Ordering number : ENA1155

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_{CBO}		1000	V
Collector-to-Emitter Voltage	V_{CEO}		500	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		15	A
Collector Current (Pulse)	I_{CP}	PW≤300μs, duty cycle≤10%	25	A
Collector Dissipation	P_C		3	W
		Tc=25°C	60	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

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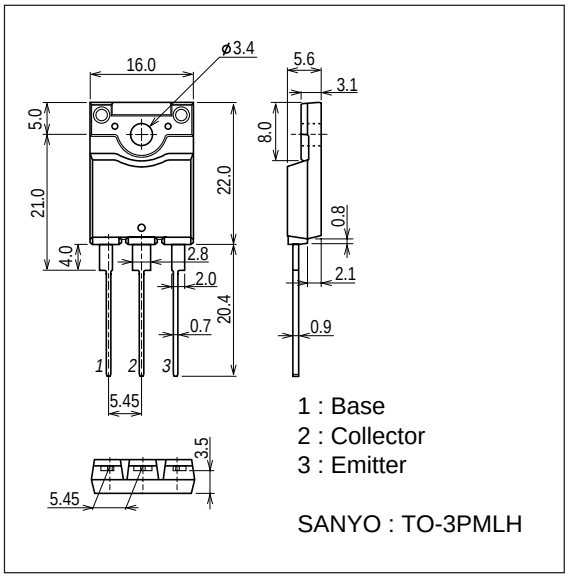
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=500V, I_E=0A			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0A			10	μA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=1.2A	40		80	
	$h_{FE}2$	V_{CE}=5V, I_C=6A	8			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=1.2A		18		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		80		pF
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}=∞	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, clamped	500			V
Turn-ON Time	t_{on}	V_{CC}=200V, 5I_{B1}=−2.5I_{B2}=I_C=7A, R_L=50Ω			0.5	μs
Storage Time	t_{stg}	V_{CC}=200V, 5I_{B1}=−2.5I_{B2}=I_C=7A, R_L=50Ω			3.0	μs
Fall Time	t_f	V_{CC}=200V, 5I_{B1}=−2.5I_{B2}=I_C=7A, R_L=50Ω			0.3	μs

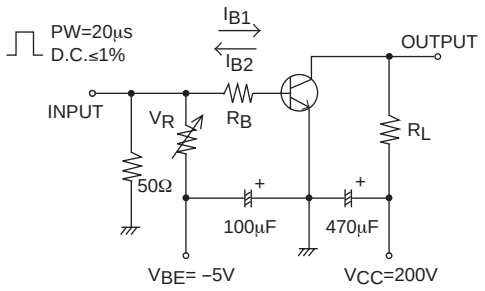
Package Dimensions

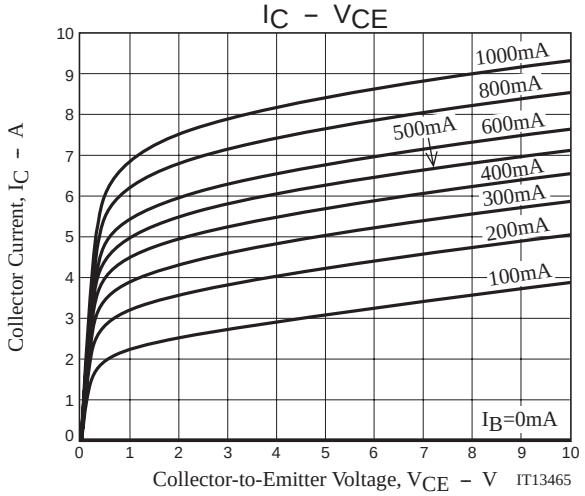
unit : mm (typ)

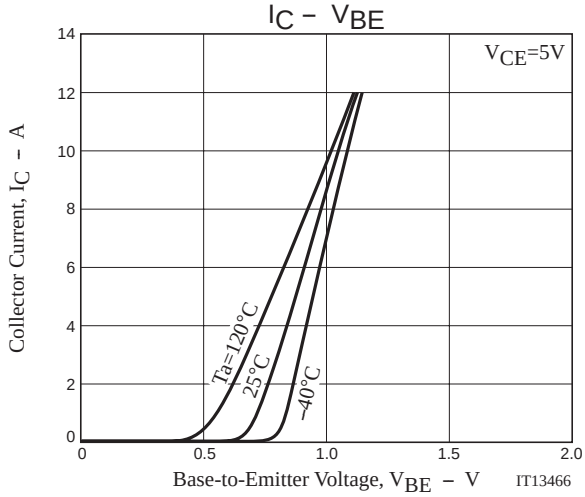
7504-001



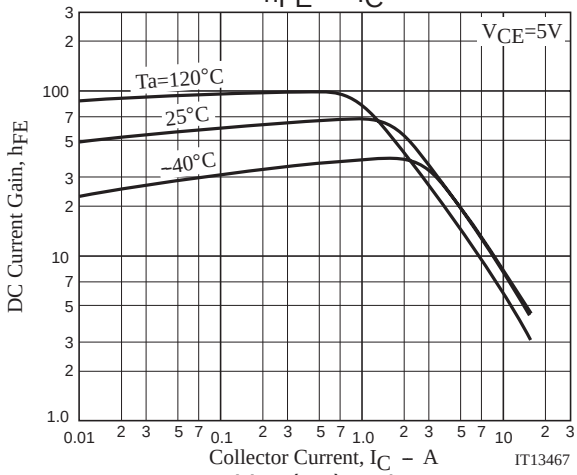
Switching Time Test Circuit



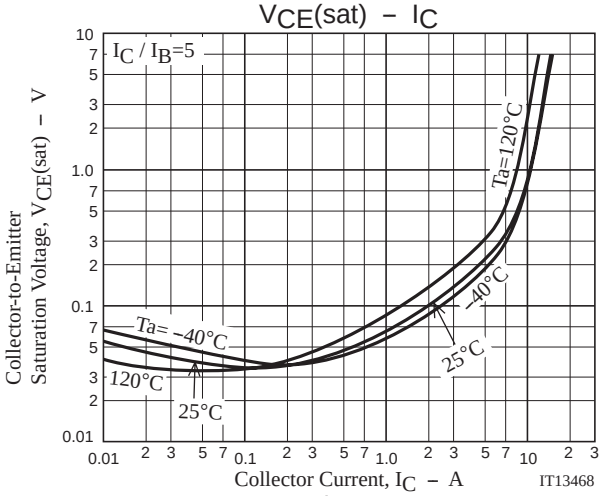




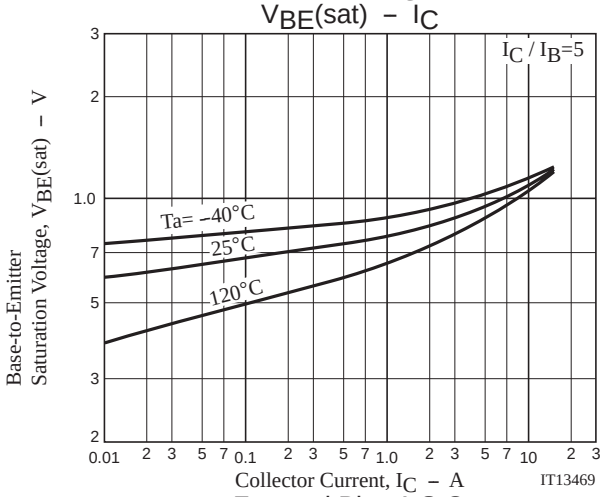
h_{FE} – I_C



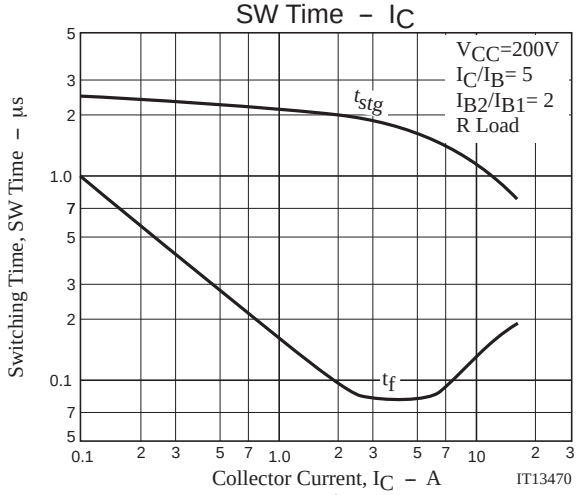
$V_{CE}(sat)$ – I_C



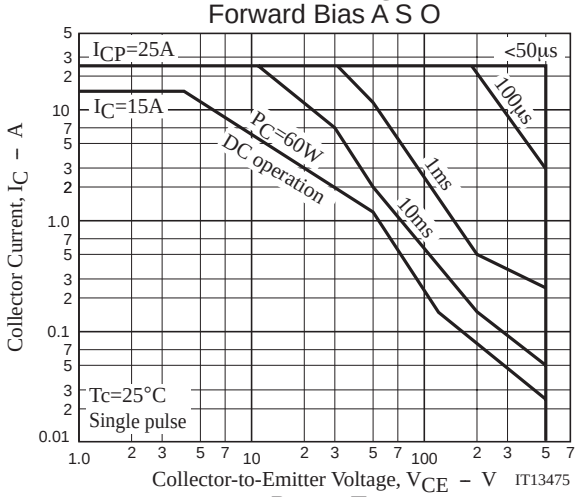
$V_{BE}(sat)$ – I_C



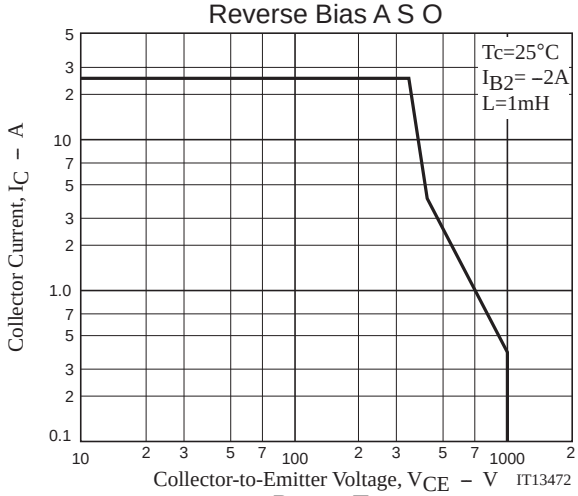
SW Time – I_C



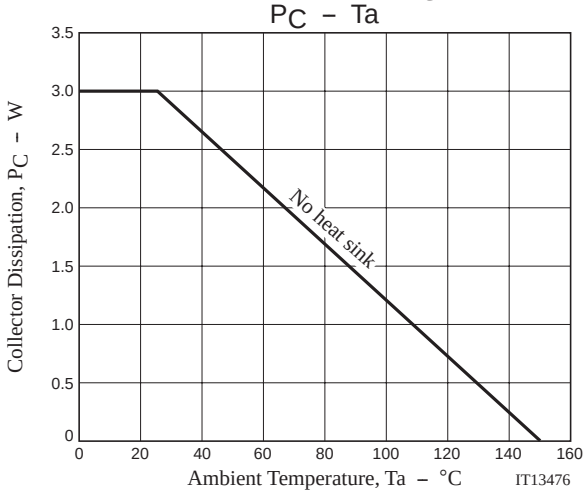
Forward Bias A S O



Reverse Bias A S O



P_C – Ta



P_C – Tc