



SANYO Semiconductors

DATA SHEET

MCH6544

—— NPN Epitaxial Planar Silicon Transistor

Inverter Circuit / Driver Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

Features

- Composite type with an NPN transistor contained in one package facilitating high-density mounting.
- Ultrasmall package facilitates miniaturization in end products.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		500	mA
Collector Current (Pulse)	I_{CP}		1.5	A
Collector Dissipation	P_C	When mounted on ceramic substrate (600mm $\times$ 0.8mm) 1unit	0.5	W
Total Power Dissipation	P_T	When mounted on ceramic substrate (600mm $\times$ 0.8mm)	0.55	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0\text{A}$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=10\text{mA}$	300		800	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$		500		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		2.8		pF

Marking : ES

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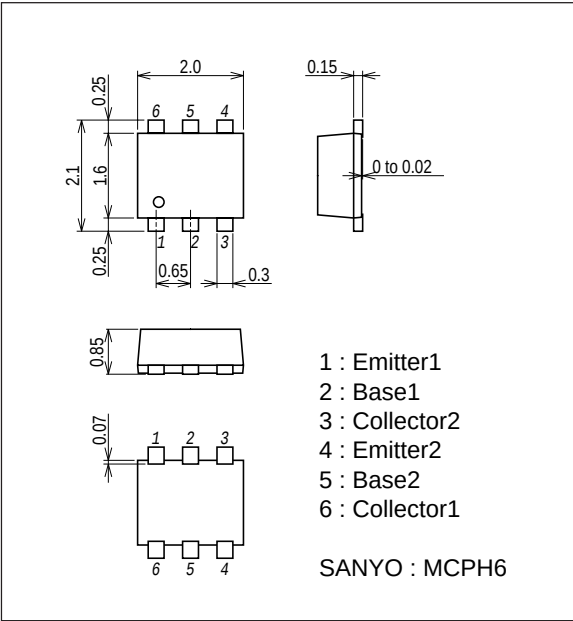
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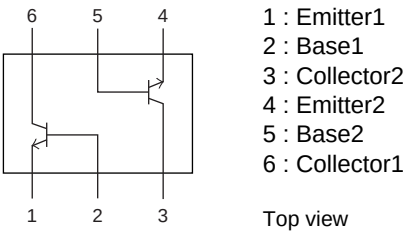
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$		50	100	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		340		ns
Fall Time	t_f	See specified Test Circuit.		55		ns

Package Dimensions

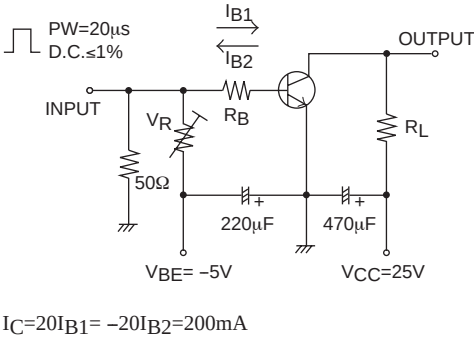
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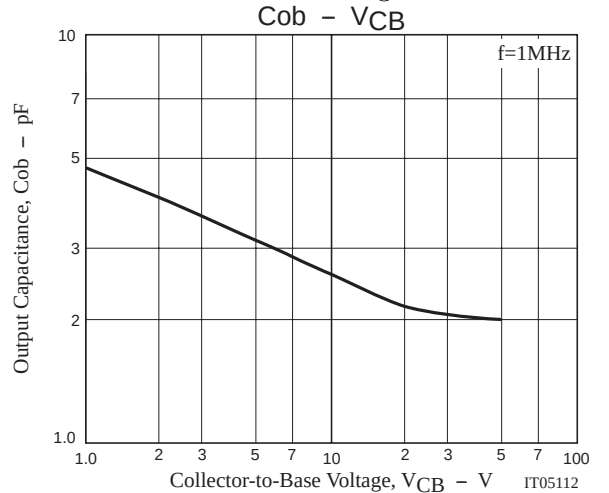
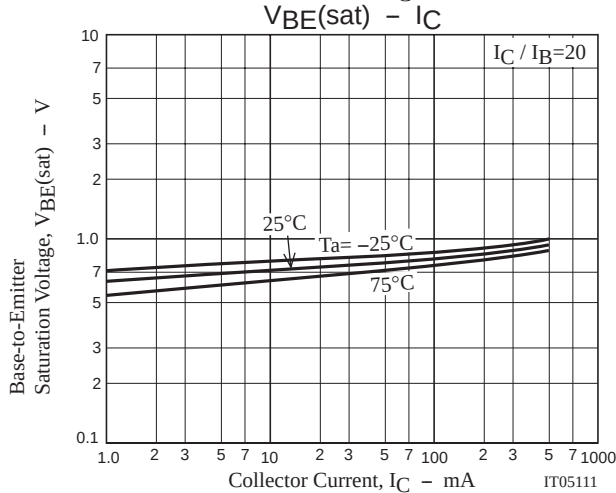
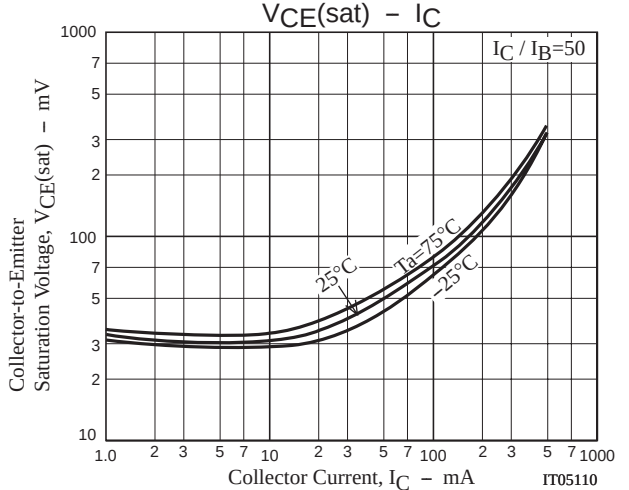
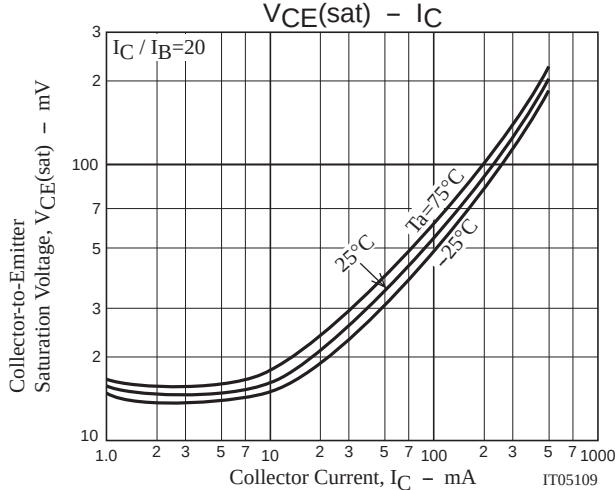
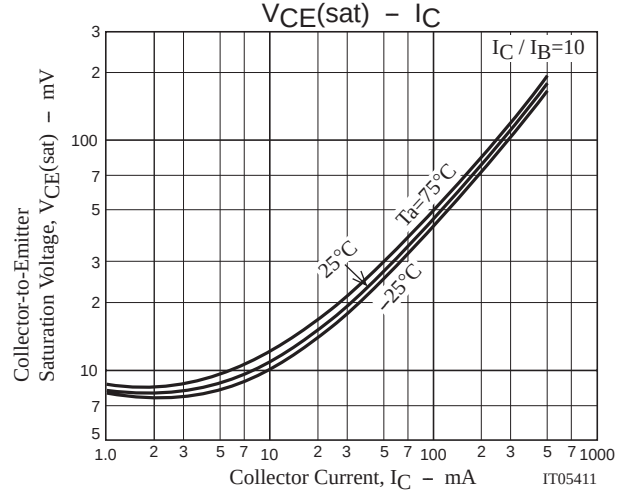
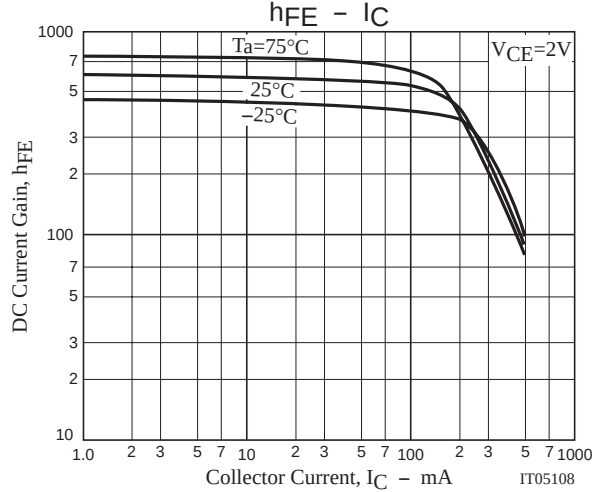
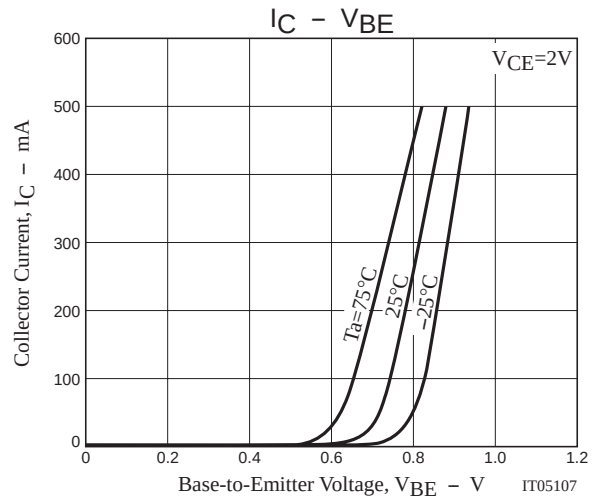
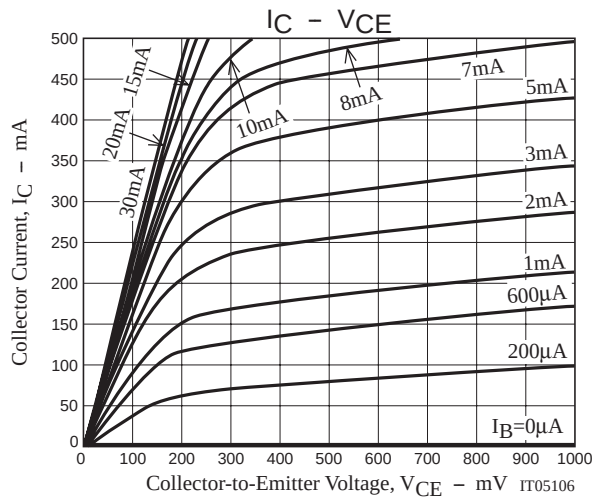


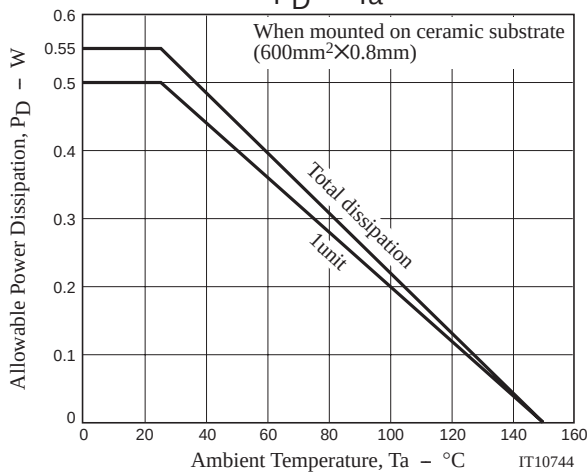
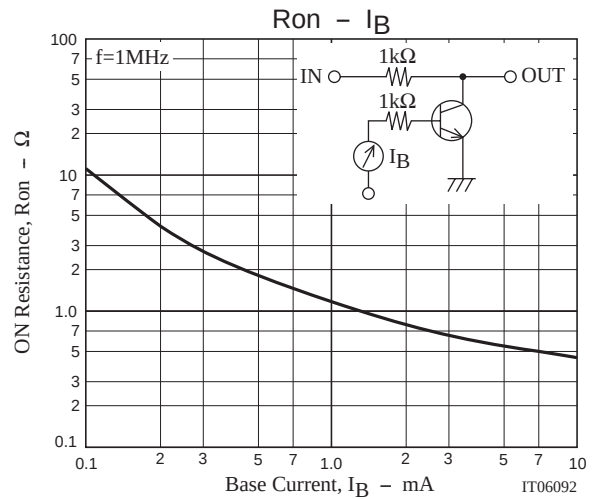
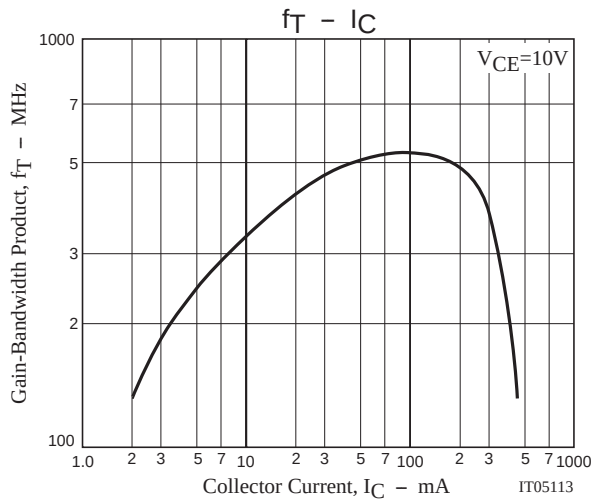
Electrical Connection



Switching Time Test Circuit







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