

# ECH8504 — PNP Epitaxial Planar Silicon Transistor

## Motor Drive Applications

### Features

- Composite type, facilitating high-density mounting.
- Mounting height 0.9mm.
- Halogen free compliance.

### Specifications

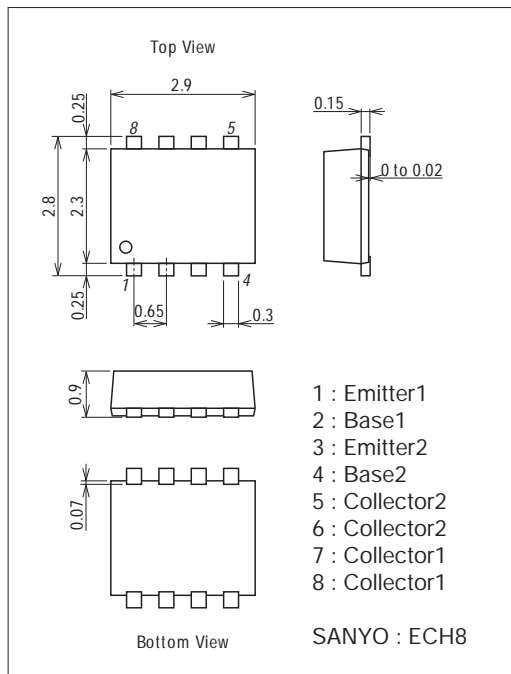
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-100	V
Collector-to-Emitter Voltage	VCEO		-100	V
Emitter-to-Base Voltage	VEBO		-7	V
Collector Current	IC		-3	A
Collector Current (Pulse)	ICP		-6	A
Base Current	IB		-600	mA
Collector Dissipation	PC	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	1.3	W
Total Dissipation	PT	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.6	W
Junction Temperature	TJ		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

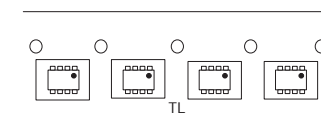
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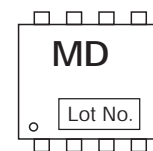
### Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

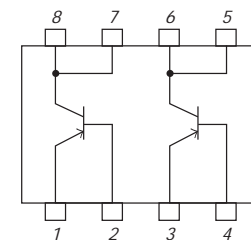
Taping Type : TL



Marking



### Electrical Connection

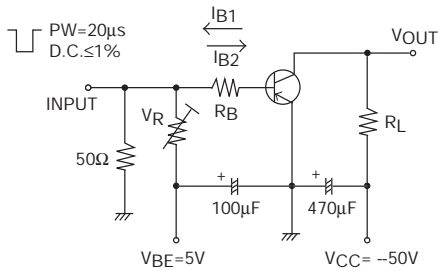


Electrical Characteristics at Ta=25°C

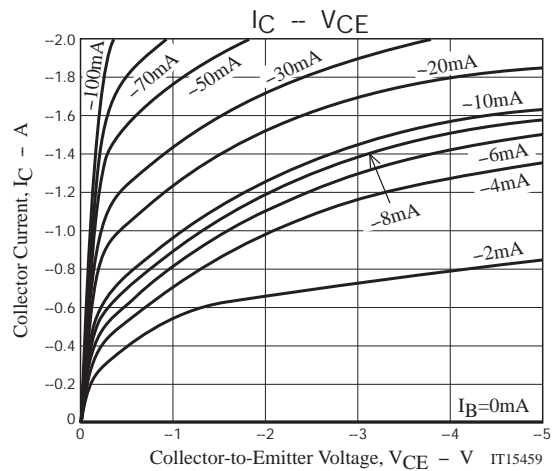
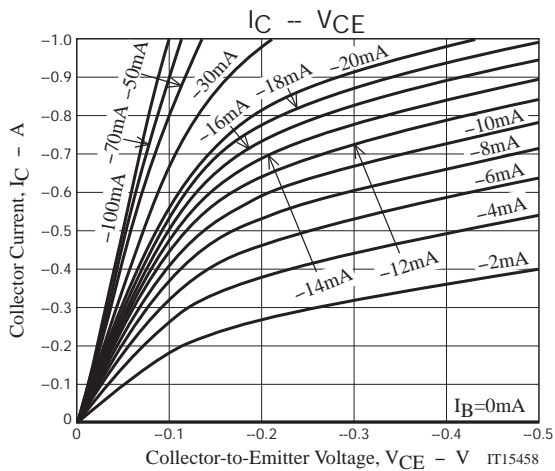
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> = -80V, I <sub>E</sub> =0A			-1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> = -4V, I <sub>C</sub> =0A			-1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -100mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -500mA		250		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, f=1MHz		28		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -1A, I <sub>B</sub> = -100mA		-75	-130	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -1A, I <sub>B</sub> = -100mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> =0A	-100			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA, R <sub>BE</sub> =∞	-100			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> =0A	-7			V
Turn-On Time	t <sub>on</sub>	See specified Test Circuit.		25		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		420		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		20		ns

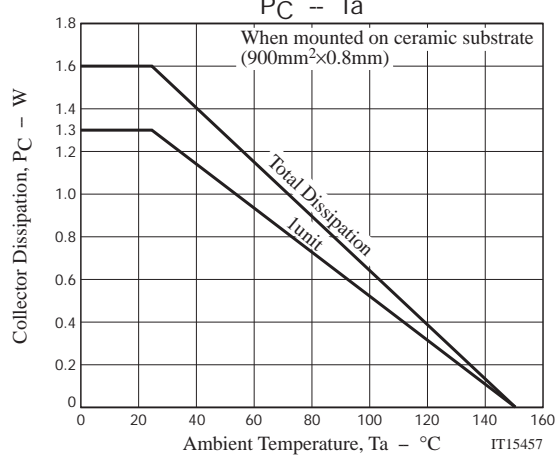
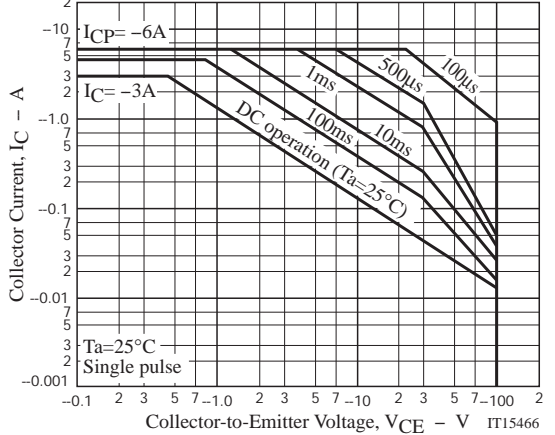
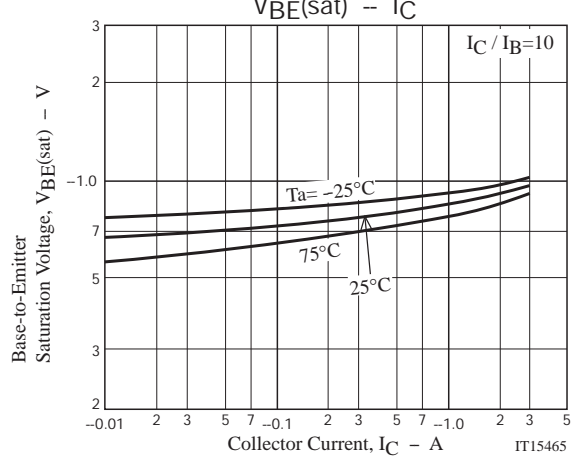
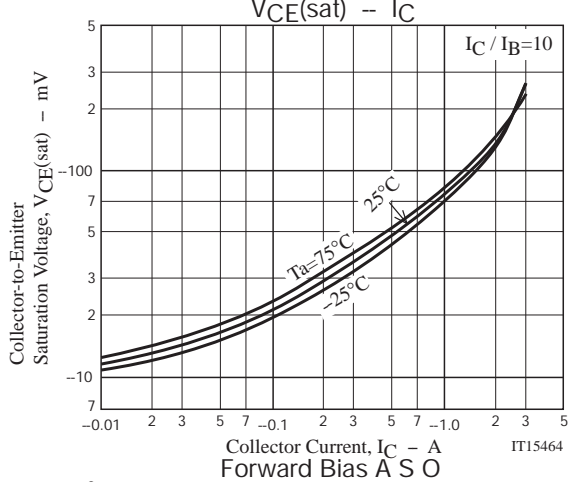
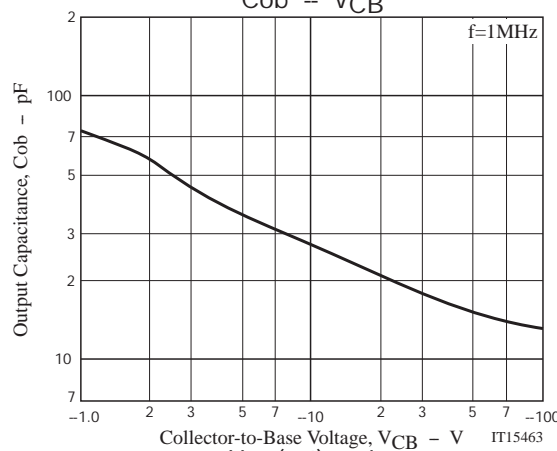
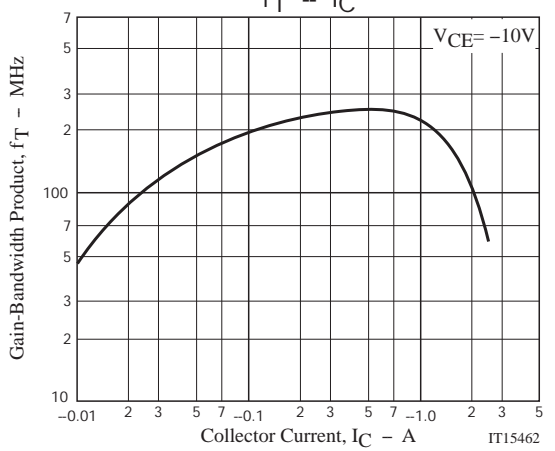
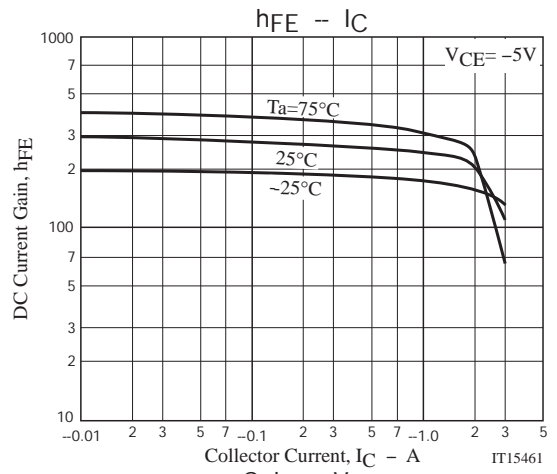
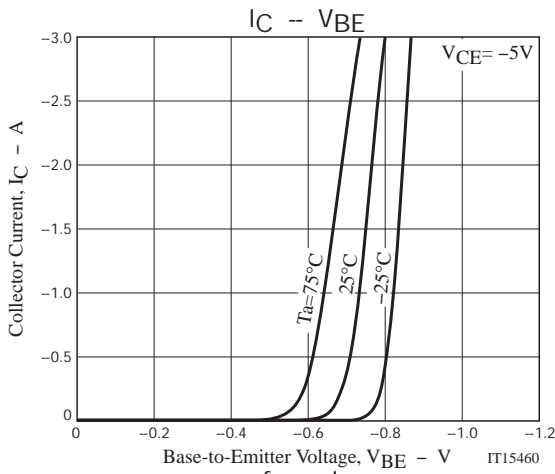
Note) The specifications shown above are for each individual transistor.

Switching Time Test Circuit



$$I_C = -10I_{B1} = 10I_{B2} = -1A$$





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