



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## CPH6153 — PNP Epitaxial Planar Silicon Transistor

### Load Switch Applications

#### Applications

- Load switch, DC-DC converter, motor drivers, charger.

#### Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High speed switching.
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.9mm).
- High allowable power dissipation.
- IECO is guaranteed for preventing reverse flow from the collector to the emitter.

#### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-20	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>		-20	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-5	V
Collector Current	I <sub>C</sub>		-3	A
Collector Current (Pulse)	I <sub>CP</sub>		-5	A
Base Current	I <sub>B</sub>		-600	mA
Collector Dissipation	P <sub>C</sub>	When mounted on ceramic substrate (600mm <sup>2</sup> ×0.8mm)	1.3	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Marking : TC

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11310EA TK IM TC-00002230 No. A1606-1/4

# CPH6153

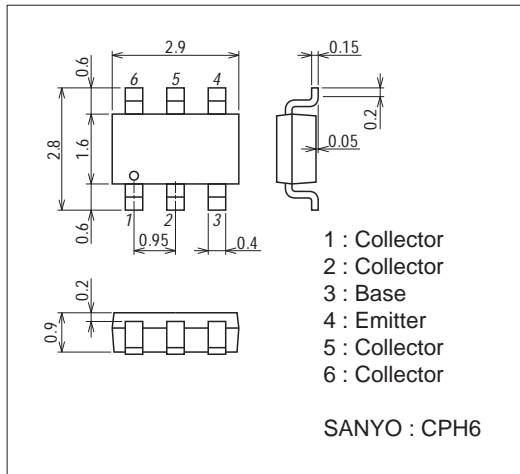
## Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -20\text{V}, I_E = 0\text{A}$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C = 0\text{A}$			-0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{ECO}$	$V_{EC} = -4.5\text{V}, I_B = 0\text{A}$			-1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = -2\text{V}, I_C = -100\text{mA}$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE} = -10\text{V}, I_C = -300\text{mA}$		400		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		22		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -1.5\text{A}, I_B = -75\text{mA}$		-130	-195	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1.5\text{A}, I_B = -75\text{mA}$		-0.93	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-5			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		35		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		65		ns
Fall Time	$t_f$	See specified Test Circuit.		12		ns

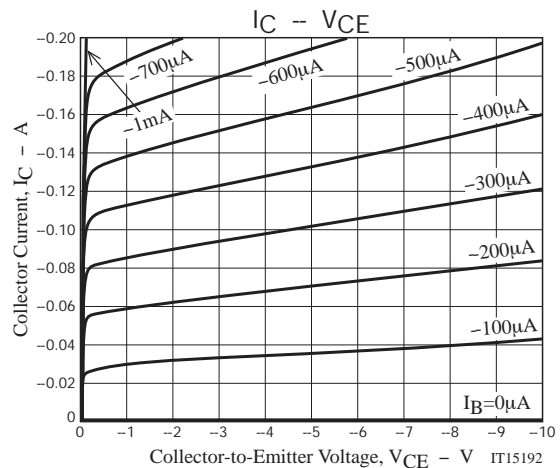
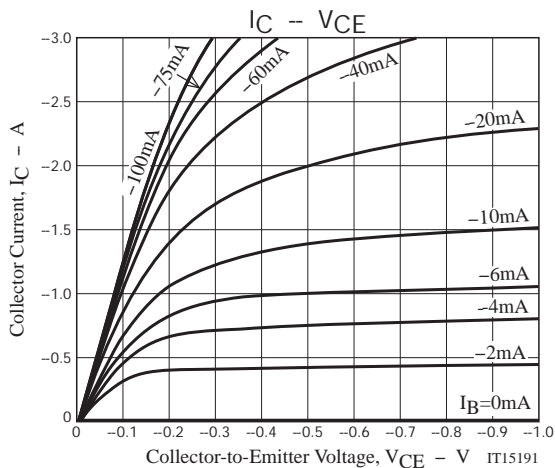
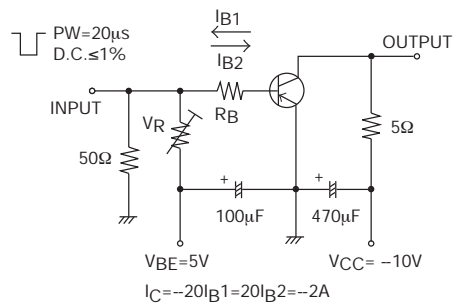
## Package Dimensions

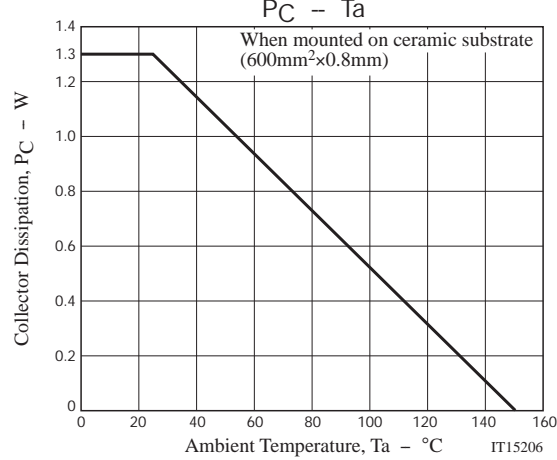
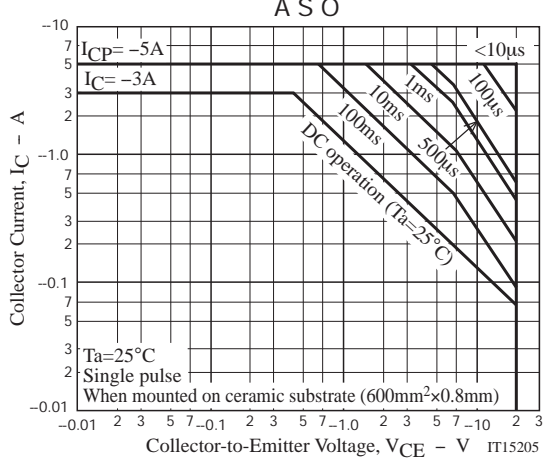
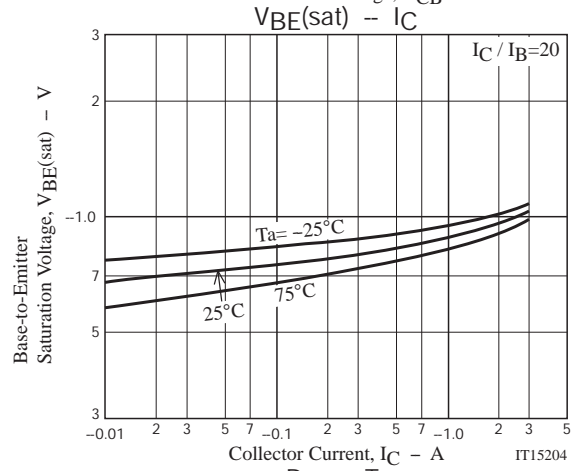
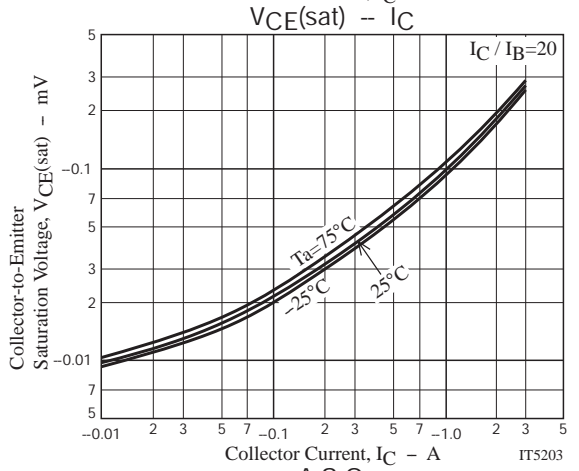
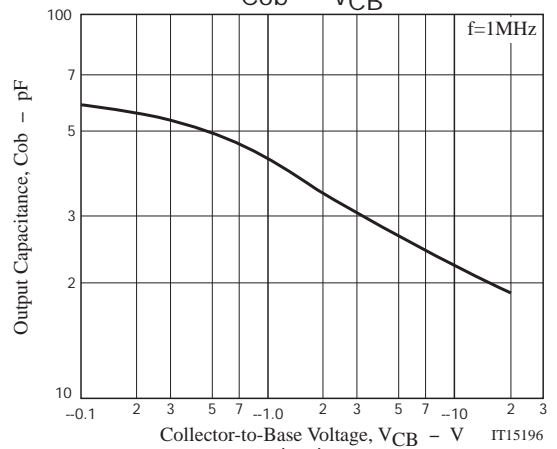
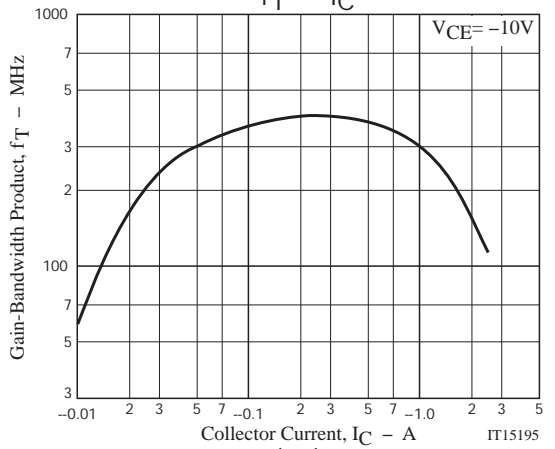
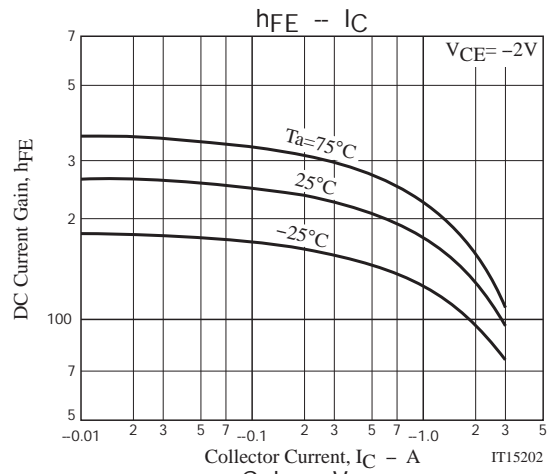
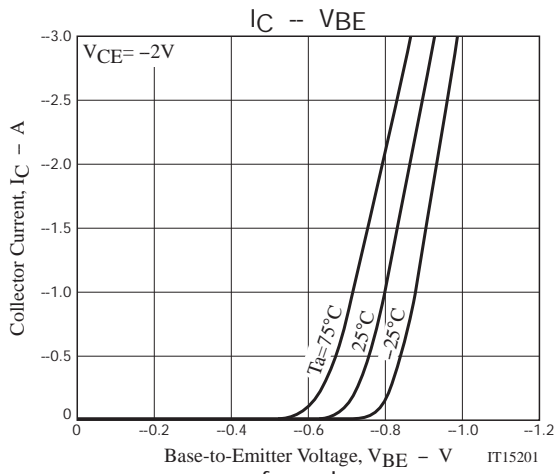
unit : mm (typ)

7018A-002



## Switching Time Test Circuit





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