



SANYO Semiconductors

## DATA SHEET

# 2SC6113 — NPN Triple Diffused Planar Silicon Transistor

## For 14, 21 inch TV Power Supply

### Applications

- Recommended for use in 14, 21 inch TV power supply.

### Features

- High breakdown voltage and high reliability.
- Ultrahigh-speed switching.
- Wide ASO.
- Adoption of MBIT process.
- Attachment workability is good by Mica-less package.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		1000	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		500	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		7	V
Collector Current	I <sub>C</sub>		15	A
Collector Current (Pulse)	I <sub>CP</sub>	PW≤300μs, duty cycle≤10%	25	A
Collector Dissipation	P <sub>C</sub>		3	W
		T <sub>c</sub> =25°C	60	W
Junction Temperature	T <sub>j</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

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**SANYO Semiconductor Co., Ltd.**

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## 2SC6113

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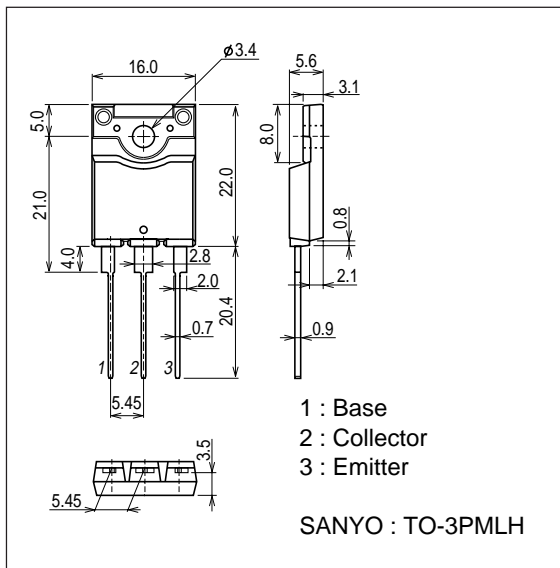
### Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=500\text{V}$ , $I_E=0\text{A}$			10	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0\text{A}$			10	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=5\text{V}$ , $I_C=1.2\text{A}$	40		80	
	$h_{FE2}$	$V_{CE}=5\text{V}$ , $I_C=6\text{A}$	8			
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}$ , $I_C=1.2\text{A}$		18		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$		80		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=6\text{A}$ , $I_B=1.2\text{A}$			1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=6\text{A}$ , $I_B=1.2\text{A}$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}$ , $I_E=0\text{A}$	1000			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5\text{mA}$ , $R_{BE}=\infty$	500			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}$ , $I_C=0\text{A}$	7			V
Collector-to-Emitter Saturation Voltage	$V_{CEX(sus)}$	$I_C=2.5\text{A}$ , $I_{B1}=-I_{B2}=2\text{A}$ , $L=1\text{mH}$ , clamped	500			V
Turn-ON Time	$t_{on}$	$V_{CC}=200\text{V}$ , $5I_{B1}=-2.5I_{B2}=I_C=7\text{A}$ , $R_L=50\Omega$			0.5	$\mu\text{s}$
Storage Time	$t_{stg}$	$V_{CC}=200\text{V}$ , $5I_{B1}=-2.5I_{B2}=I_C=7\text{A}$ , $R_L=50\Omega$			3.0	$\mu\text{s}$
Fall Time	$t_f$	$V_{CC}=200\text{V}$ , $5I_{B1}=-2.5I_{B2}=I_C=7\text{A}$ , $R_L=50\Omega$			0.3	$\mu\text{s}$

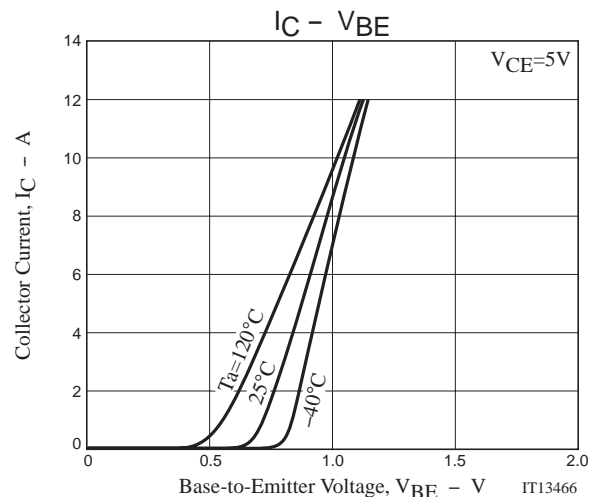
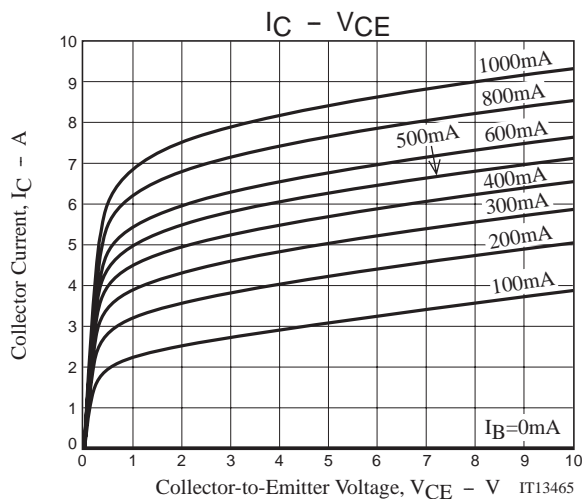
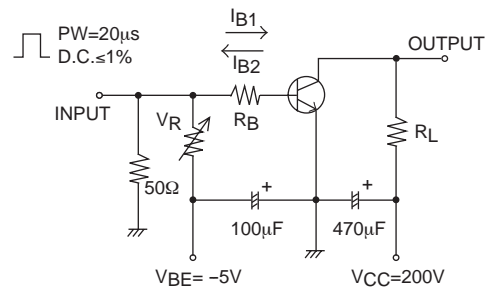
### Package Dimensions

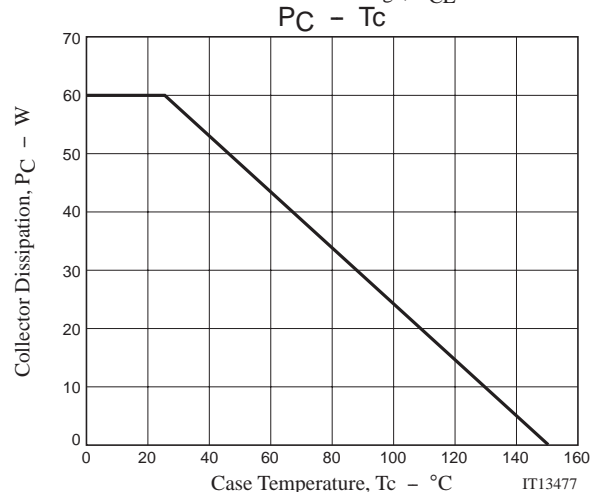
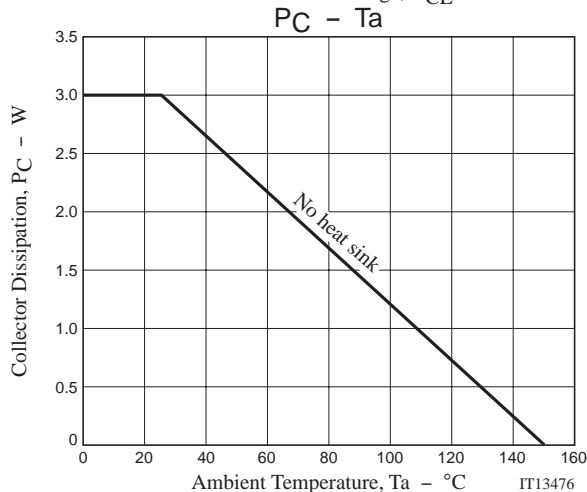
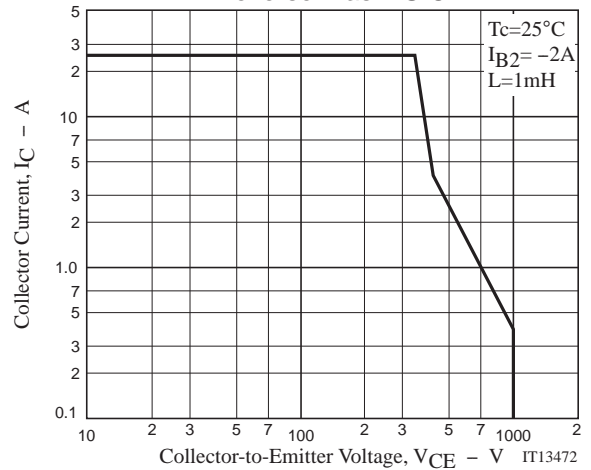
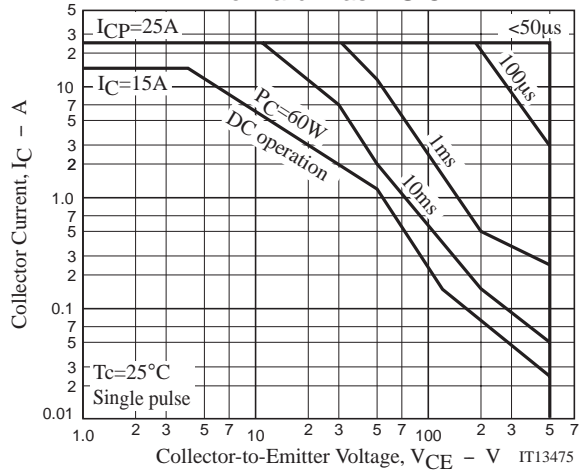
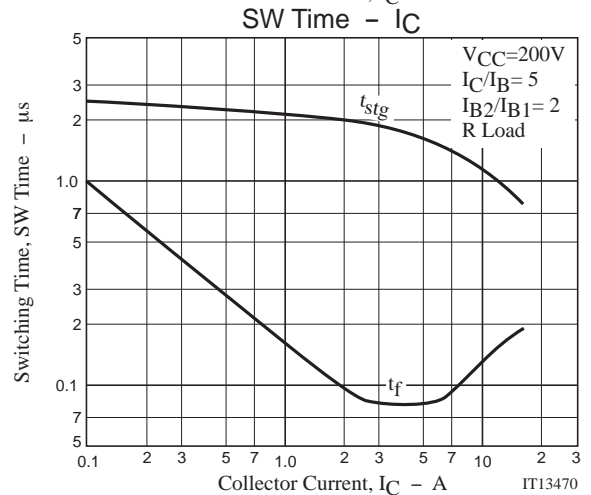
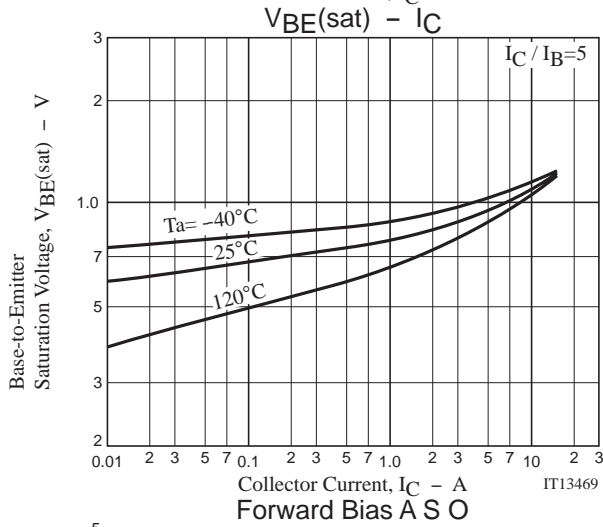
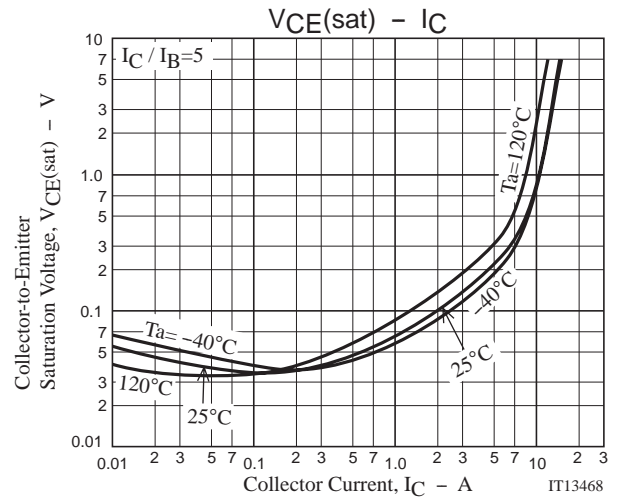
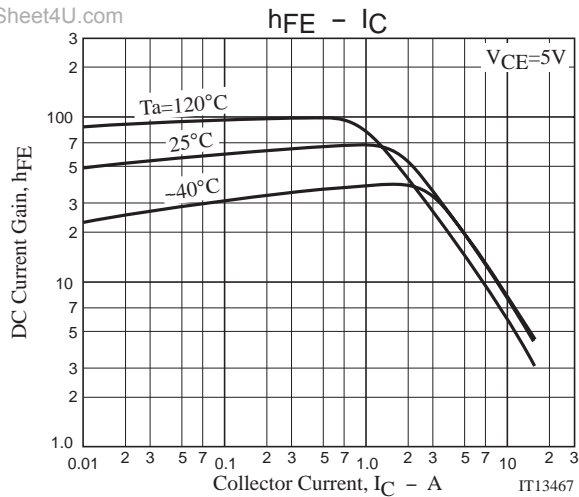
unit : mm (typ)

7504-001



### Switching Time Test Circuit





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