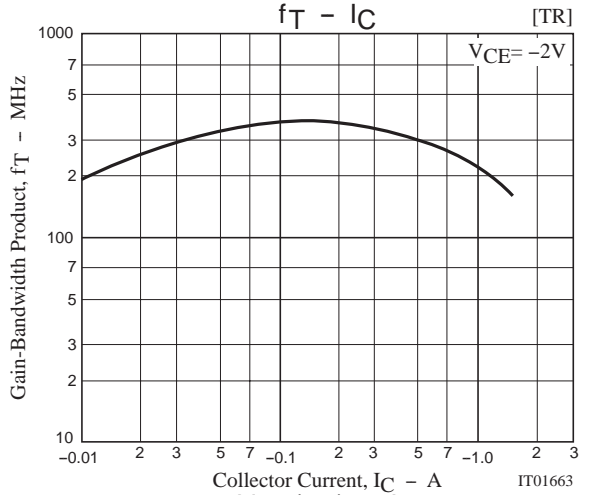
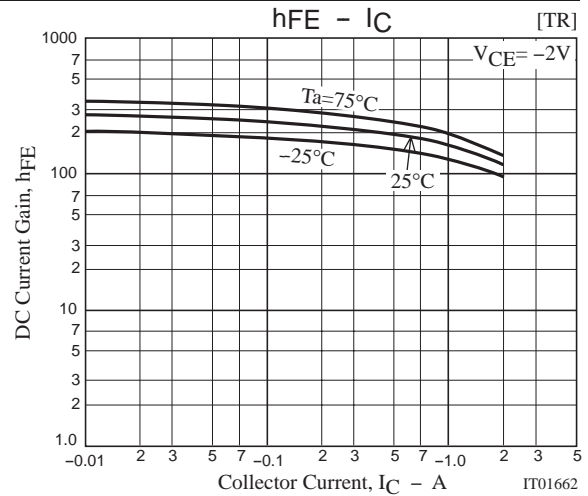
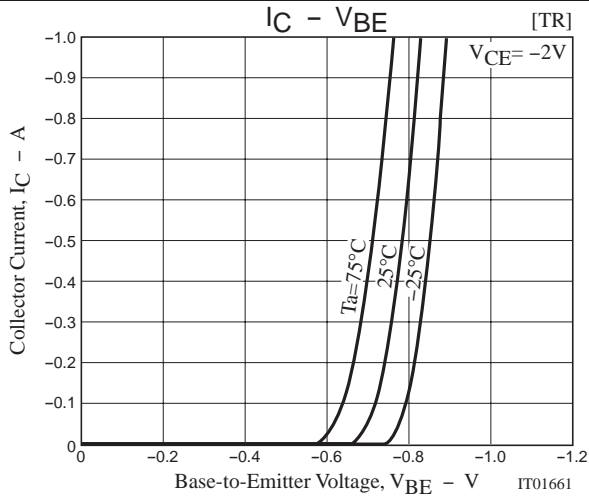
$$I_C = -20I_{B1} = 20I_{B2} = -750\text{mA}$$

t_{rr} Specified Circuit

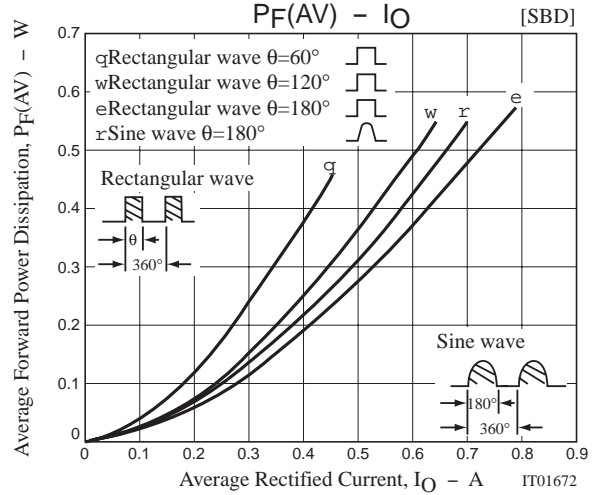
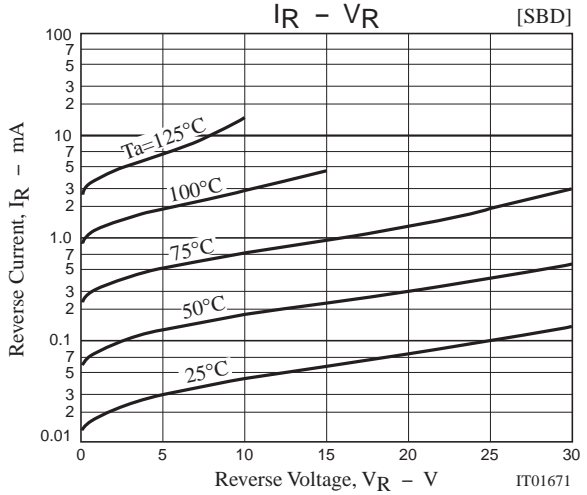
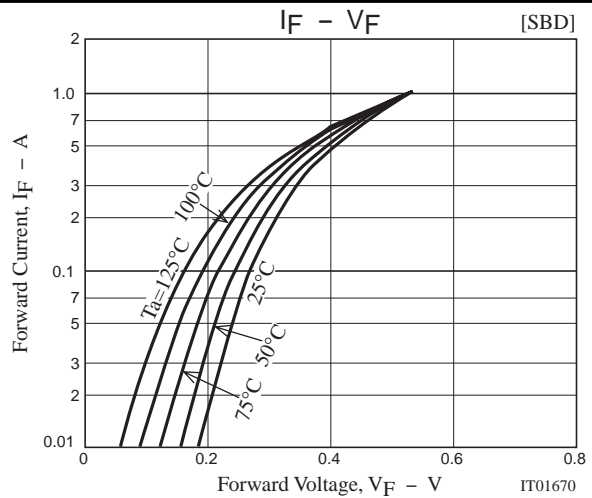
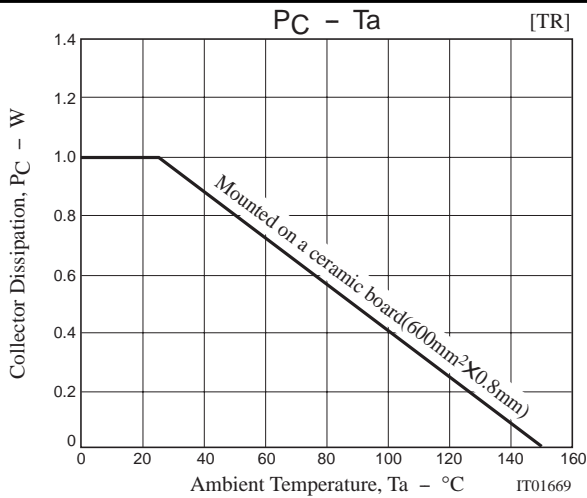
[Di]



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