



SANYO Semiconductors

## DATA SHEET

# 2SA2153

 — PNP Epitaxial Planar Silicon Transistor  

## High-Current Switching Applications

### Applications

- Voltage regulators, relay drivers, lamp drivers, electrical equipment.

### Features

- Adoption of MBIT process.
- Low saturation voltage.
- High current capacity and wide ASO.

### Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-50	V
Collector-to-Emitter Voltage	$V_{CEO}$		-50	V
Emitter-to-Base Voltage	$V_{EBO}$		-6	V
Collector Current	$I_C$		-2	A
Collector Current (Pulse)	$I_{CP}$		-4	A
Base Current	$I_B$		-400	mA
Collector Dissipation	$P_C$	Mounted on a ceramic board (450mm <sup>2</sup> X0.8mm)	1.3	W
		$T_c=25^\circ\text{C}$	3.5	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-40\text{V}, I_E=0$			-1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-4\text{V}, I_C=0$			-1	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=-2\text{V}, I_C=-100\text{mA}$	200		560	
	$h_{FE2}$	$V_{CE}=-2\text{V}, I_C=-1.5\text{A}$	40			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}, I_C=-300\text{mA}$		420		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, f=1\text{MHz}$		16		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1\text{A}, I_B=-50\text{mA}$		-0.2	-0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1\text{A}, I_B=-50\text{mA}$		-0.9	-1.2	V

Marking : AZ

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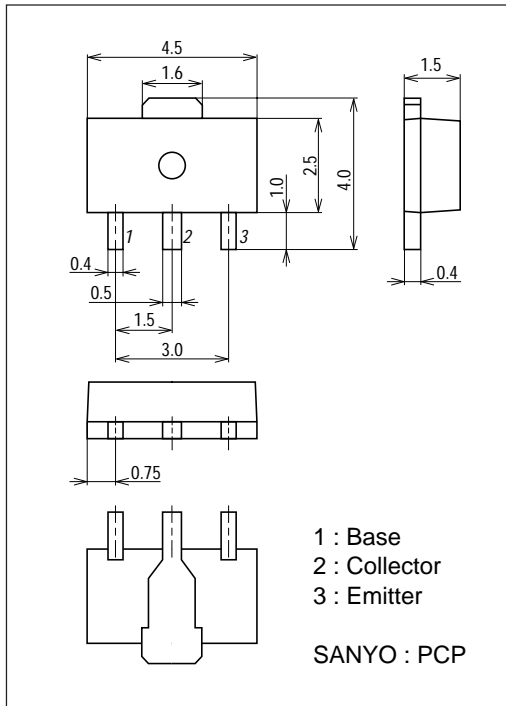
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-6			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		35		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		200		ns
Fall Time	$t_f$	See specified Test Circuit.		24		ns

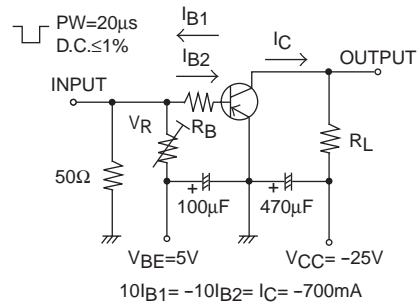
## Package Dimensions

unit : mm

2038B

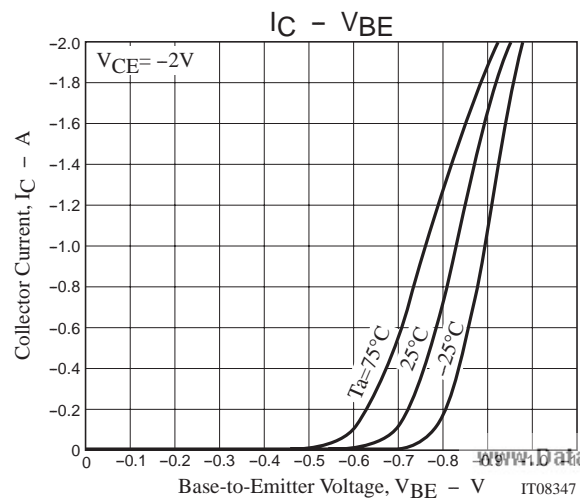
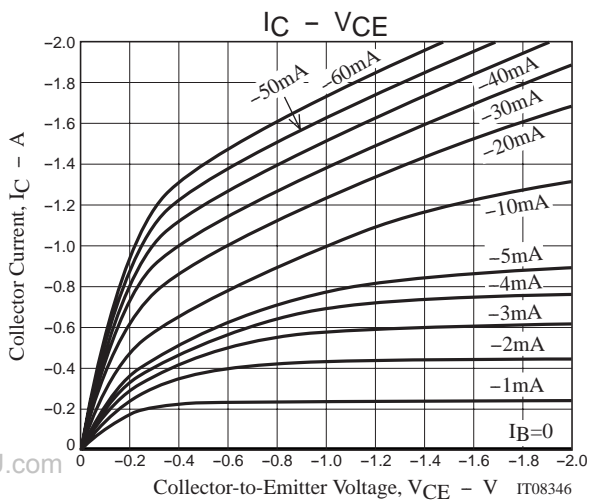


## Switching Time Test Circuit

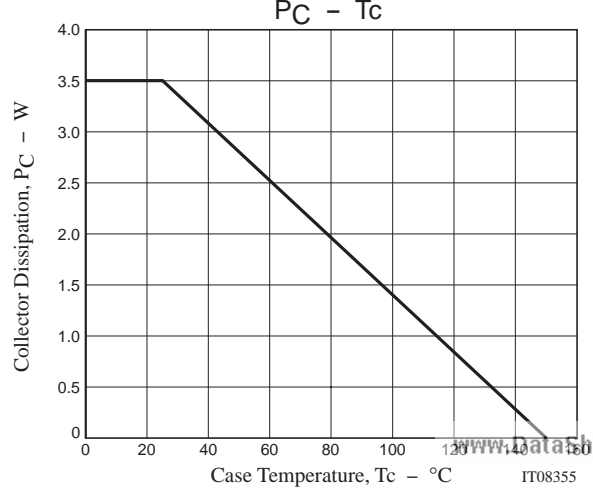
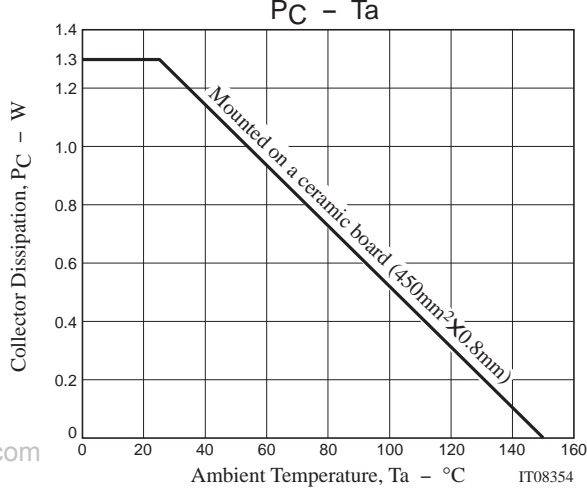
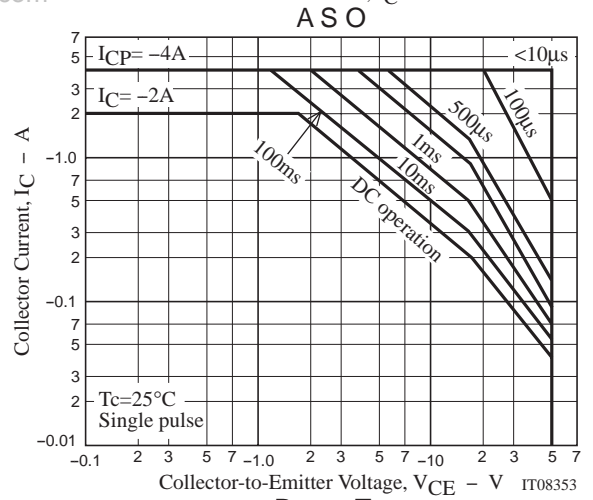
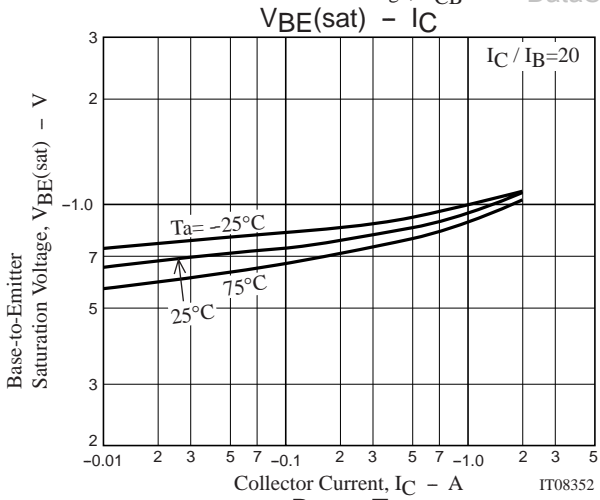
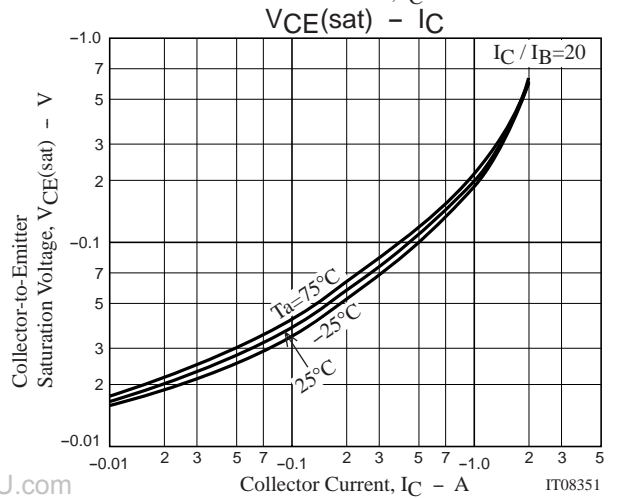
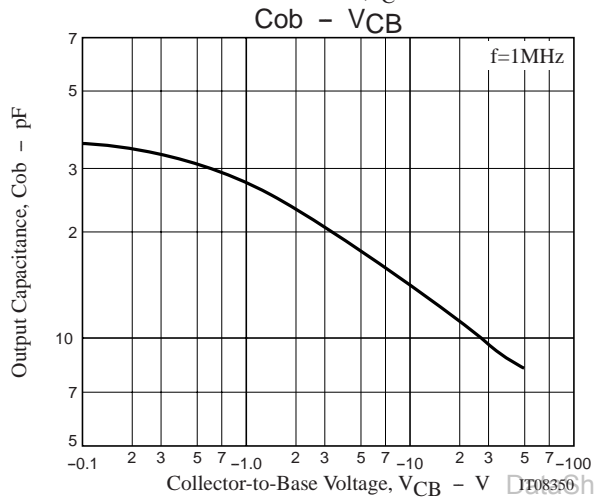
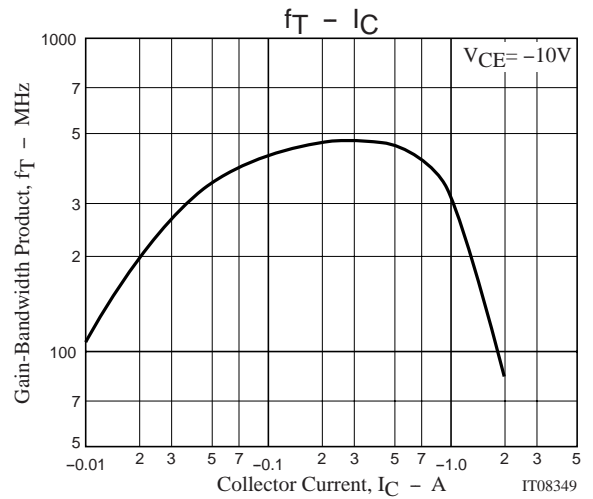
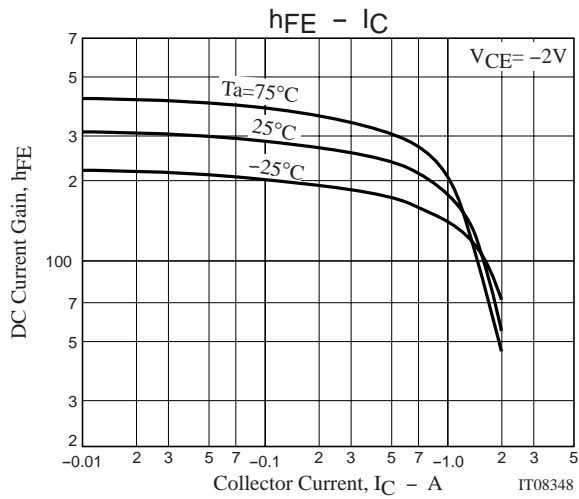


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