Ordering number : ENN7130

NPN Silicon Epitaxial Planar Transistor

MCH3206

DC / DC Converter Applications

Applications

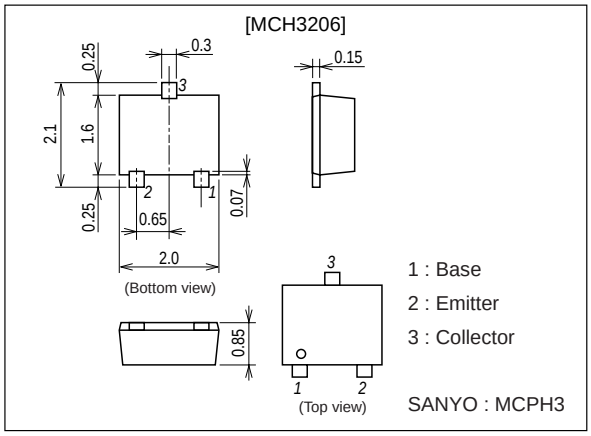
- Relay drivers, lamp drivers, motor drivers, strobes.

Features

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

Package Dimensions

unit : mm
2194A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
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		3	A
Collector Current (Pulse)	I_{CP}		5	A
Base Current	I_B		600	mA
Collector Dissipation	P_C	Mounted on a ceramic board(600mm²×0.8mm)	0.8	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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=500mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=2V, I_C=500mA		380		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		13		pF

Marking : CF

Continued on next page.

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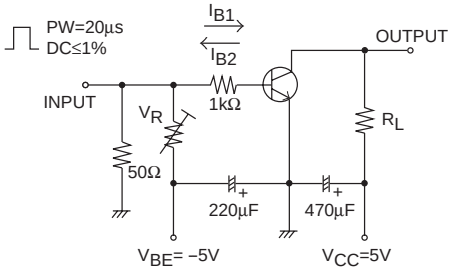
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

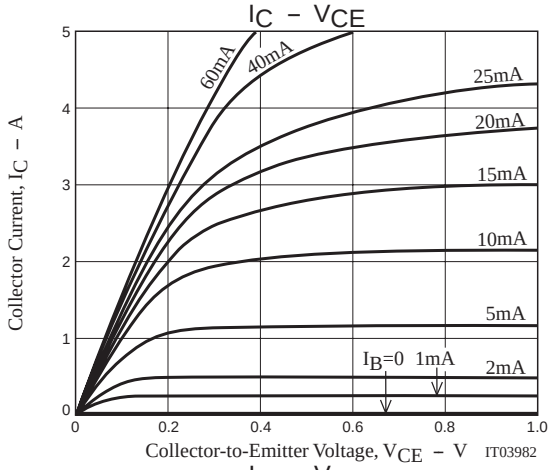
Continued from preceding page.

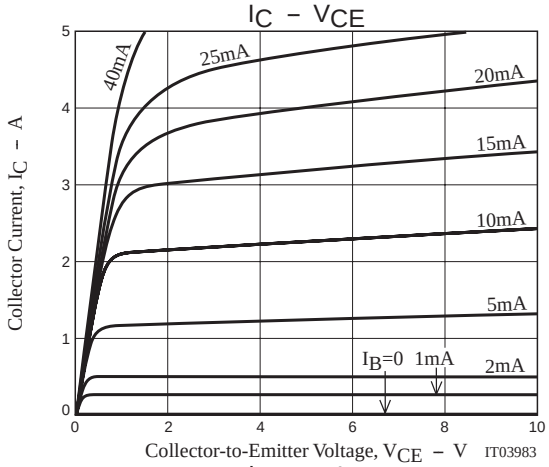
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=1.5A, I_B=30mA		100	150	mV
	V_{CE}(sat)2	I_C=3A, I_B=60mA		180	270	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=1.5A, I_B=30mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=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.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		210		ns
Fall Time	t_f	See specified Test Circuit.		11		ns

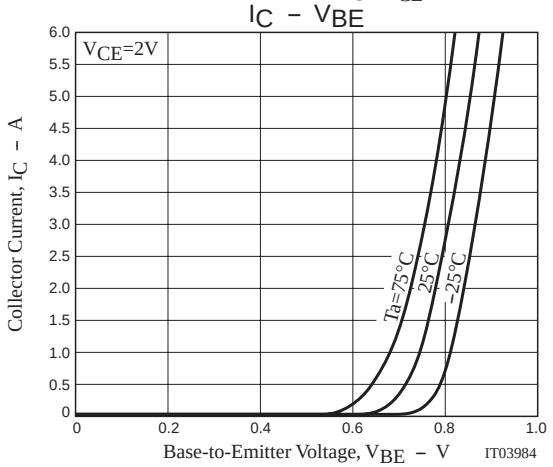
Switching Time Test Circuit

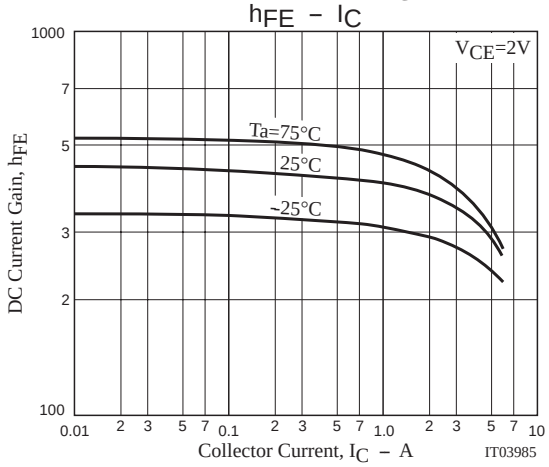


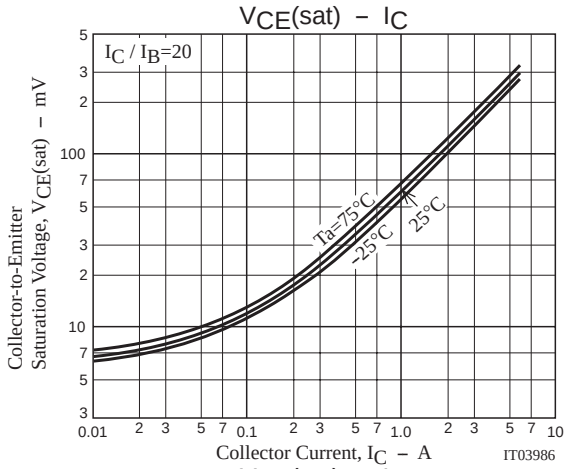
I_C=20I_{B1}= −20I_{B2}=1.5A

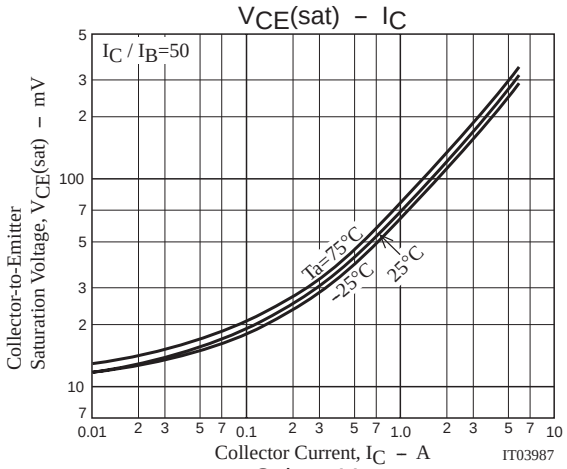


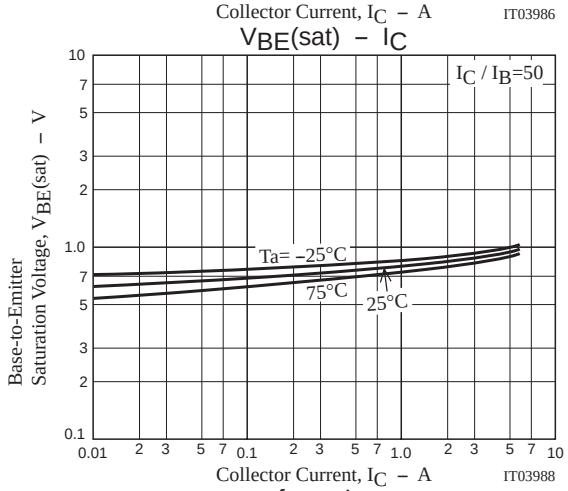


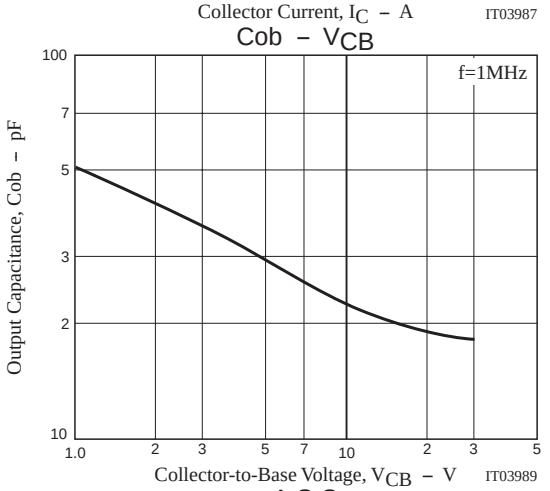


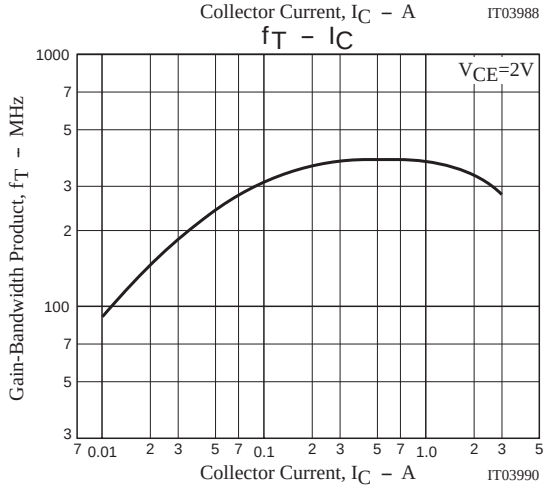


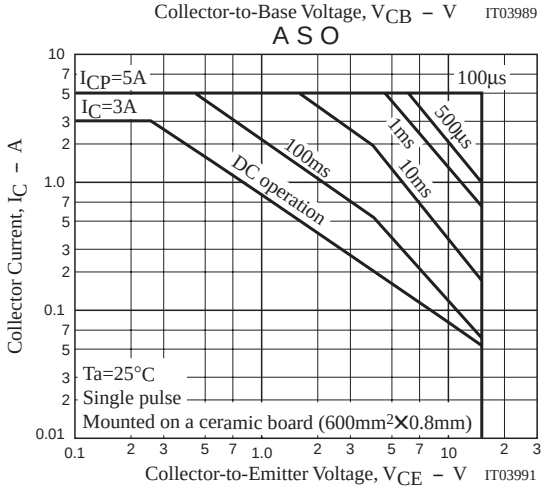


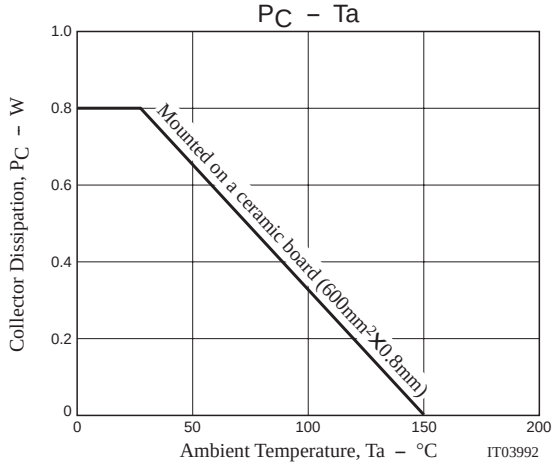












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