



SANYO Semiconductors

## DATA SHEET

# 2SC6098

NPN Epitaxial Planar Silicon Transistor

## High-Voltage Switching Applications

### Applications

- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter.

### Features

- Adoption of FBET, MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- High allowable power dissipation.

### Specifications

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		120	V
Collector-to-Emitter Voltage	V <sub>CES</sub>		120	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		80	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		6.5	V
Collector Current	I <sub>C</sub>		2.5	A
Collector Current (Pulse)	I <sub>CP</sub>		4	A
Base Current	I <sub>B</sub>		500	mA
Collector Dissipation	P <sub>C</sub>		0.8	W
		T <sub>C</sub> =25°C	15	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =70V, I <sub>E</sub> =0A			1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	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	300		600	

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**2SC6098**

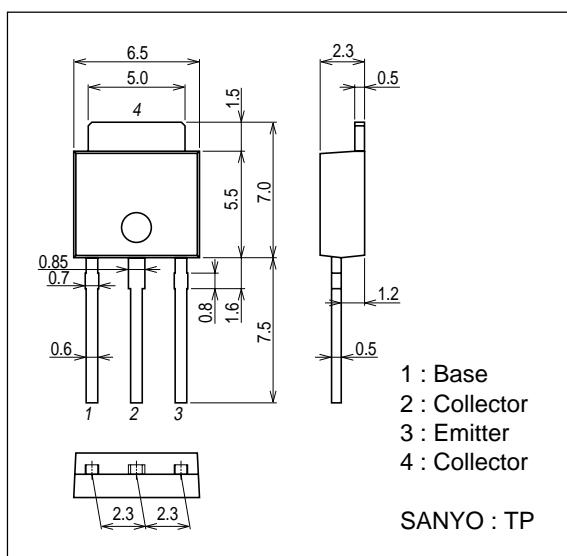
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =500mA		350		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		14		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub> 1	I <sub>C</sub> =1A, I <sub>B</sub> =50mA		110	165	mV
	V <sub>CE(sat)</sub> 2	I <sub>C</sub> =1A, I <sub>B</sub> =100mA		100	150	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =1A, I <sub>B</sub> =100mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0A	120			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CES</sub>	I <sub>C</sub> =100μA, R <sub>BE</sub> =0Ω	120			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	80			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0A	6.5			V
Turn-ON Time	t <sub>on</sub>	See specified Test Circuit.		40		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		920		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		32		ns

## Package Dimensions

unit : mm

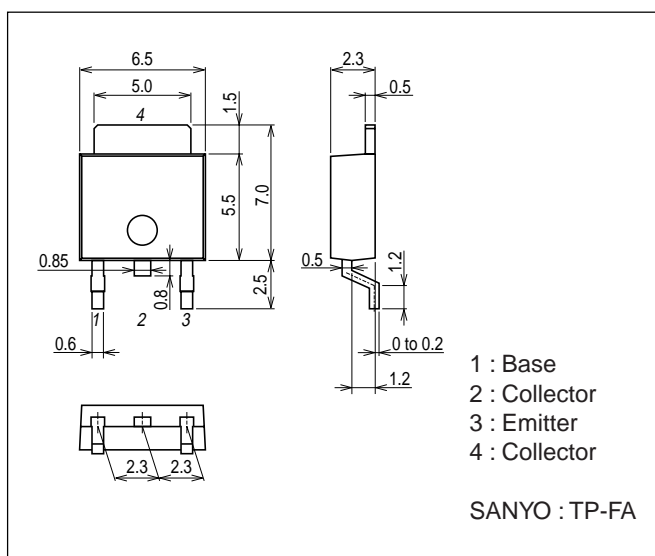
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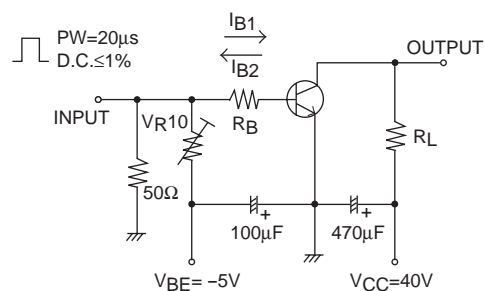
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unit : mm

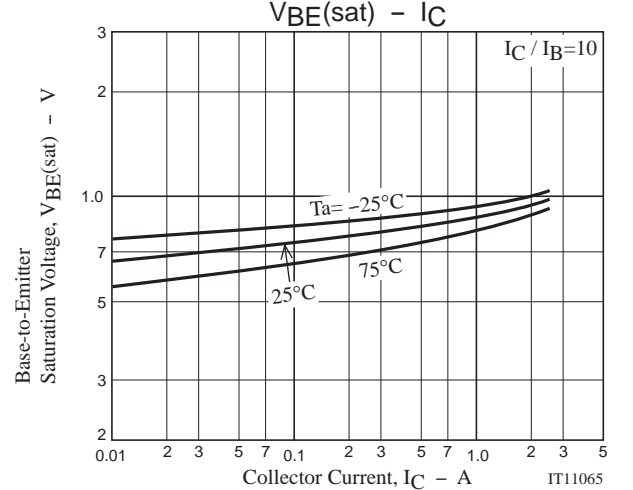
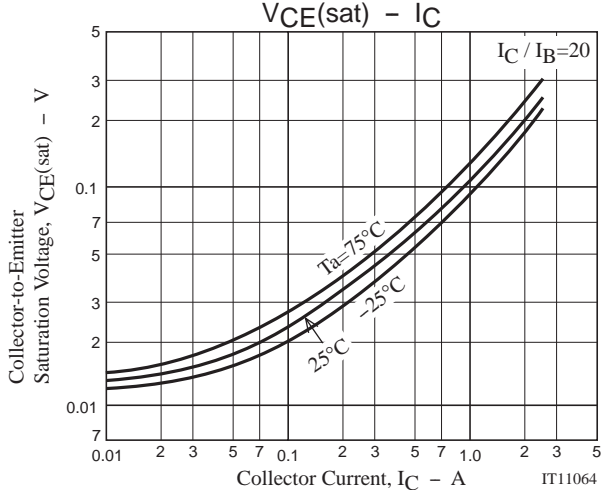
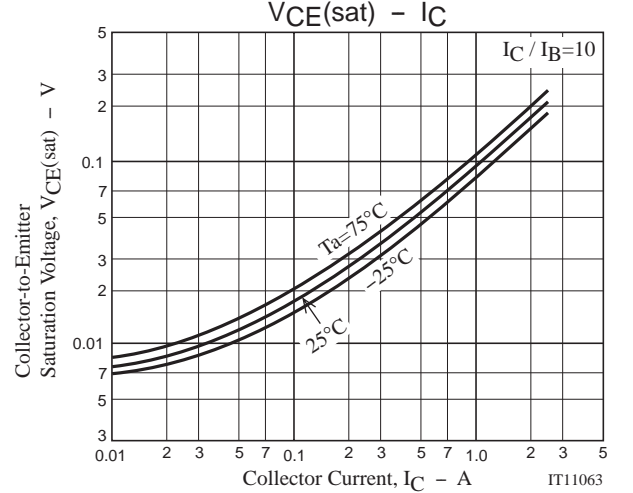
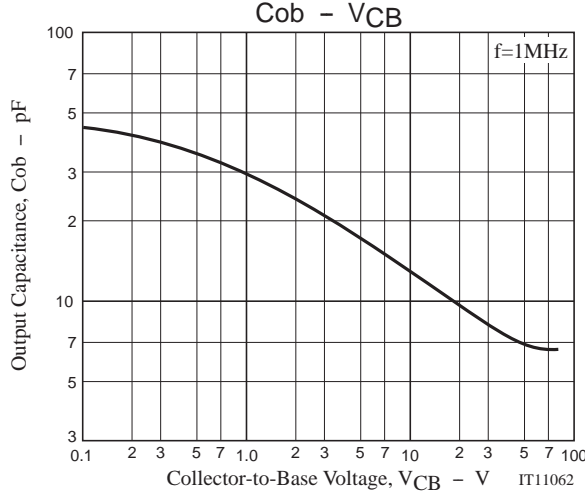
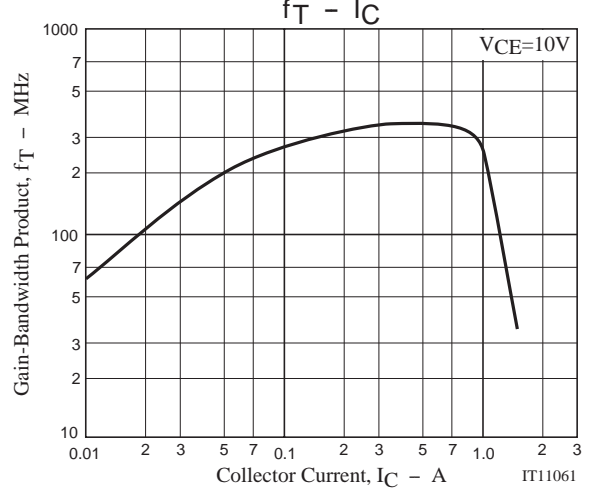
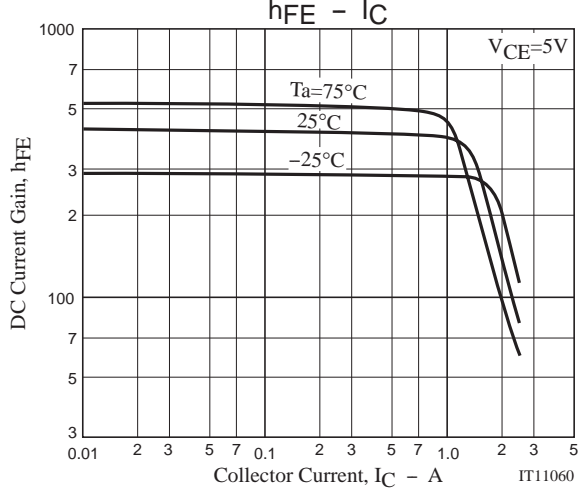
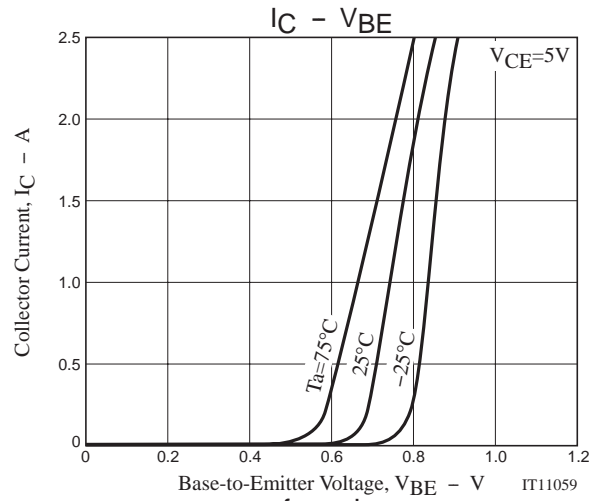
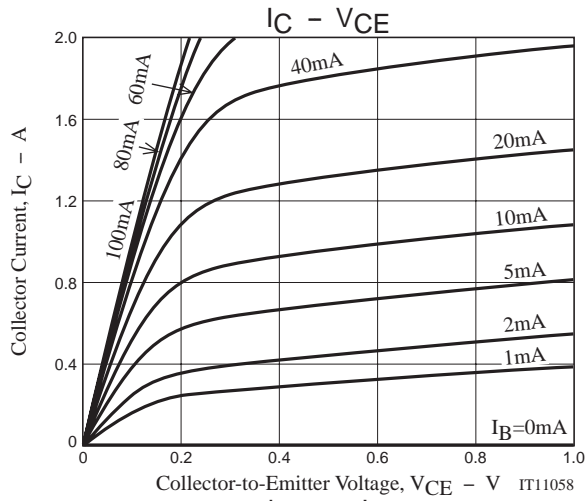
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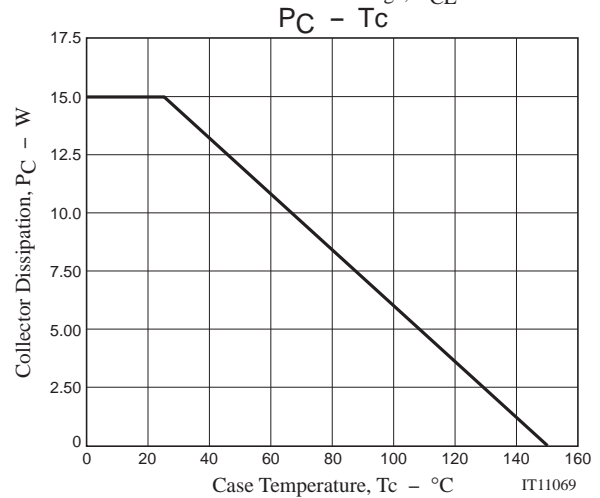
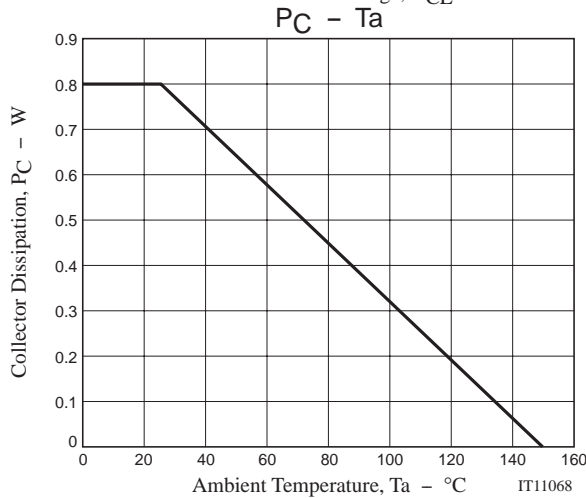
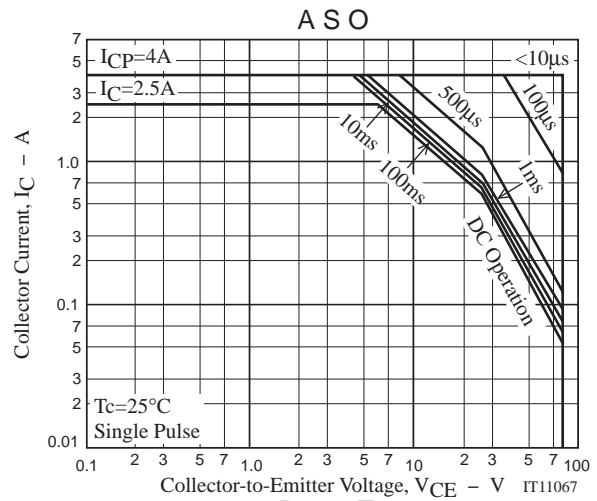
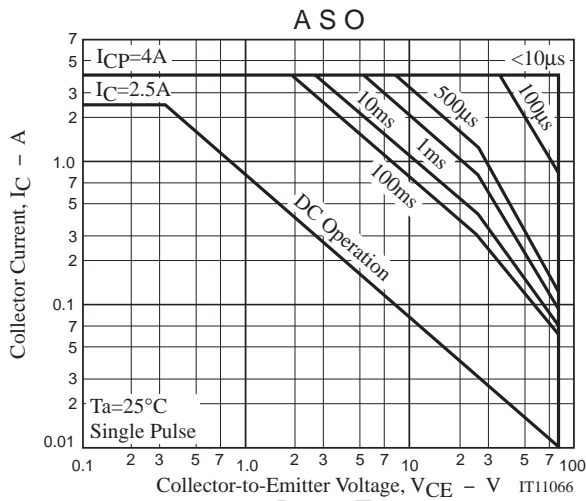


### Switching Time Test Circuit



$$10I_{B1} = -10I_{B2} = I_C = 0.5A$$





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