Ordering number : ENN6684A

PNP Epitaxial Planar Silicon Transistor
Schottky Barrier Diode

MCH6702

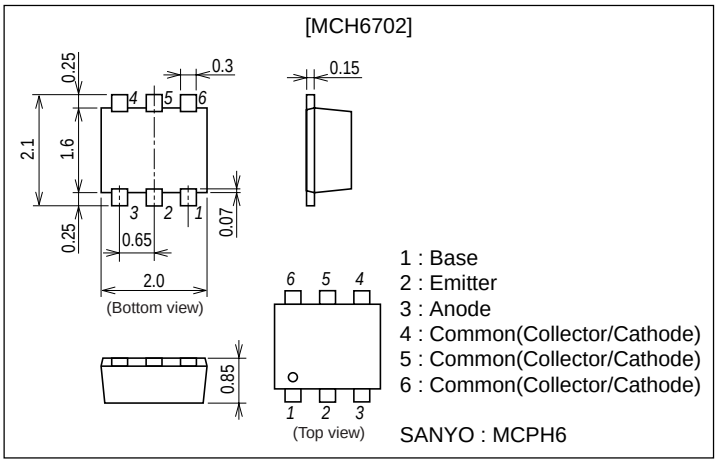
DC/DC Converter Applications

Features

- Composite type with a PNP transistor and a Schottky barrier diode contained in one package facilitatiing high-density mounting.
- The MCH6702 consists of two chips which are equivaient 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

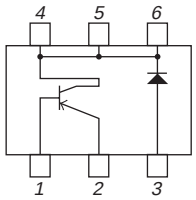
Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V_{CBO}		−15	V
Collector-to-Emitter Voltage	V_{CEO}		−15	V
Emitter-to-Base Voltage	V_{EBO}		−5	V
Collector Current	I_C		−1.5	A
Collector Current (Pulse)	I_{CP}		−3	A
Base Current	I_B		−300	mA
Collector Dissipation	P_C	Mounted on a ceramic board(600mm²×0.8mm)	1.0	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V_{RRM}		30	V
Non-repetitive Peak Reverse Surge Voltage	V_{RSM}		30	V
Average Output Current	I_O		0.7	A
Surge Current	I_{FSM}	50Hz sine wave, 1 cycle	10	A
Junction Temperature	Tj		−55 to +125	°C
Storage Temperature	Tstg		−55 to +125	°C

Marking : PB

Electrical Characteristics at Ta=25°C

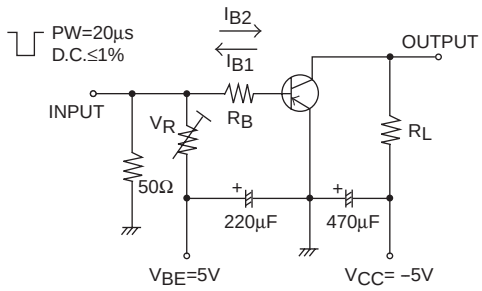
Parameter	Symbol	Conditions	Rathings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	I_{CBO}	V_{CB}=-12V, I_E=0			-0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=-4V, I_C=0			-0.1	μA
DC Current Gain	h_{FE}	V_{CE}=-2V, I_C=-100mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=-2V, I_C=-300mA		350		MHz
Output Capacitance	Cob	V_{CB}=-10V, f=1MHz		17		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=-750mA, I_B=-15mA		-120	-180	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=-750mA, I_B=-15mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1mA, R_{BE}=∞	-15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10μA, 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=0.5mA	30			V
Forward Voltage	V_F1	I_F=0.3A		0.35	0.40	V
	V_F2	I_F=0.5A		0.42	0.47	V
	V_F3	I_F=0.7A		0.5	0.55	V
Reverse Current	I_R	V_R=10V			200	μA
Interterminal Capacitance	C	V_R=10V, f=1MHz		20		pF
Reverse Recovery Time	t_{rr}	I_F=I_R=100mA, See specified Test Circuit			10	ns

Electrical Connection



Switching Time Test Circuit

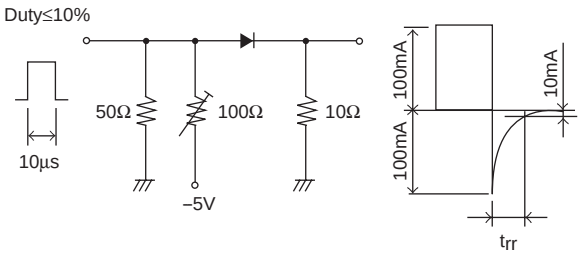
[TR]



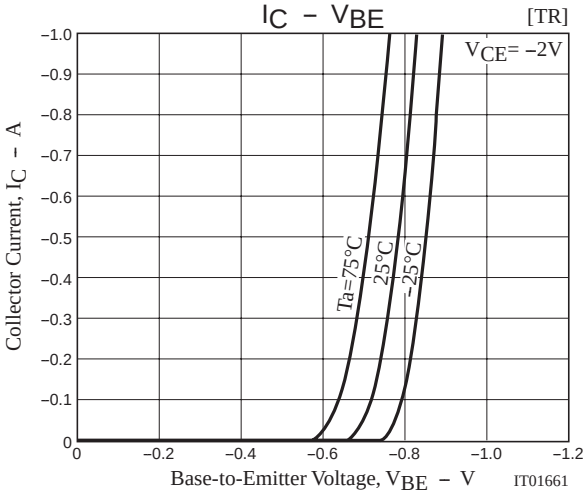
I_C= −20I_{B1}=20I_{B2}= −750mA

t_{rr} Specified Circuit

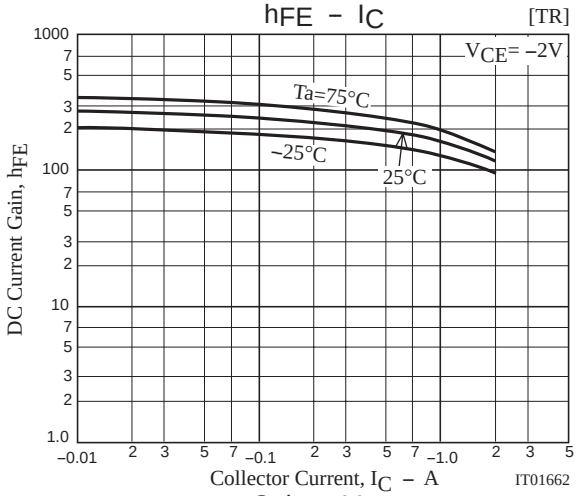
[Di]



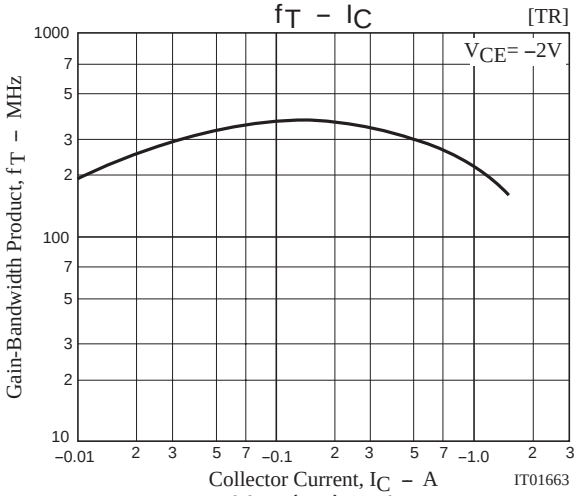
I_C – V_{BE} [TR]



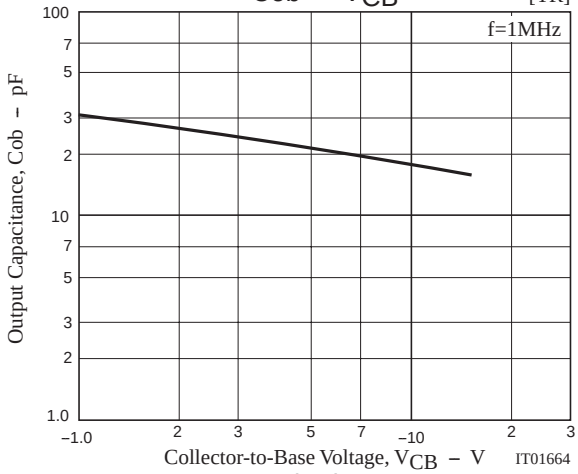
h_{FE} – I_C [TR]



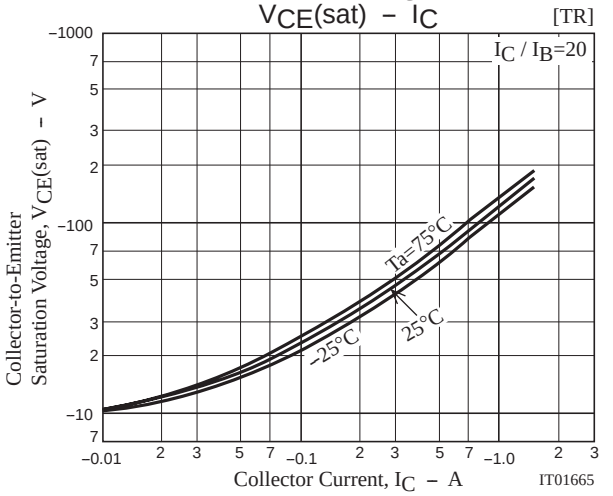
f_T – I_C [TR]



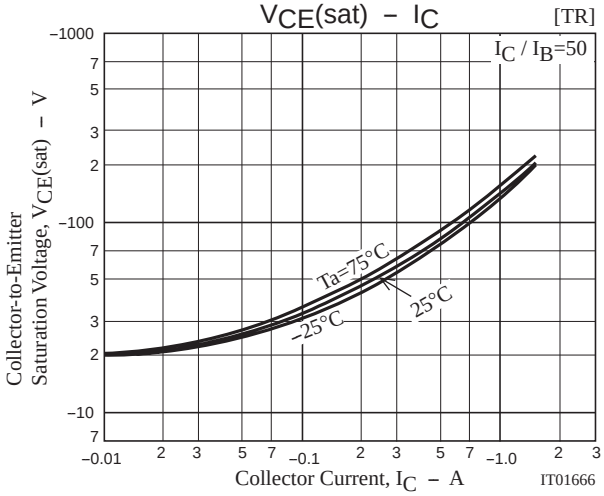
Cob – V_{CB} [TR]



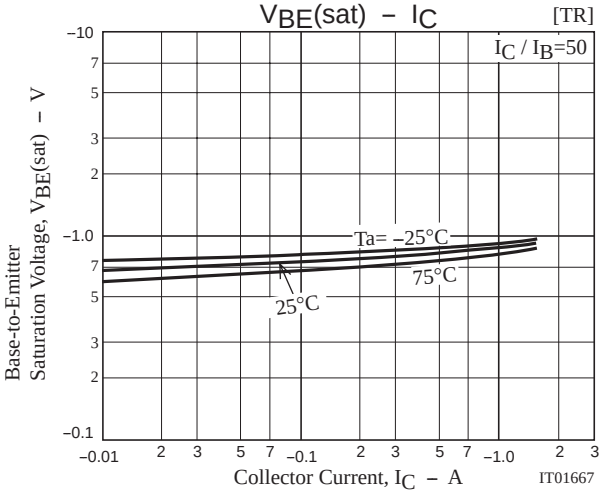
V_{CE}(sat) – I_C [TR]



V_{CE}(sat) – I_C [TR]



V_{BE}(sat) – I_C [TR]



A S O [TR]