



SANYO Semiconductors

DATA SHEET

MCH3144 / MCH3244

PNP / ~~NPN~~ Epitaxial Planar Silicon Transistors

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 permitting applied sets to be small and slim (mounting height : 0.85mm).
- High allowable power dissipation.

Specifications () : MCH3144

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-30) 40	V
Collector-to-Emitter Voltage	V _{CE0}		(-30)	V
Emitter-to-Base Voltage	V _{EB0}		(-5)	V
Collector Current	I _C		(-2)	A
Collector Current (Pulse)	I _{CP}		(-5)	A
Base Current	I _B		(-400)	mA
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² ×0.8mm)	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 _{CBO}	V _{CB} =(-)30V, 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} =(-)10V, I _C =(-)300mA		(440) 400		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(17) 12		pF

Marking : MCH3144 : AH, MCH3244 : CR

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■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

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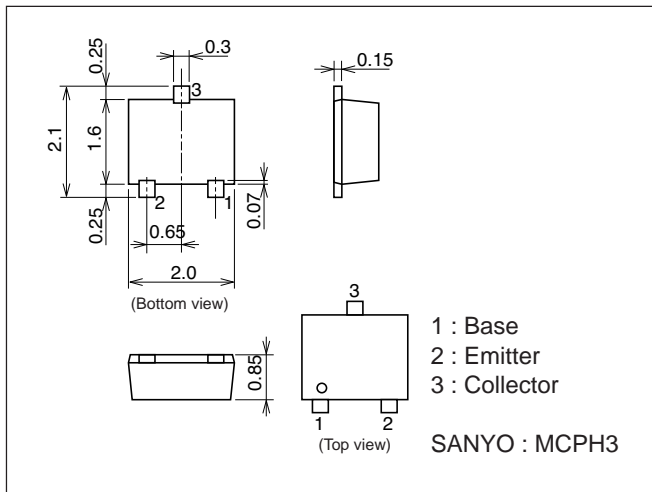
MCH3144 / MCH3244

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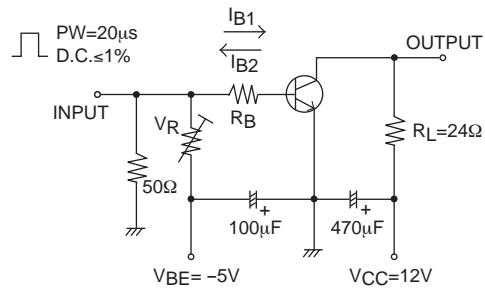
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1.5A, I_B=(-)75mA$		(-170)160	(-260)240	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1.5A, I_B=(-)75mA$		(-0.94)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-30)40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)30			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.		(45)40		ns
Storage Time	t_{stg}	See specified Test Circuit.		(200)350		ns
Fall Time	t_f	See specified Test Circuit.		(23)30		ns

Package Dimensions

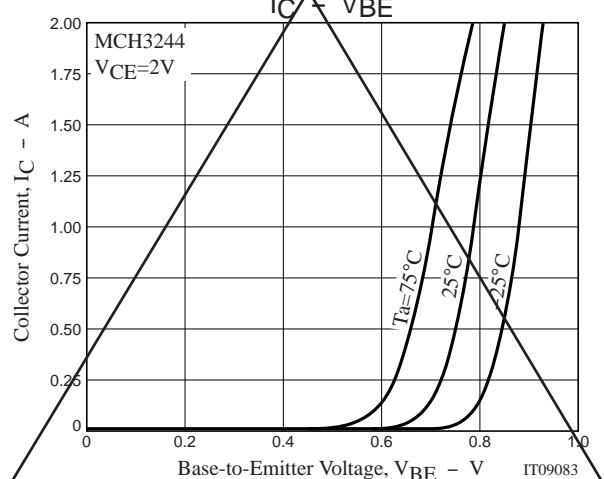
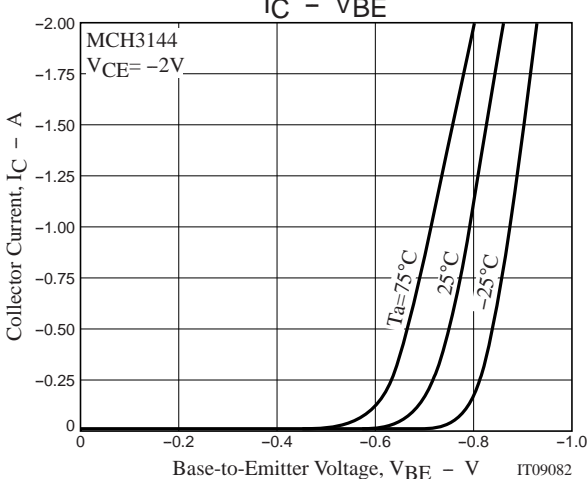
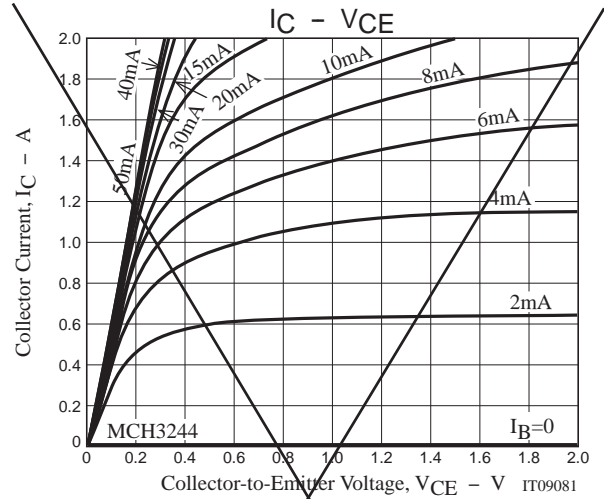
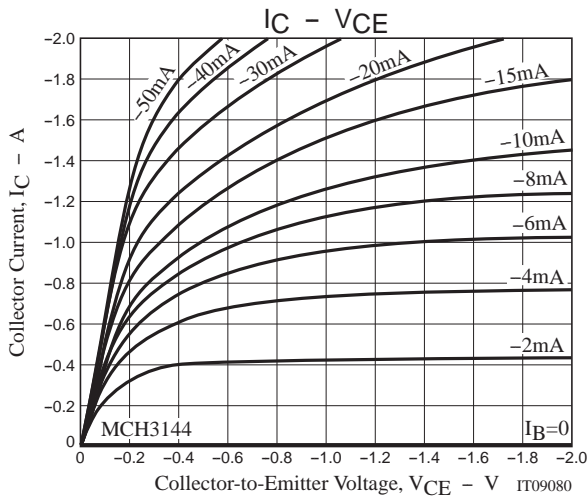
unit : mm
2194A



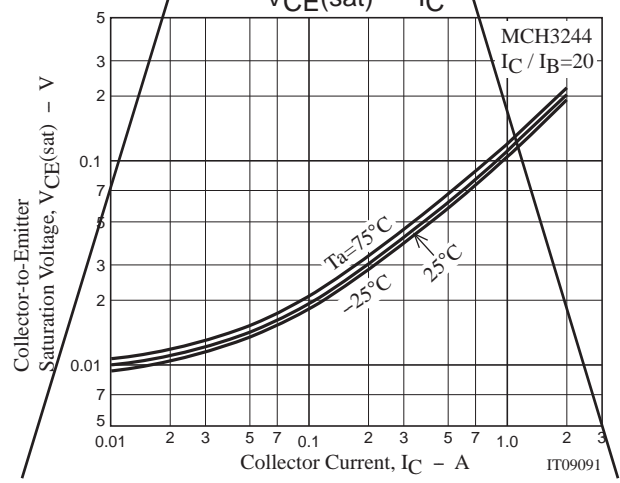
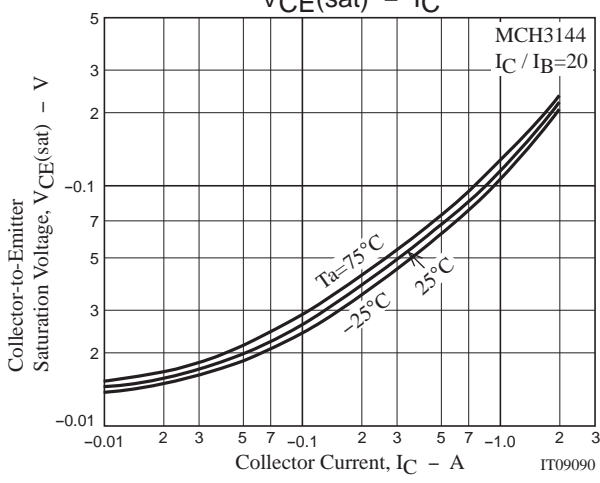
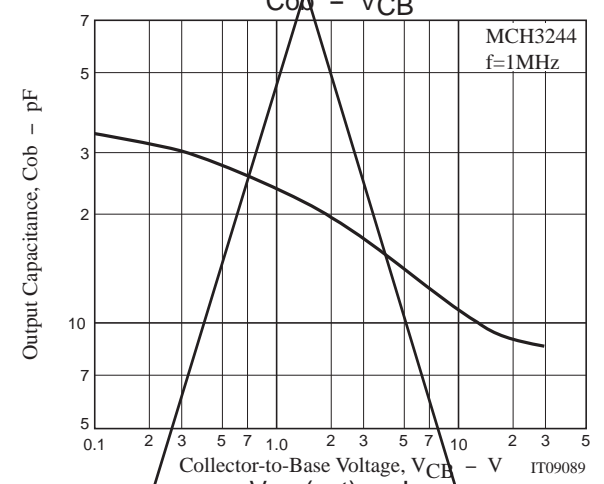
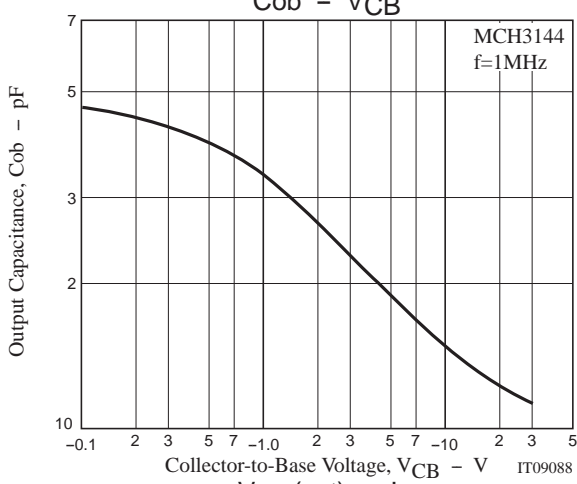
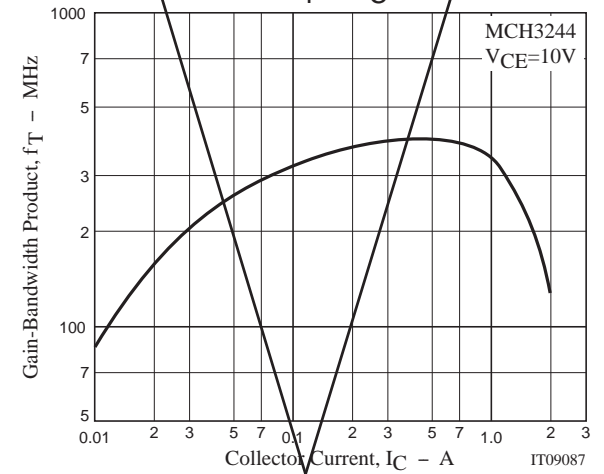
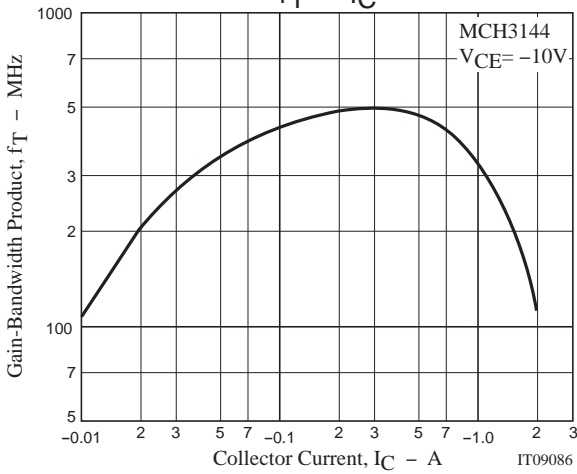
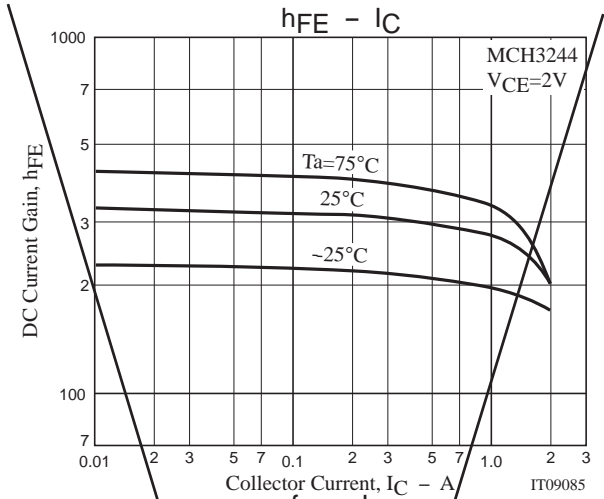
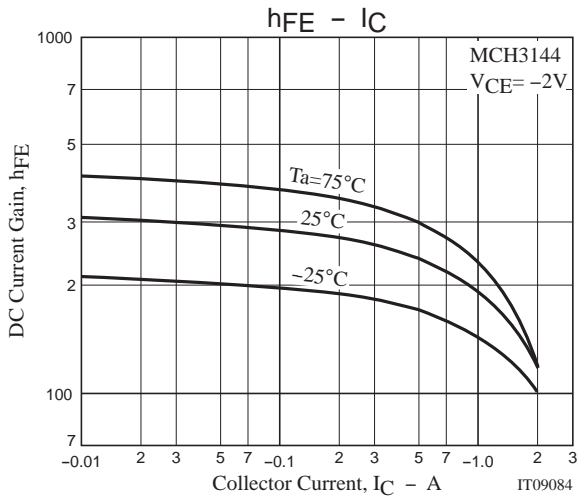
Switching Time Test Circuit



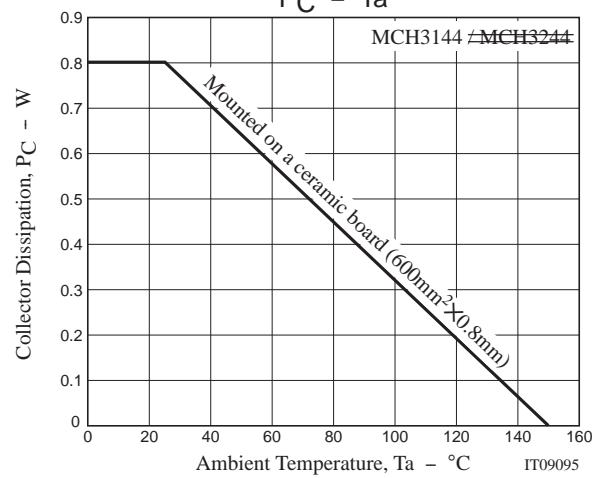
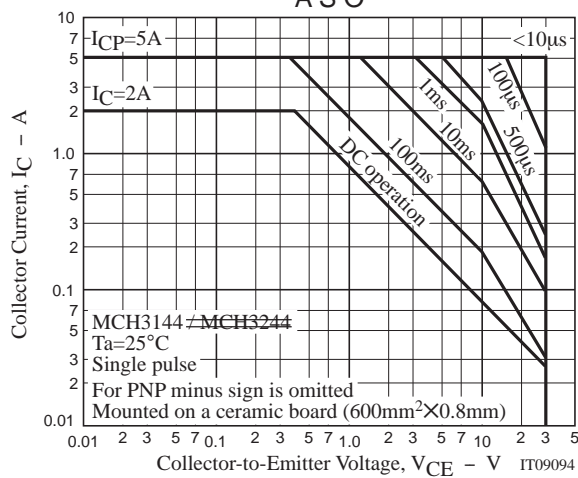
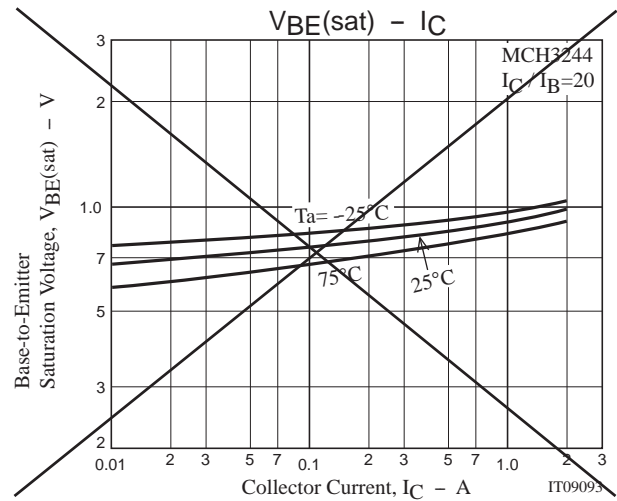
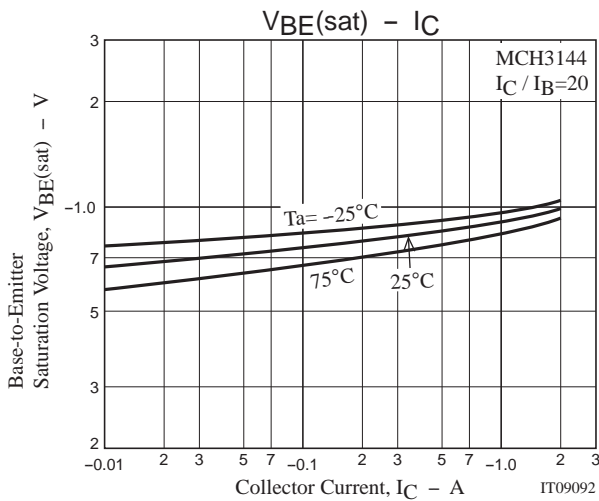
$I_C=20I_{B1} = -20I_{B2}=500mA$
For PNP, the polarity is reversed.



MCH3144 / MCH3244



MCH3144 / MCH3244



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