



SANYO Semiconductors

## DATA SHEET

# 2SC6112

NPN Triple Diffused Planar Silicon Transistor

## Switching Regulator Applications

### Features

- High breakdown voltage and high reliability.
- Ultrahigh-speed switching.
- Wide ASO.
- Adoption of MBIT process.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		1000	V
Collector-to-Emitter Voltage	VCEO		500	V
Emitter-to-Base Voltage	VEBO		7	V
Collector Current	IC		15	A
Collector Current (Pulse)	ICP	PW≤300μs, duty cycle≤10%	25	A
Collector Dissipation	PC		1.75	W
		Tc=25°C	55	W
Junction Temperature	TJ		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =500V, I <sub>E</sub> =0A			10	μA
Emitter Cutoff Current	IEBO	VEB=5V, IC=0A			10	μA
DC Current Gain	hFE1	VCE=5V, IC=1.2A	40		80	
	hFE2	VCE=5V, IC=6A	8			
Gain-Bandwidth Product	fT	VCE=10V, IC=1.2A		18		MHz
Output Capacitance	Cob	VCB=10V, f=1MHz		80		pF

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**SANYO Semiconductor Co., Ltd.**

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# 2SC6112

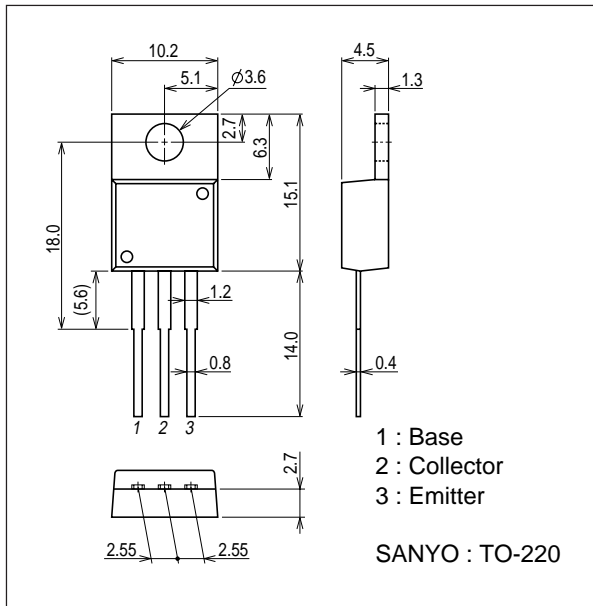
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=6A, I_B=1.2A$			1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=6A, I_B=1.2A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0A$	1000			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	500			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0A$	7			V
Collector-to-Emitter Saturation Voltage	$V_{CEX(sus)}$	$I_C=2.5A, I_{B1}=-I_{B2}=2A, L=1mH, \text{clamped}$	500			V
Turn-ON Time	$t_{on}$	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=7A, R_L=50\Omega$			0.5	$\mu s$
Storage Time	$t_{stg}$	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=7A, R_L=50\Omega$			3.0	$\mu s$
Fall Time	$t_f$	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=7A, R_L=50\Omega$			0.3	$\mu s$

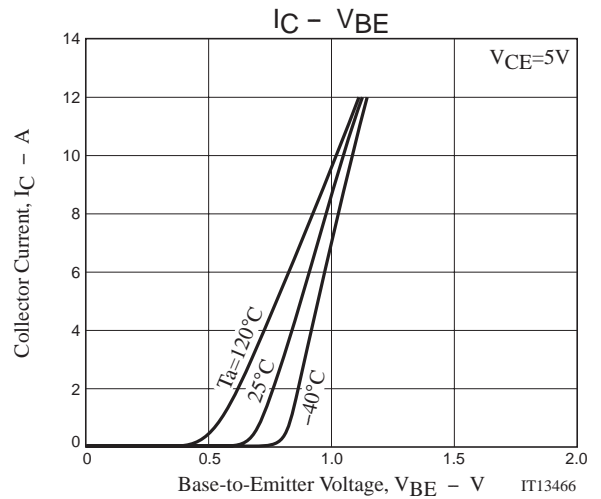
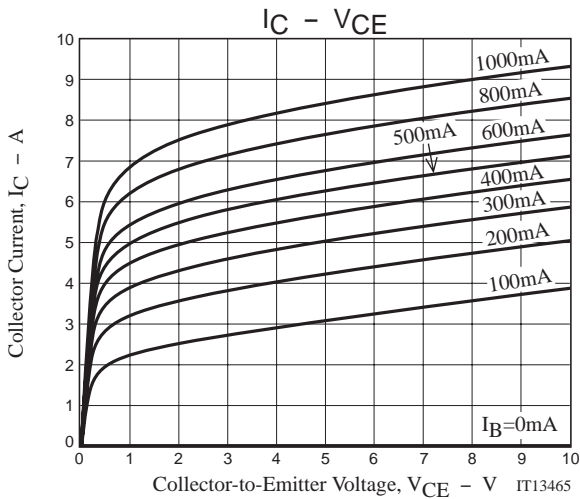
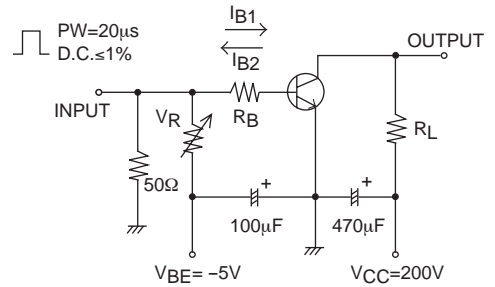
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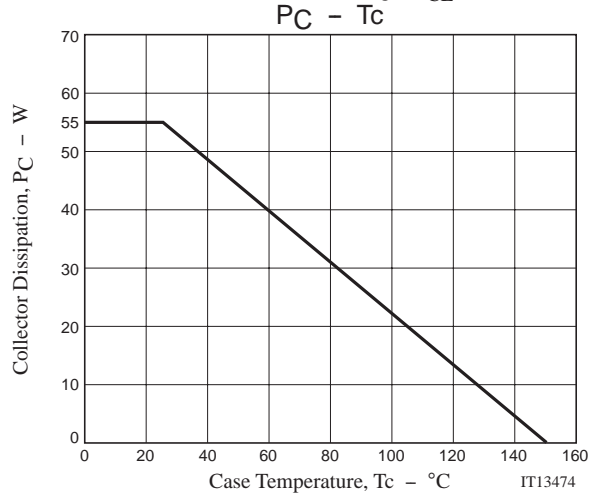
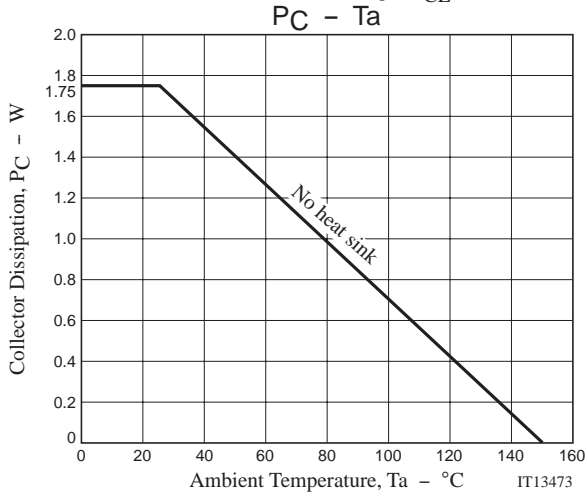
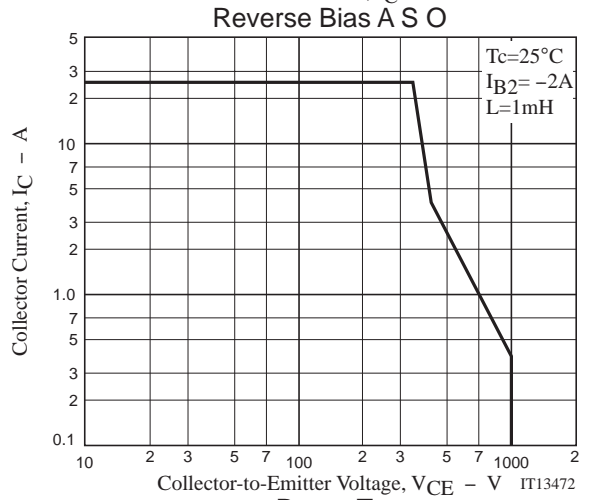
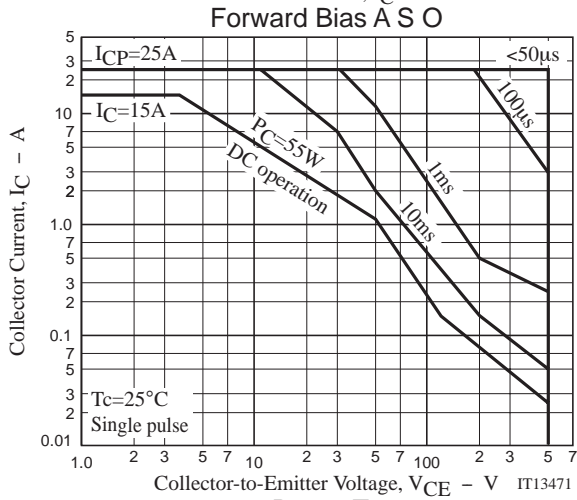
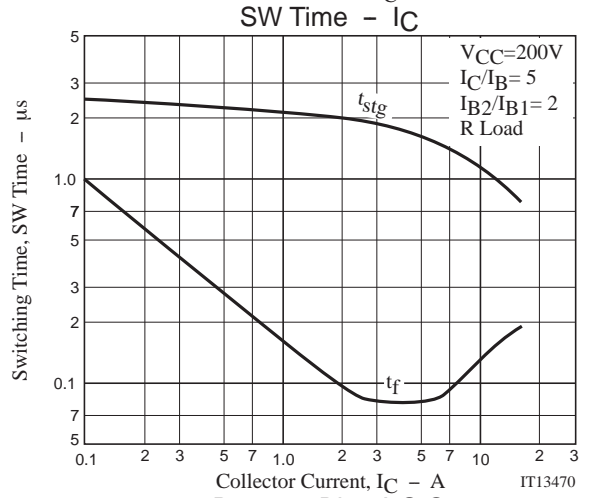
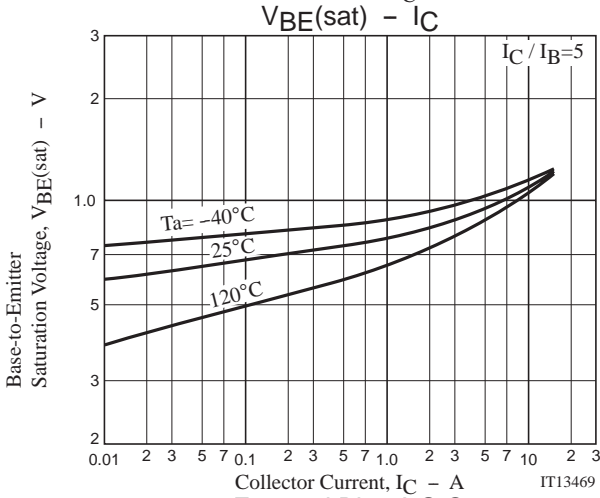
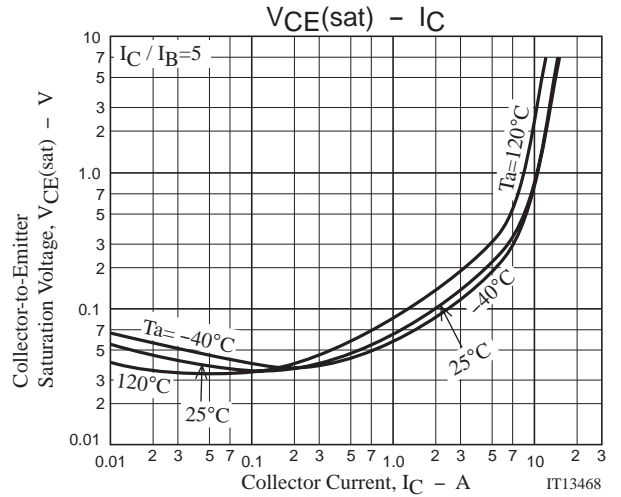
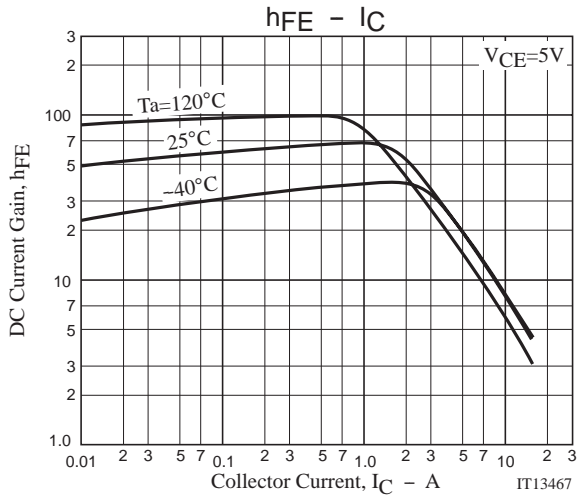
unit : mm (typ)

7507-001



## Switching Time Test Circuit





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