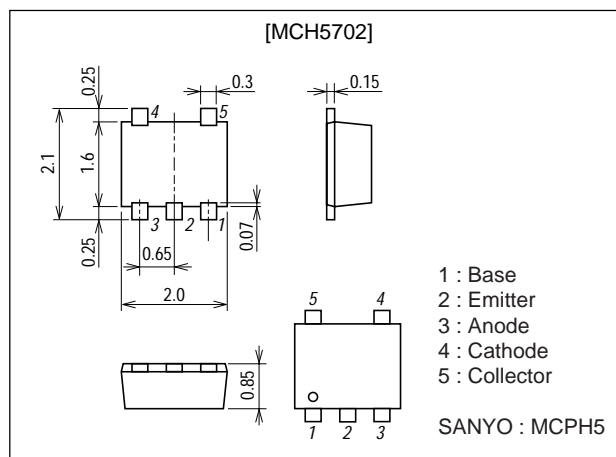


**MCH5702****DC / DC Converter Applications****Features**

- Composite type with an NPN transistor and a Schottky barrier diode contained in one package facilitating high-density mounting.
- The MCH5702 consists of two chips which are equivalent to the MCH6201 and the SBS006, respectively.
- Ultrasmall package (0.85mm high when mounted) facilitates miniaturization in end products.

**Package Dimensions**unit : mm  
2200**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[TR]				
Collector-to-Base Voltage	V <sub>CB0</sub>		15	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		15	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		5	V
Collector Current	I <sub>C</sub>		1.5	A
Collector Current (Pulse)	I <sub>CP</sub>		3	A
Base Current	I <sub>B</sub>		300	mA
Collector Dissipation	P <sub>C</sub>	Mounted on a ceramic board (600mm <sup>2</sup> ×0.8mm)	0.7	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>		30	V
Non-repetitive Peak Reverse Surge Voltage	V <sub>RSM</sub>		30	V
Average Rectified Current	I <sub>O</sub>		0.7	A
Surge Current	I <sub>FSM</sub>	50Hz sine wave, 1cycle	10	A
Junction Temperature	T <sub>J</sub>		-55 to +125	°C
Storage Temperature	T <sub>stg</sub>		-55 to +125	°C

Marking : PC

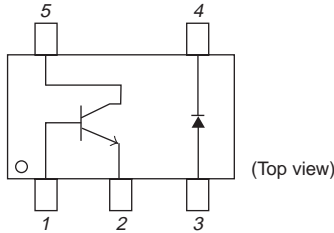
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- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

# MCH5702

## Electrical Characteristics at Ta=25°C

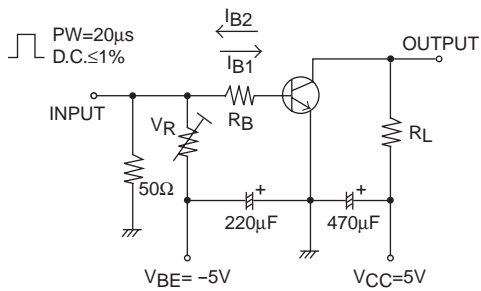
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR]						
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=12V, I_E=0$			0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=2V, I_C=100mA$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE}=2V, I_C=300mA$		450		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		9		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=750mA, I_B=15mA$		130	200	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	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	15			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.		40		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		180		ns
Fall Time	$t_f$	See specified Test Circuit.		20		ns
[SBD]						
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	$\mu A$
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

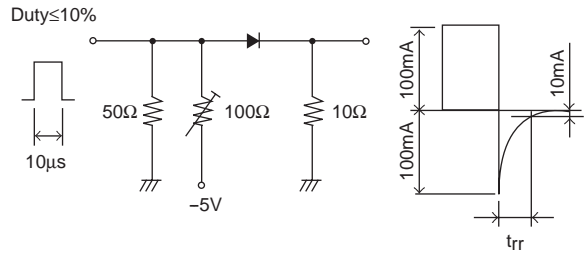
[TR]



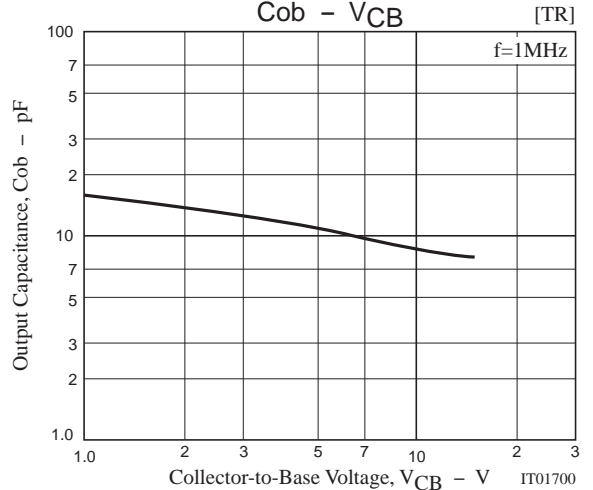
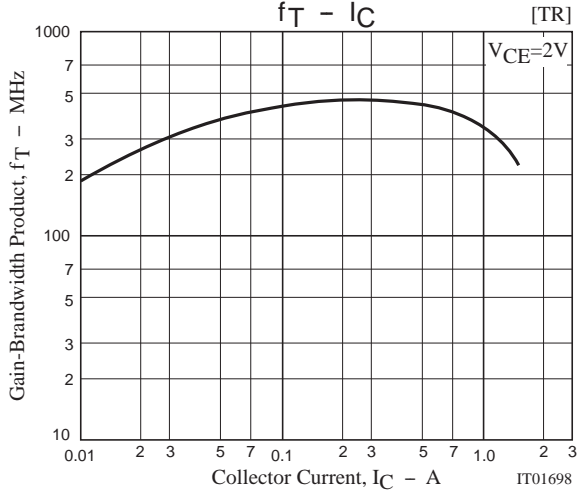
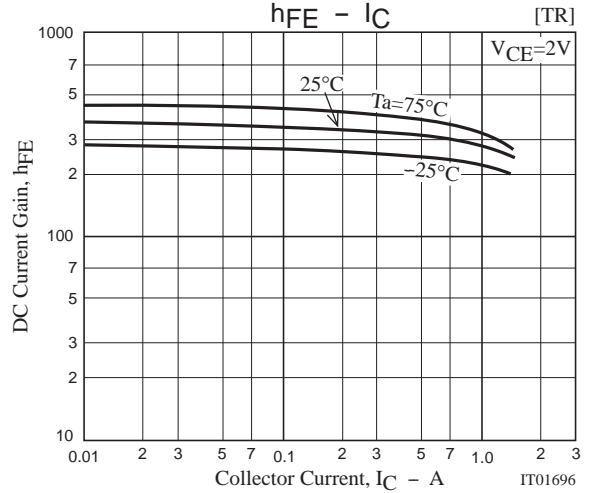
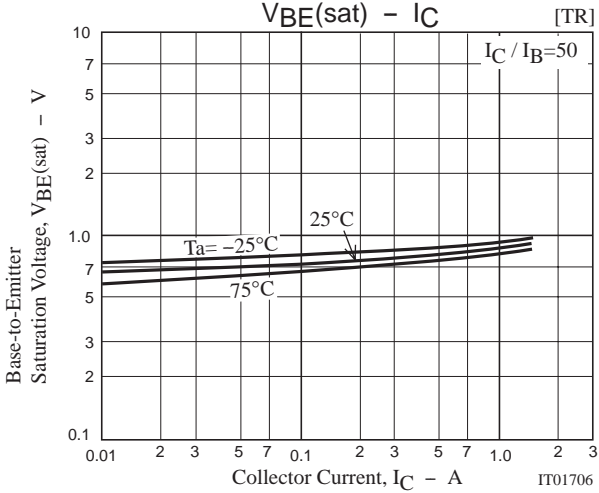
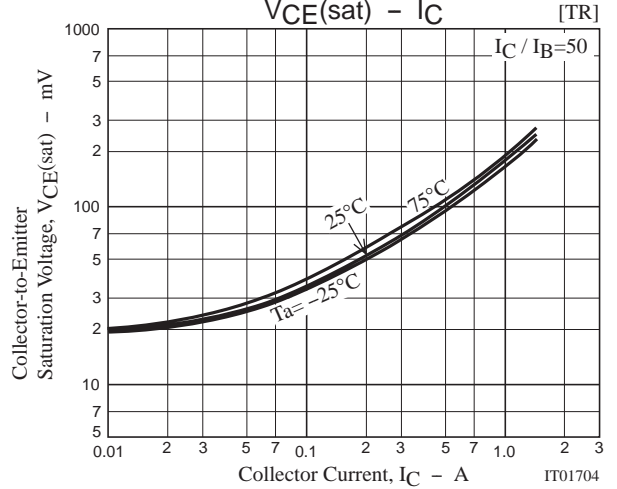
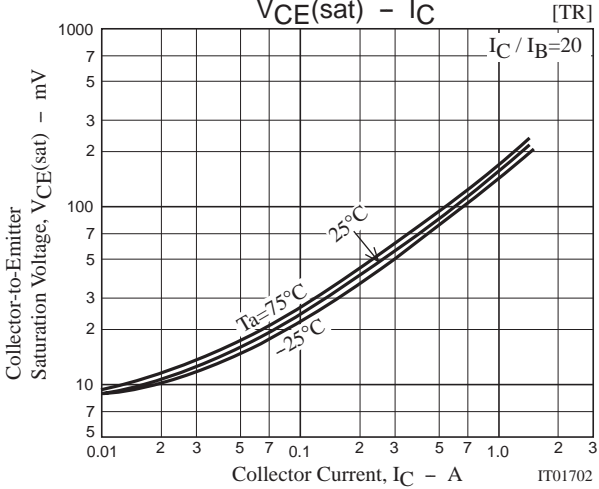
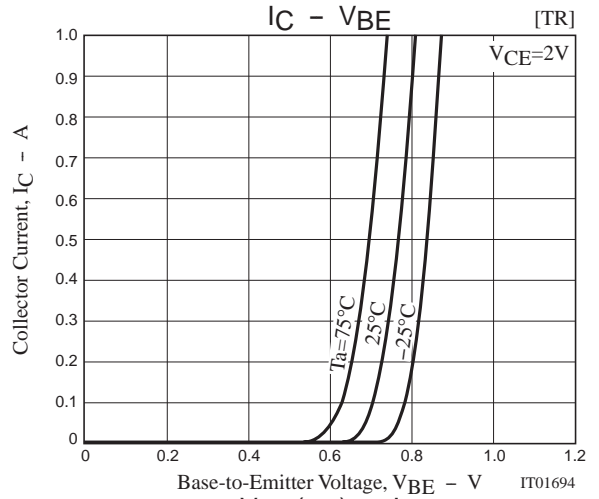
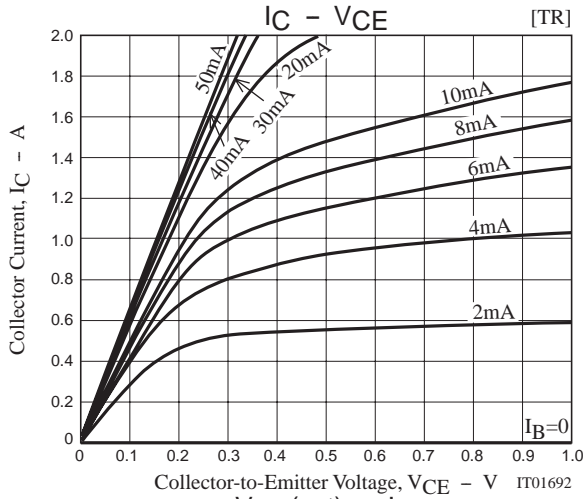
$$I_C=20I_{B1}=-20I_{B2}=750mA$$

## $t_{rr}$ Test Circuit

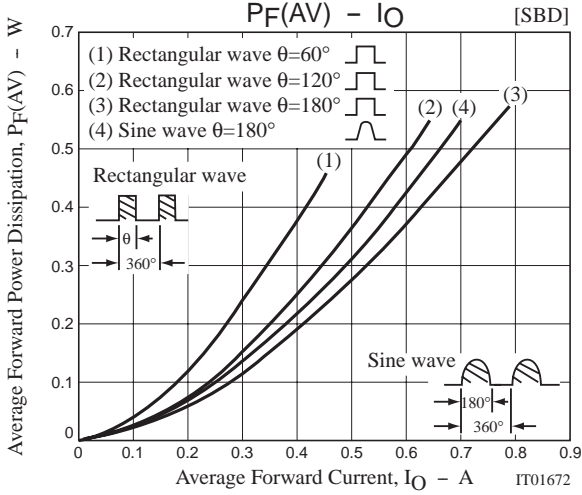
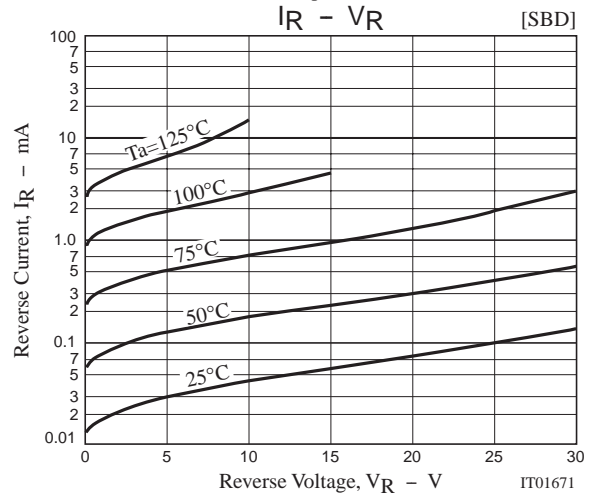
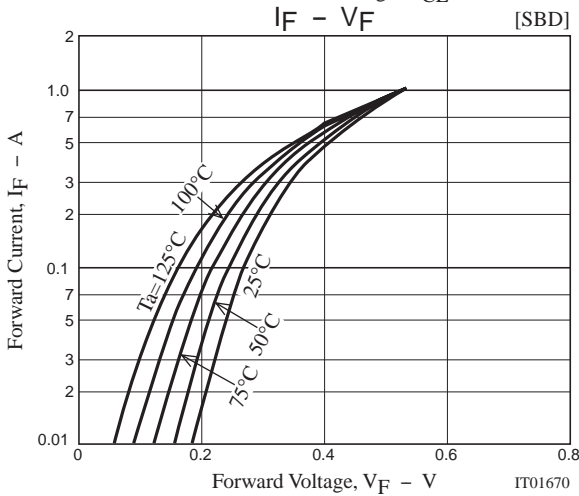
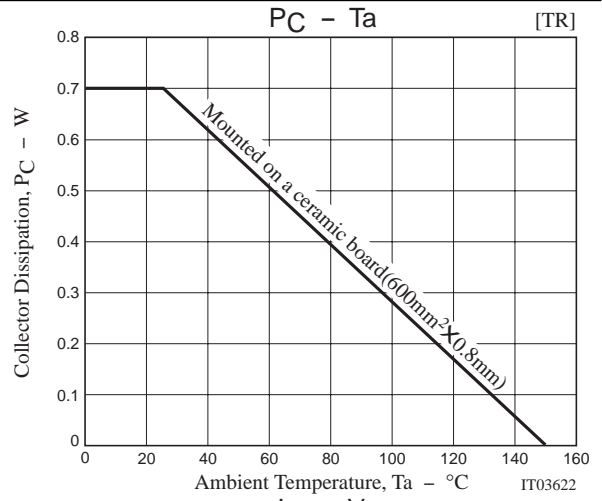
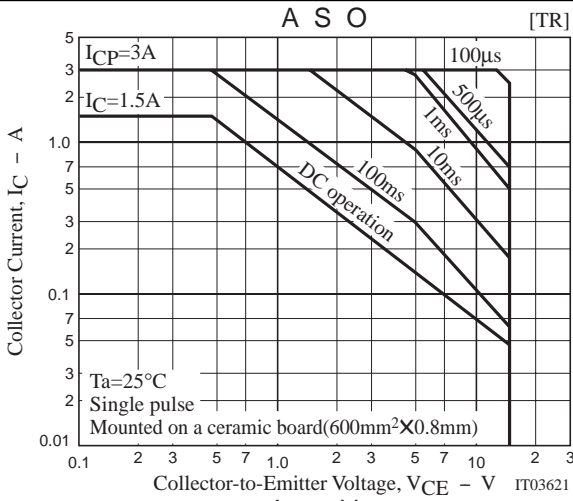
[SBD]



# MCH5702



# MCH5702



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