

# ECH8503

PNP Epitaxial Planar Silicon Transistor  
Motor Drive Applications

## Features

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

## Specifications

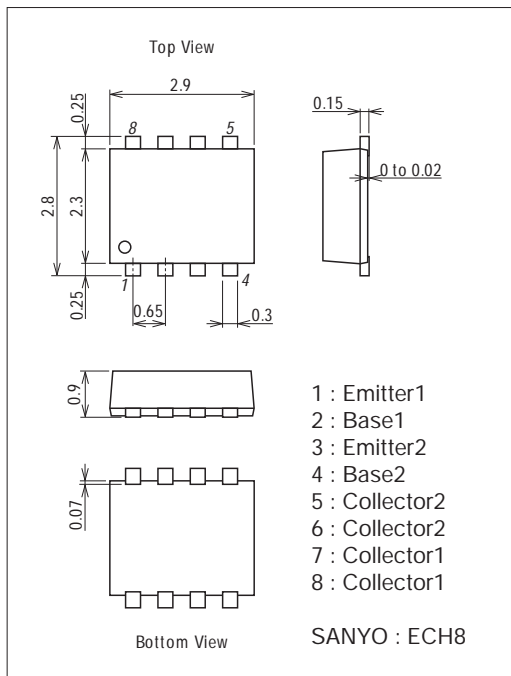
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		-6	V
Collector Current	I <sub>C</sub>		-5	A
Collector Current (Pulse)	I <sub>CP</sub>		-10	A
Base Current	I <sub>B</sub>		-1	A
Collector Dissipation	P <sub>C</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	1.3	W
Total Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.6	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

## Package Dimensions

unit : mm (typ)

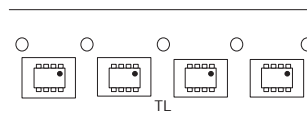
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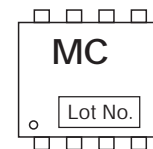
## Product & Package Information

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

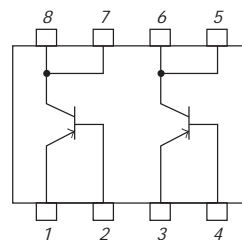
## Taping Type : TL



## Marking



## Electrical Connection

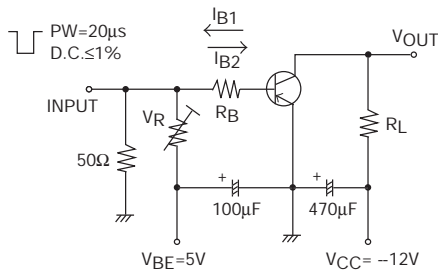


Electrical Characteristics at  $T_a=25^\circ\text{C}$

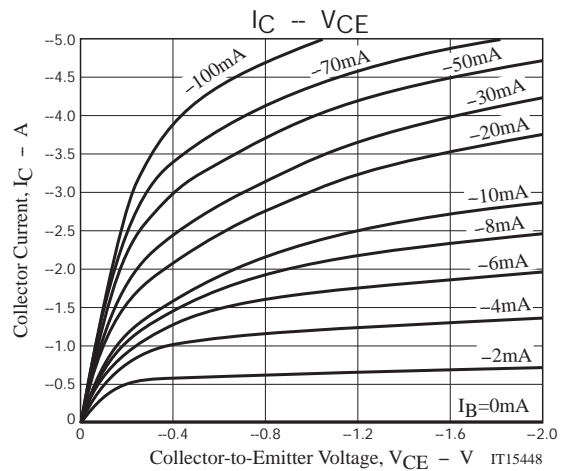
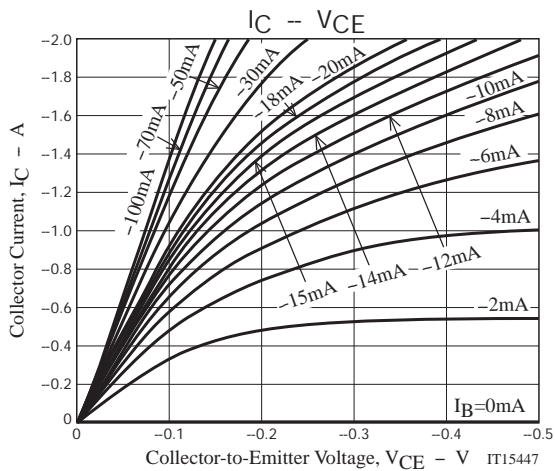
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -50\text{V}, I_E = 0\text{A}$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$		280		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		42		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -1\text{A}, I_B = -50\text{mA}$		-60	-100	mV
	$V_{CE(sat)2}$	$I_C = -2.5\text{A}, I_B = -125\text{mA}$		-110	-190	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -2.5\text{A}, I_B = -125\text{mA}$		-0.9	-1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-6			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		30		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		170		ns
Fall Time	$t_f$	See specified Test Circuit.		17		ns

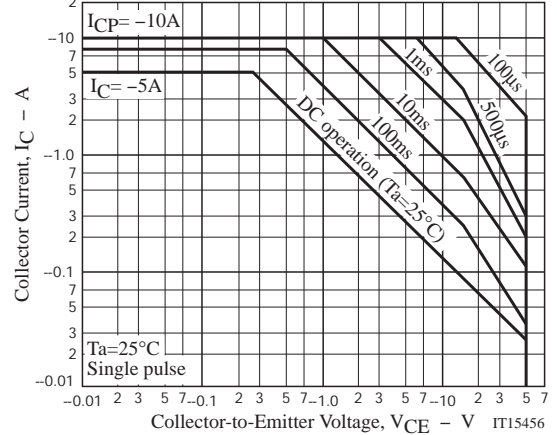
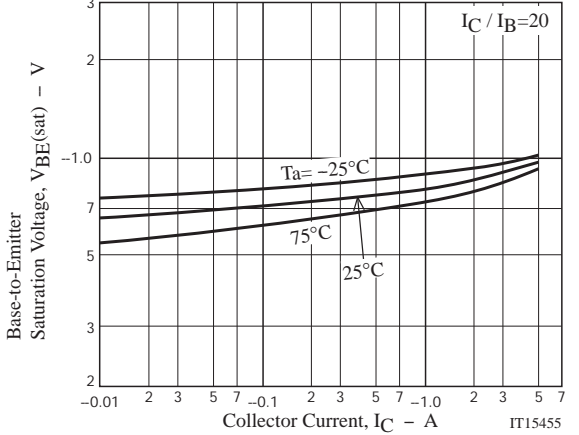
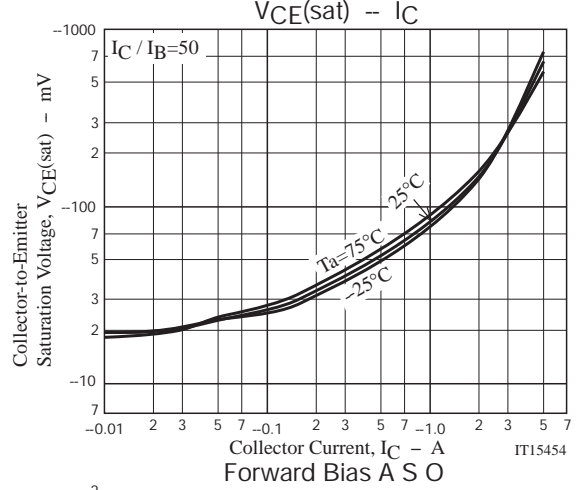
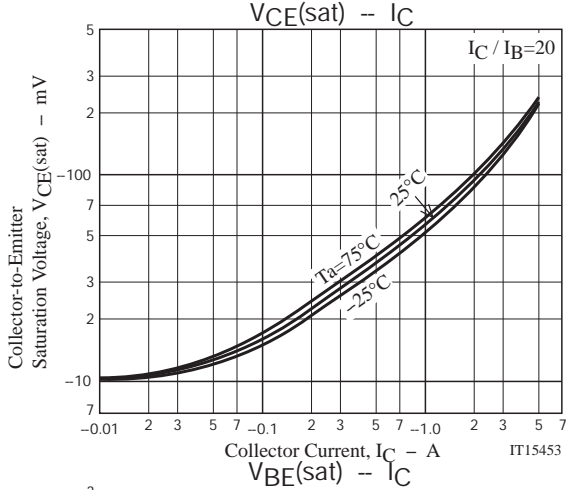
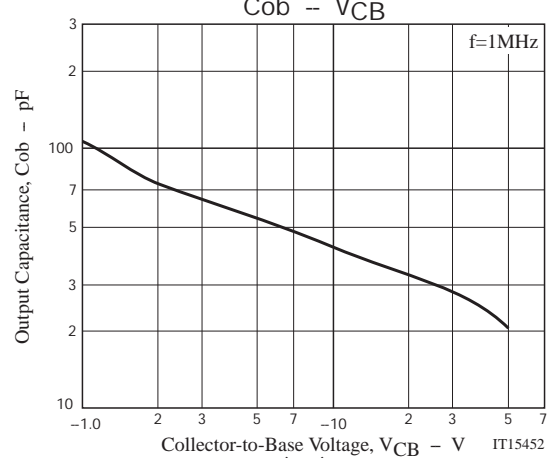
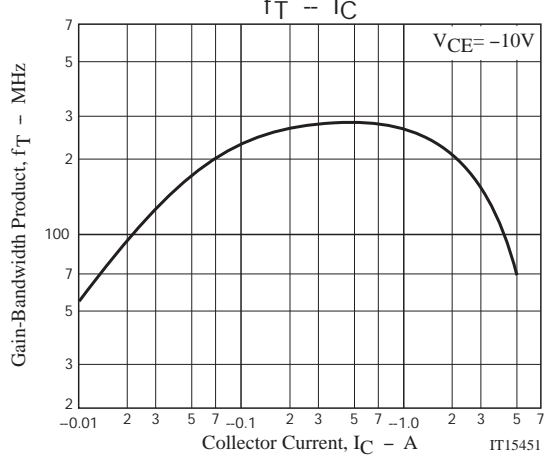
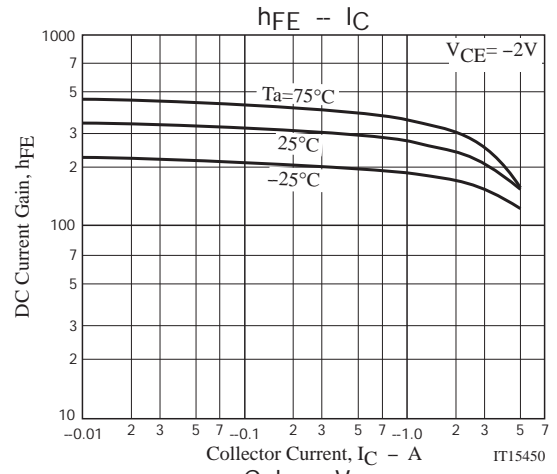
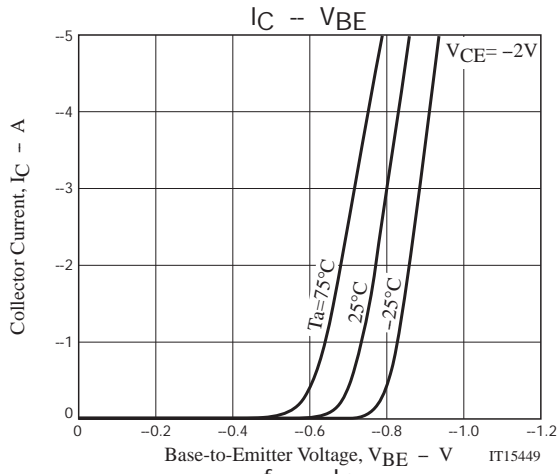
Note) The specifications shown above are for each individual transistor.

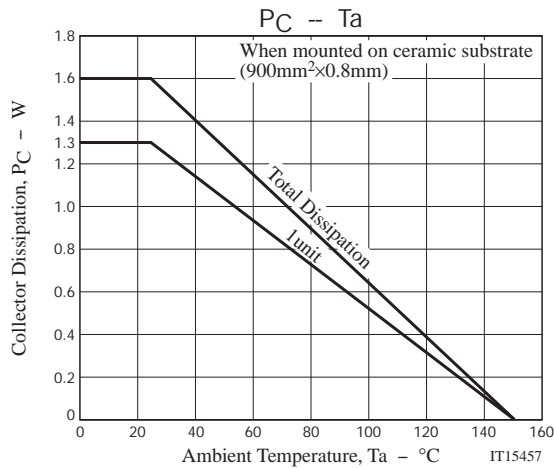
Switching Time Test Circuit



$$I_C = -20I_{B1} = 20I_{B2} = -2.5\text{A}$$







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