



ECH8202 — 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		30	V
Collector-to-Emitter Voltage	VCES		30	V
Collector-to-Emitter Voltage	VCEO		30	V
Emitter-to-Base Voltage	VEBO		6	V
Collector Current	IC		12	A
Collector Current (Pulse)	ICP		24	A
Base Current	IB		1.2	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 : HB

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ECH8202

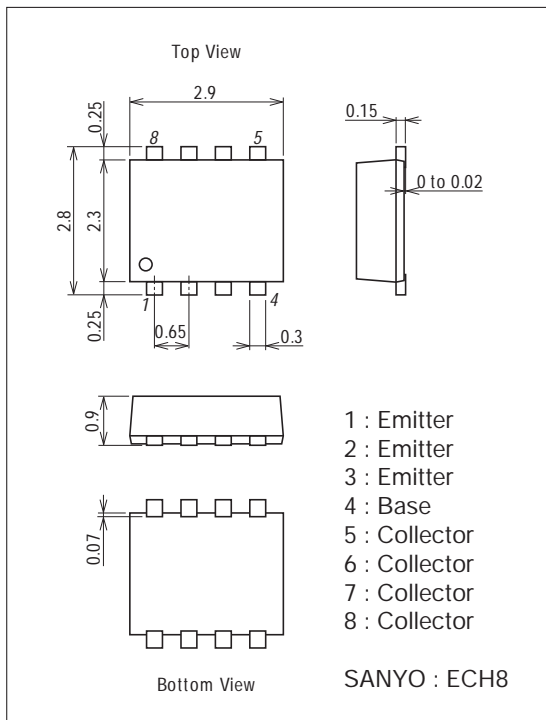
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =30V, I _E =0A			0.1	μA
Emitter Cutoff Current	IEBO	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	170			
	h _{FE3}	V _{CE} =2V, I _C =10A	120			
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =1A		200		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		55	90	mV
	V _{CE(sat)2}	I _C =2A, I _B =40mA		35	70	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =2A, I _B =40mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0A	30			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CES}	I _C =100μA, R _{BE} =0Ω	30			V
	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	30			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0A	6			V
Turn-On Time	t _{on}	See specified Test Circuit.		65		ns
Storage Time	t _{stg}	See specified Test Circuit.		235		ns
Fall Time	t _f	See specified Test Circuit.		17		ns

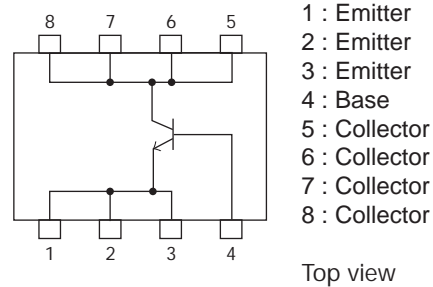
Package Dimensions

unit : mm (typ)

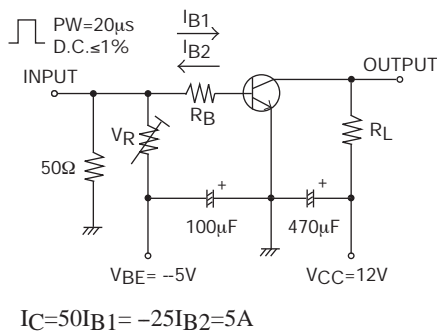
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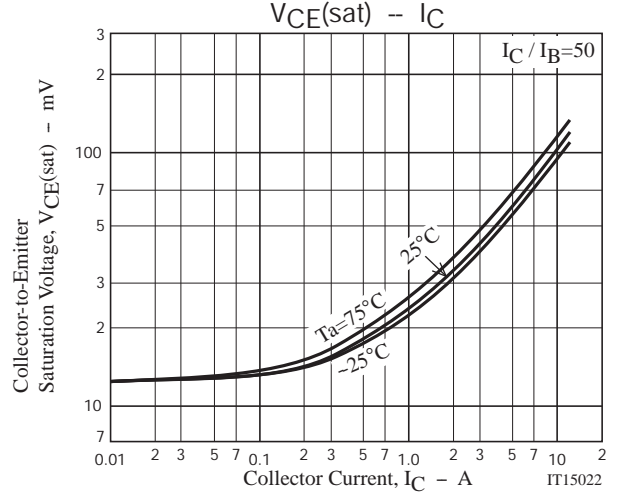
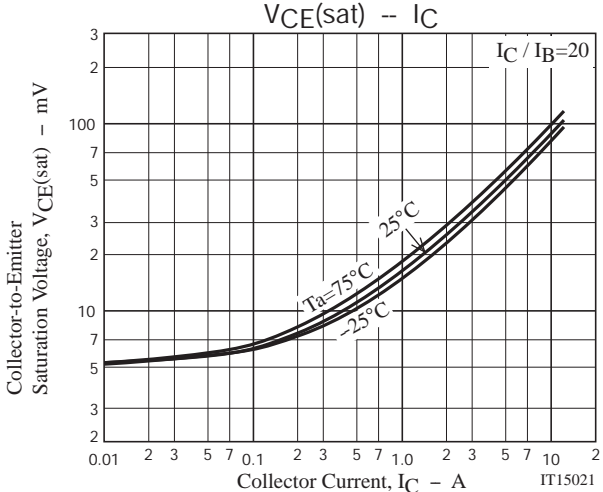
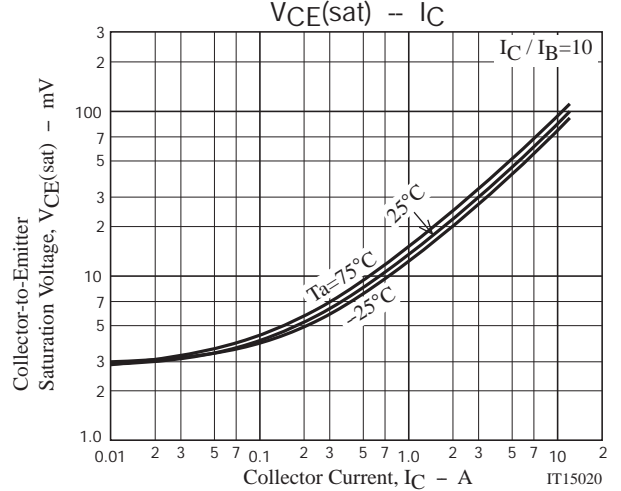
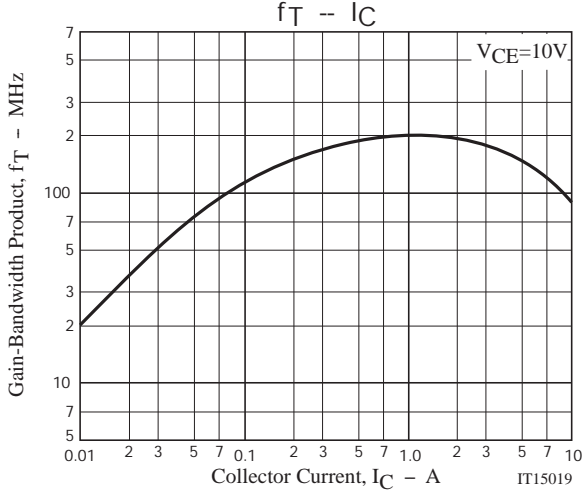
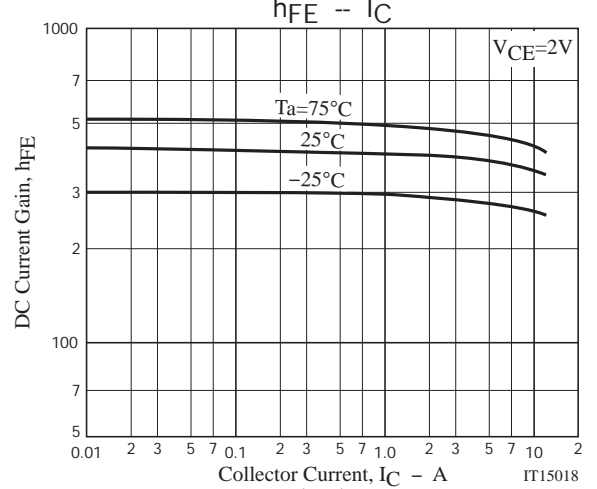
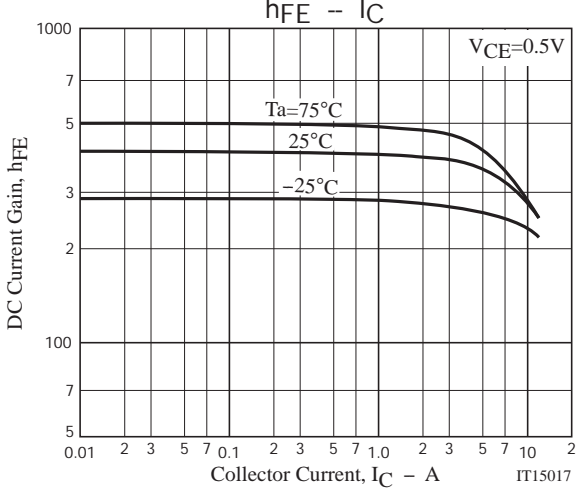
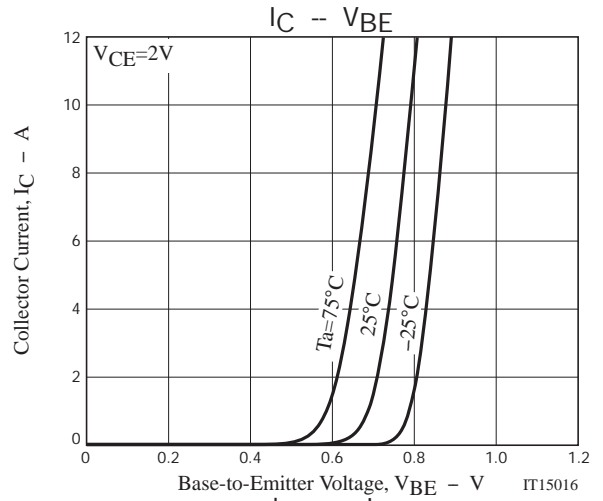
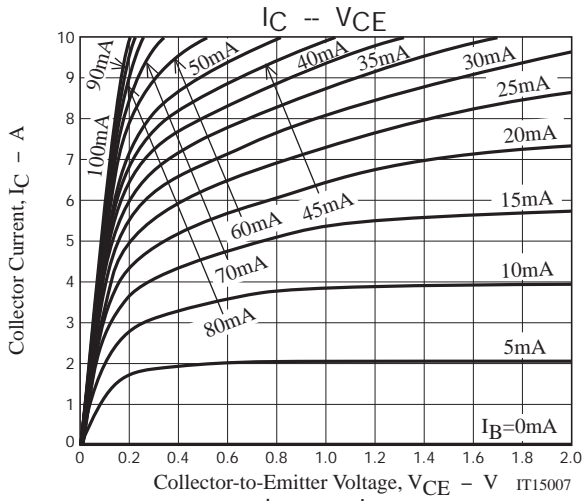


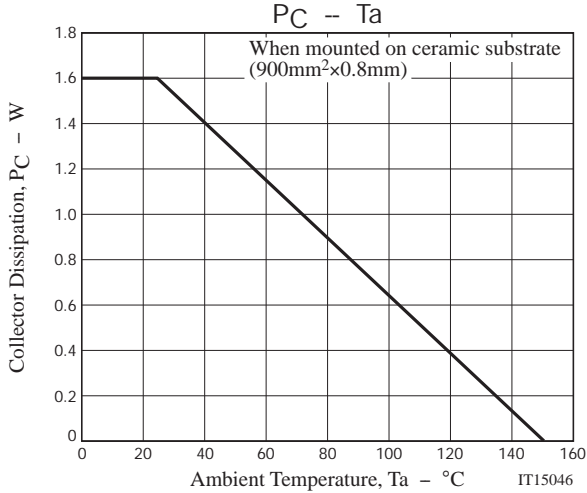
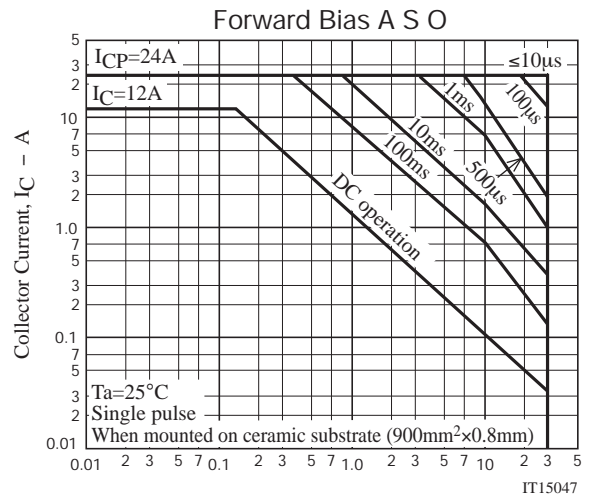
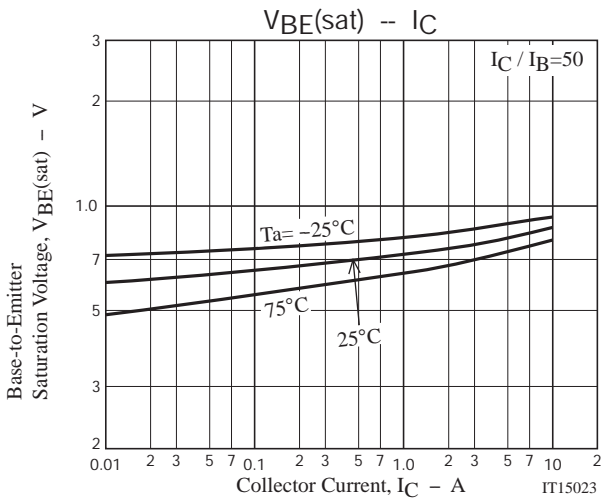
Electrical Connection



Switching Time Test Circuit







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