



MCH3206

 — NPN Epitaxial Planar Silicon Transistor

DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash.

Features

- Adoption of MBIT processes.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.85mm).
- High allowable power dissipation.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		15	V
Collector-to-Emitter Voltage	V _{CE0}		15	V
Emitter-to-Base Voltage	V _{EB0}		5	V
Collector Current	I _C		3	A
Collector Current (Pulse)	I _{CP}		5	A
Base Current	I _B		600	mA
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² X0.8mm)	0.8	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =12V, I _E =0			0.1	μA
Emitter Cutoff Current	I _{EB0}	V _{EB} =4V, I _C =0			0.1	μA
DC Current Gain	h _{FE}	V _{CE} =2V, I _C =500mA	200		560	
Gain-Bandwidth Product	f _T	V _{CE} =2V, I _C =500mA		380		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		13		pF

Marking : CF

Continued on next page.

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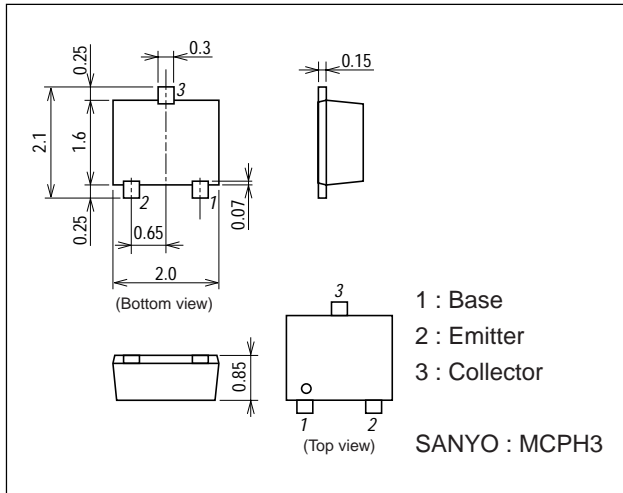
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=1.5A, I_B=30mA$		100	150	mV
	$V_{CE(sat)2}$	$I_C=3A, I_B=60mA$		180	270	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.5A, I_B=30mA$		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.		30		ns
Storage Time	t_{stg}	See specified test circuit.		210		ns
Fall Time	t_f	See specified test circuit.		11		ns

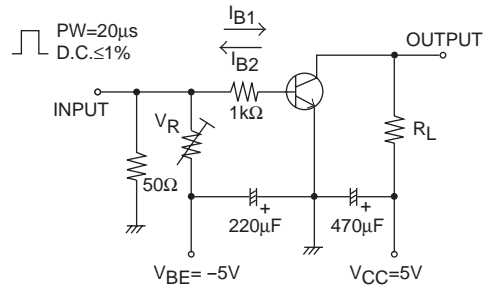
Package Dimensions

unit : mm

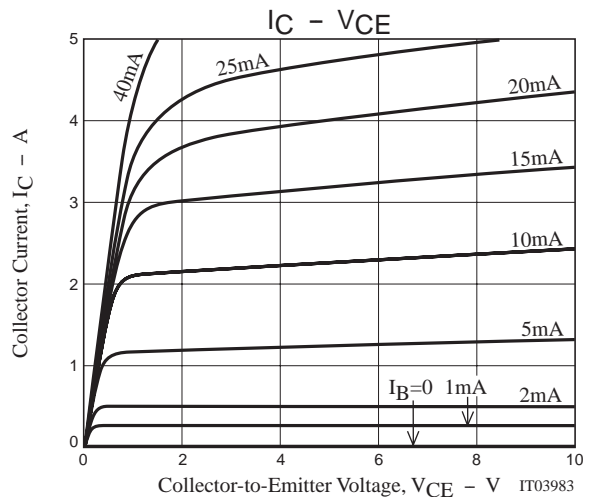
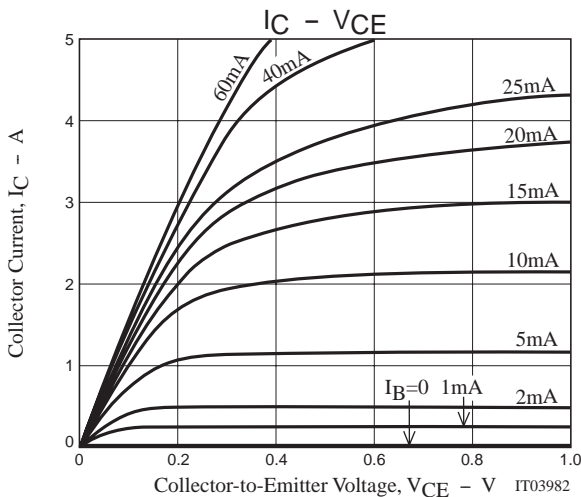
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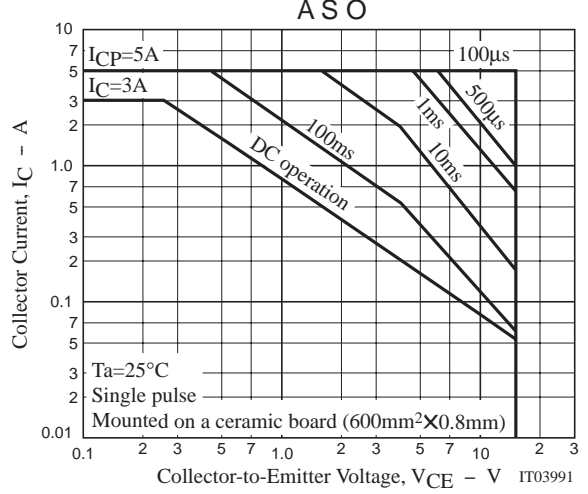
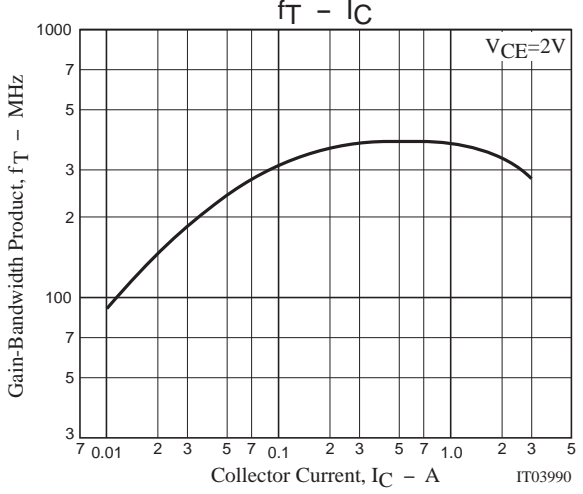
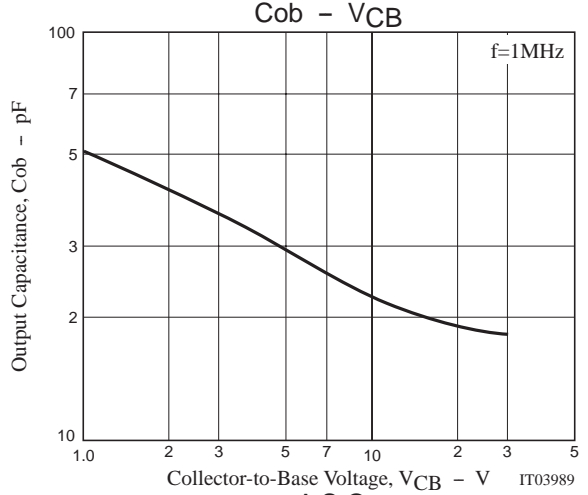
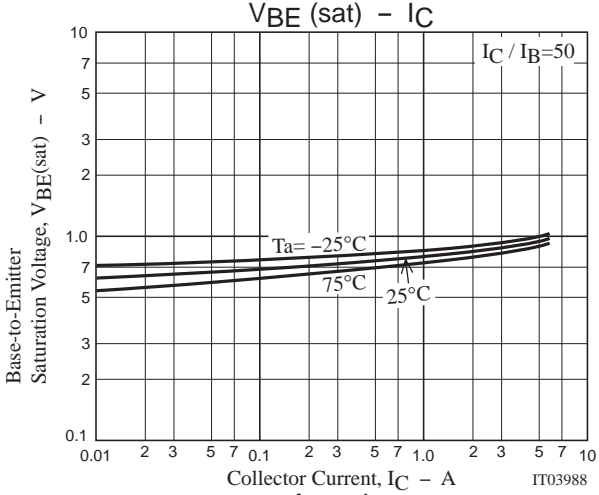
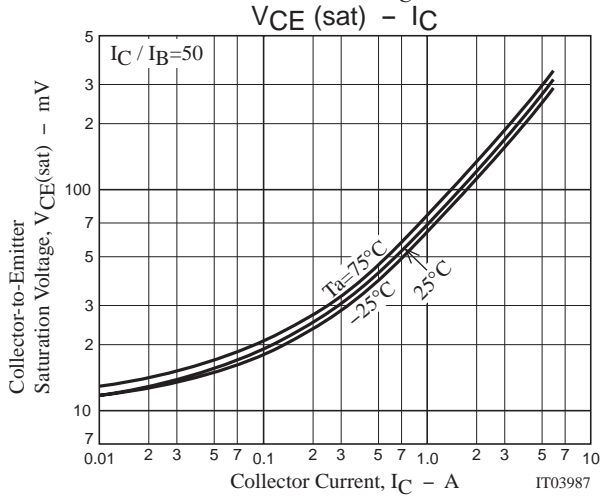
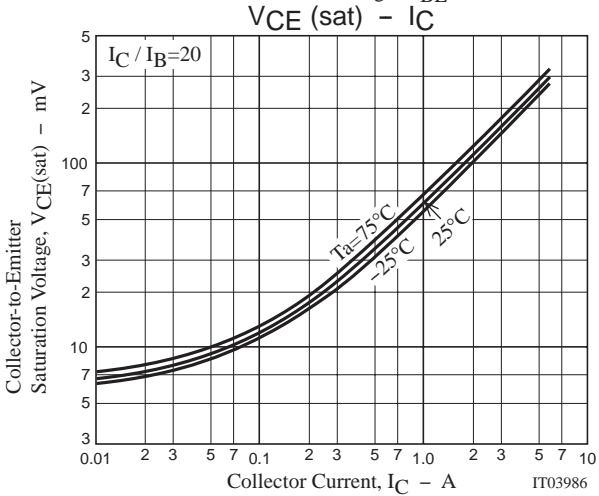
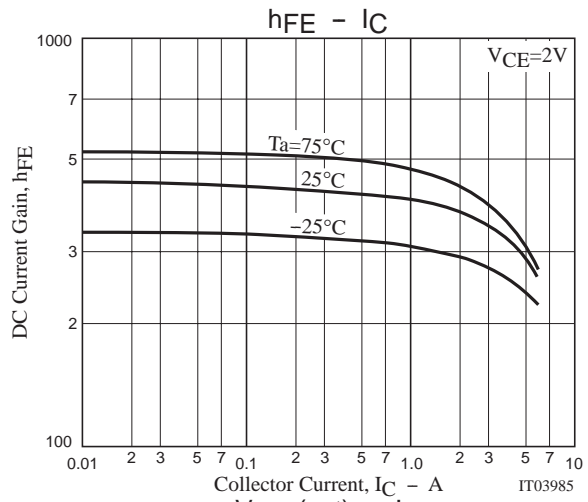
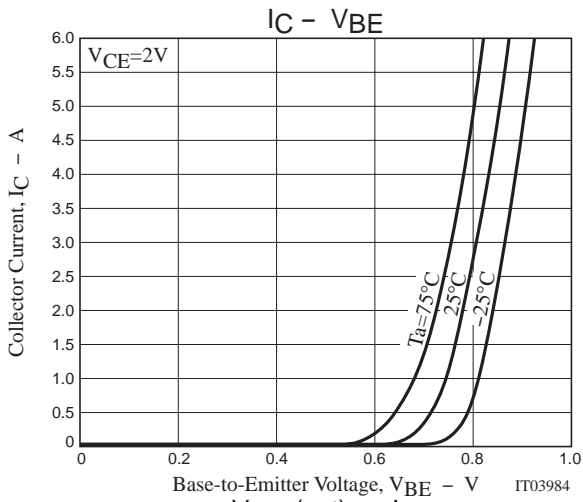
Switching Time Test Circuit

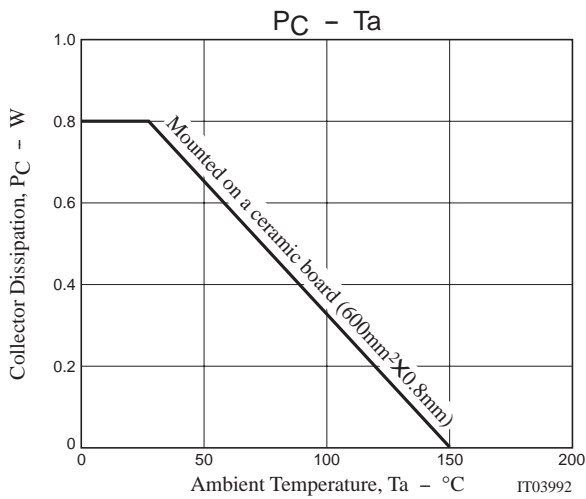


$$I_C = 20I_{B1} = -20I_{B2} = 1.5A$$



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