



SANYO Semiconductors

DATA SHEET

ECH8201 — NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- High-power IGBT/MOSFET gate drivers, DC / DC converters, lamp drivers, motor drivers.

Features

- Adoption of FBET, MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High speed switching.
- High allowable power dissipation.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		100	V
Collector-to-Emitter Voltage	VCES		100	V
Collector-to-Emitter Voltage	VCEO		50	V
Emitter-to-Base Voltage	VEBO		6	V
Collector Current	IC		10	A
Collector Current (Pulse)	ICP		20	A
Base Current	IB		1	A
Collector Dissipation	PC	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.6	W
Junction Temperature	TJ		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Marking : HA

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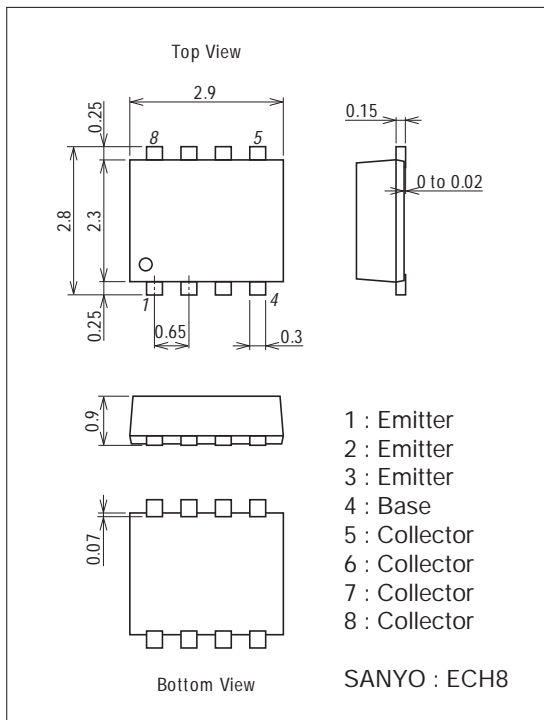
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40V, I_E=0A$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V, I_C=0A$			0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=2V, I_C=500mA$	200		560	
	h_{FE2}	$V_{CE}=2V, I_C=4A$	160			
	h_{FE3}	$V_{CE}=2V, I_C=10A$	110			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=1A$		230		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		60		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=6A, I_B=300mA$		65	100	mV
	$V_{CE(sat)2}$	$I_C=2A, I_B=40mA$		40	75	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5A, I_B=250mA$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu A, R_{BE}=0\Omega$	100			V
	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	6			V
Turn-On Time	t_{on}	See specified Test Circuit.		60		ns
Storage Time	t_{stg}	See specified Test Circuit.		305		ns
Fall Time	t_f	See specified Test Circuit.		17		ns

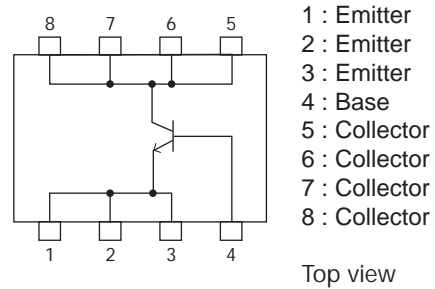
Package Dimensions

unit : mm (typ)

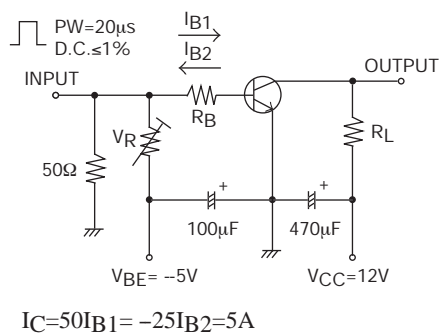
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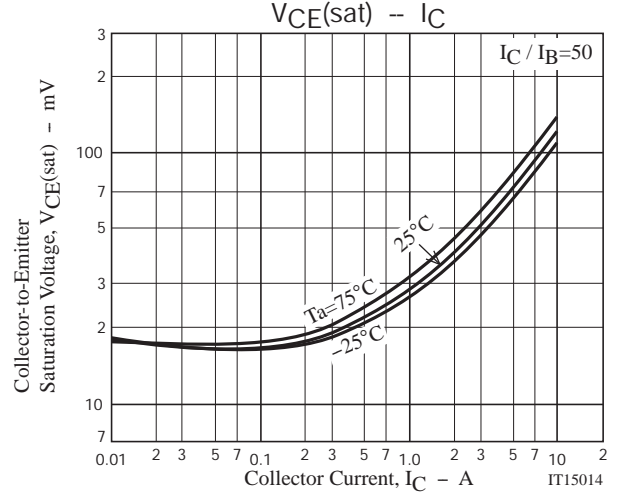
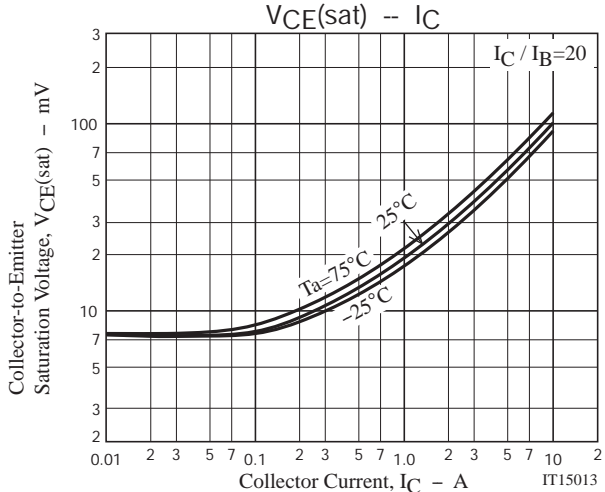
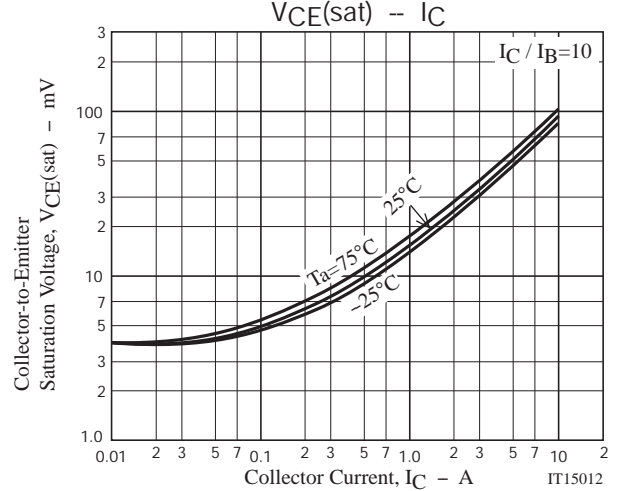
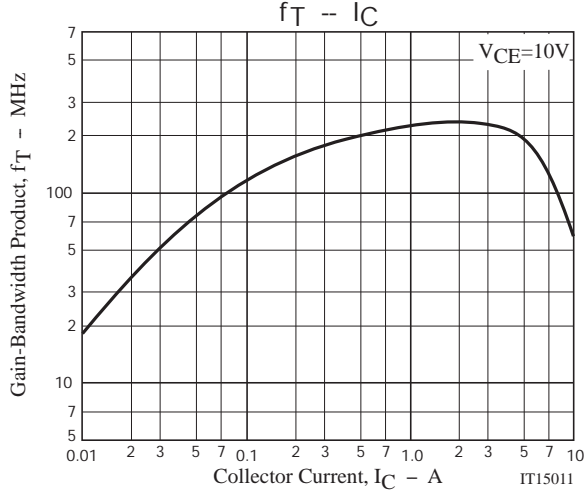
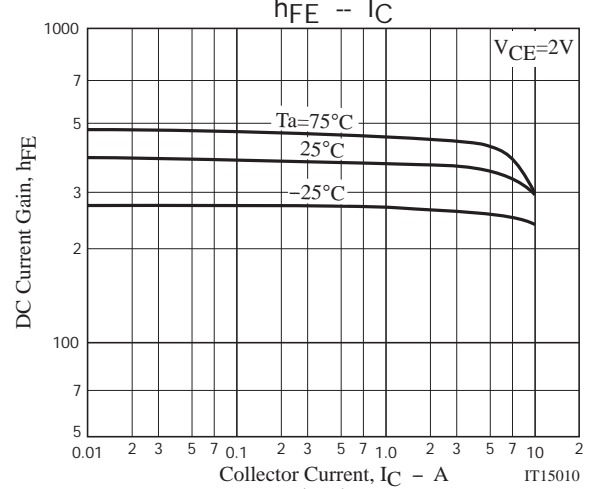
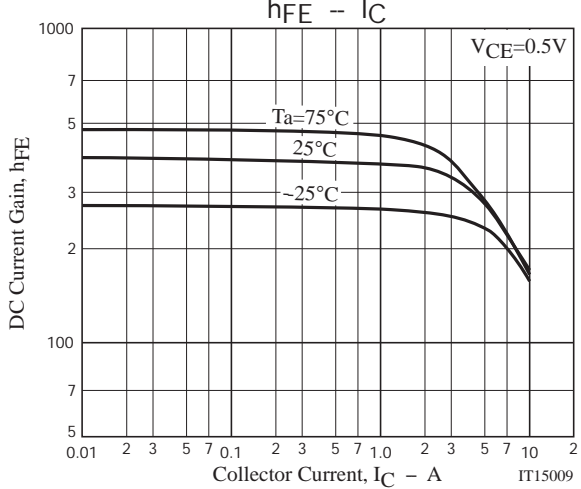
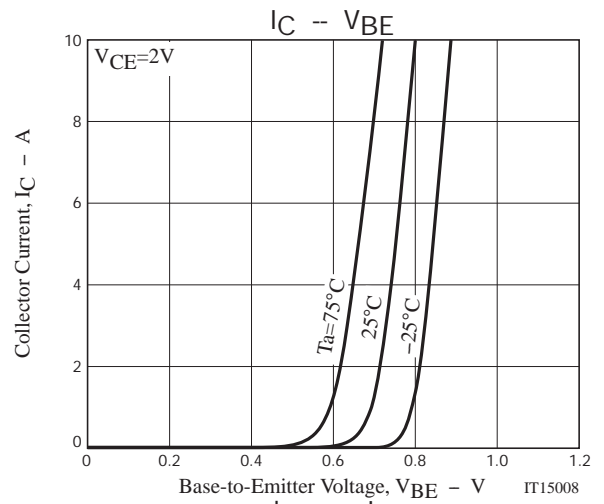
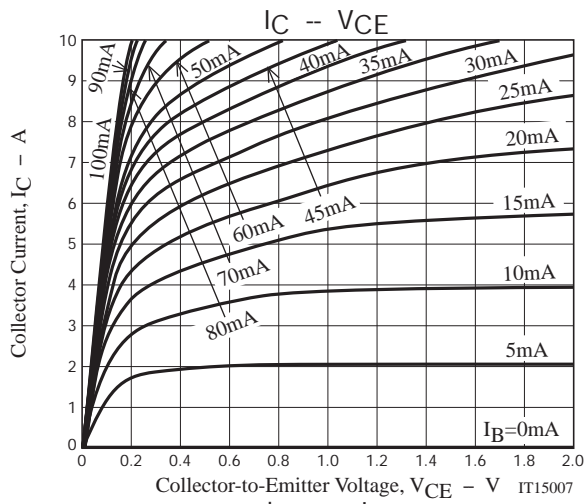


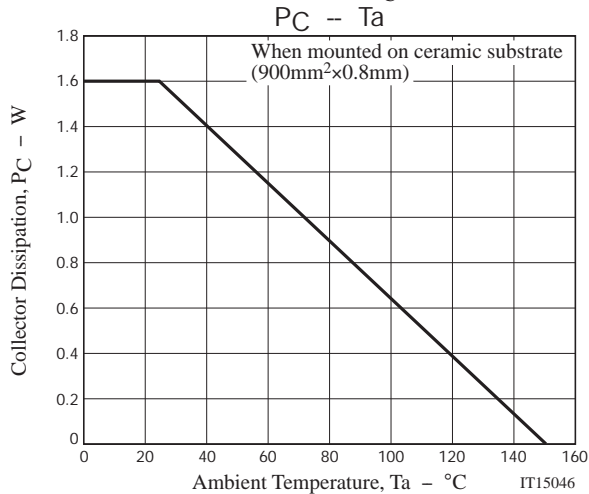
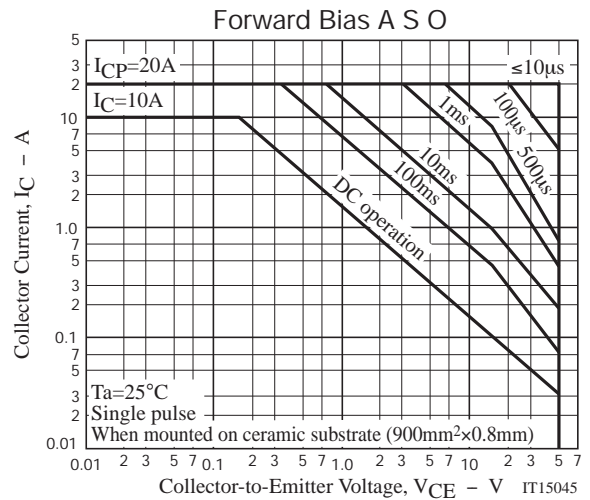
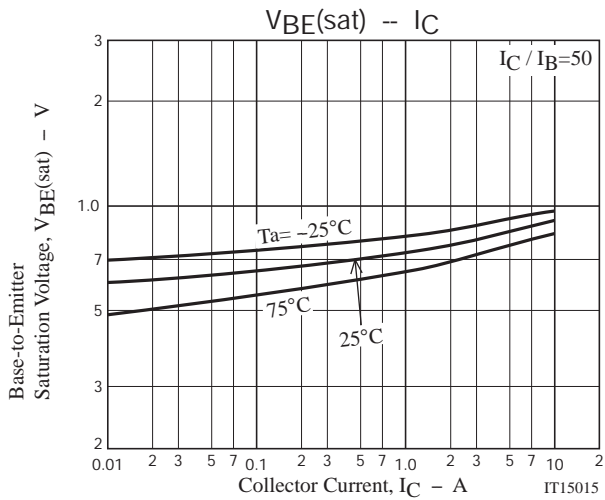
Electrical Connection



Switching Time Test Circuit







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