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Ordering number : ENA1160

SANYO Semiconductors
DATA SHEET

2SC6146 — NPN Triple Diffused Planar Silicon Transistor
Switching Regulator Applications

Features

- High breakdown voltage.
- 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	V_{CBO}		800	V
Collector-to-Emitter Voltage	V_{CES}		800	V
Collector-to-Emitter Voltage	V_{CEO}		350	V
Emitter-to-Base Voltage	V_{EBO}		8	V
Collector Current	I_C		1	A
Collector Current (Pulse)	I_{CP}	PW≤300μs, duty cycle≤10%	2	A
Base Current	I_B		0.5	A
Collector Dissipation	P_C		1	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	I_{CBO}	V_{CB}=400V, 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=0.1A	100		200	
	$h_{FE}2$	V_{CE}=5V, I_C=0.5A	10			
	$h_{FE}3$	V_{CE}=5V, I_C=1mA	20			

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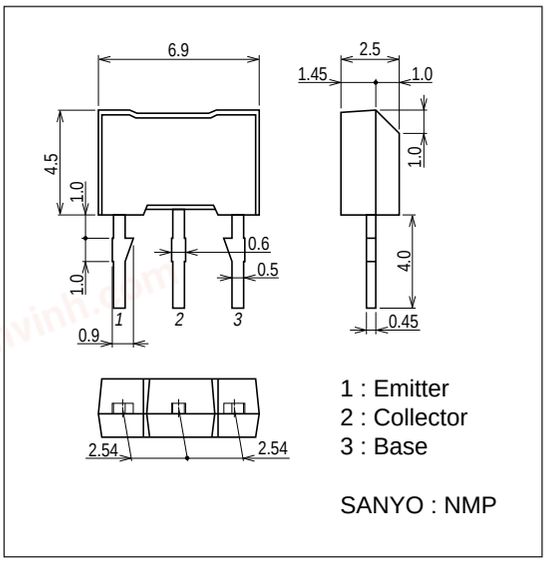
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=0.1A		20		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		10		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=0.5A, I_B=0.1A			0.8	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=0.5A, I_B=0.1A			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0A	800			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=0Ω	800			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=5mA, R_{BE}=∞	350			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0A	8			V
Turn-ON Time	t_{on}	I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400Ω, V_{CC}=200V			1.0	μs
Storage Time	t_{stg}	I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400Ω, V_{CC}=200V			1.0	μs
Fall Time	t_f	I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400Ω, V_{CC}=200V			0.3	μs

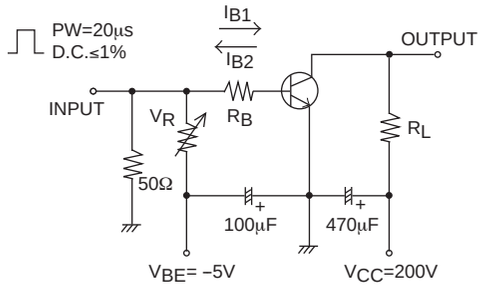
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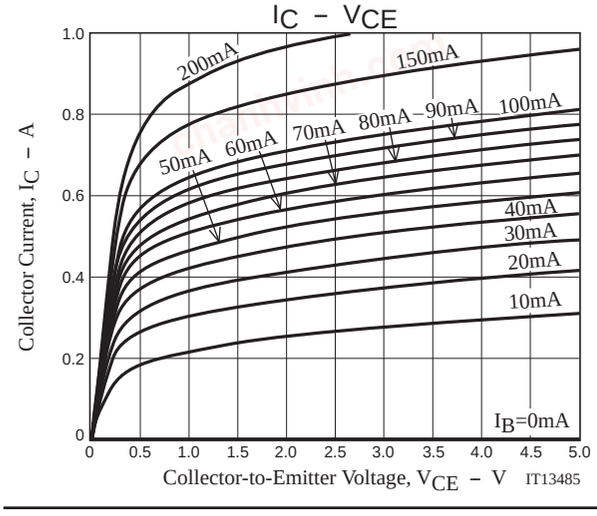
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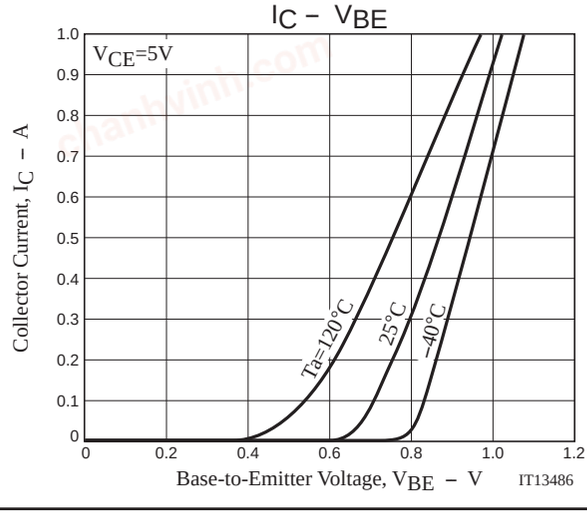
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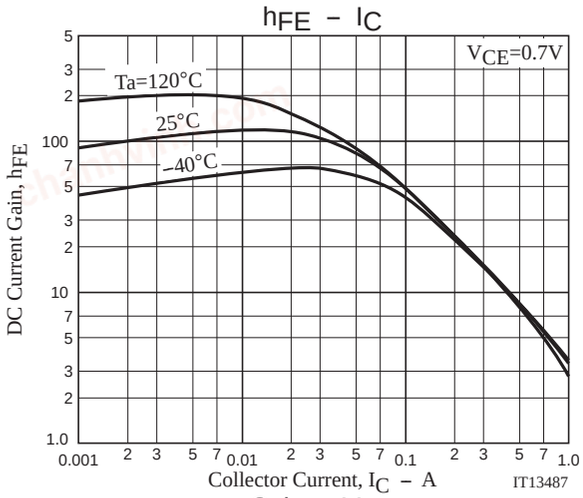
Switching Time Test Circuit

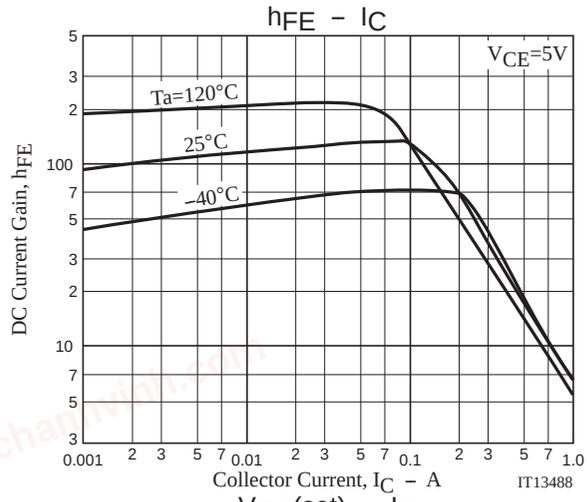


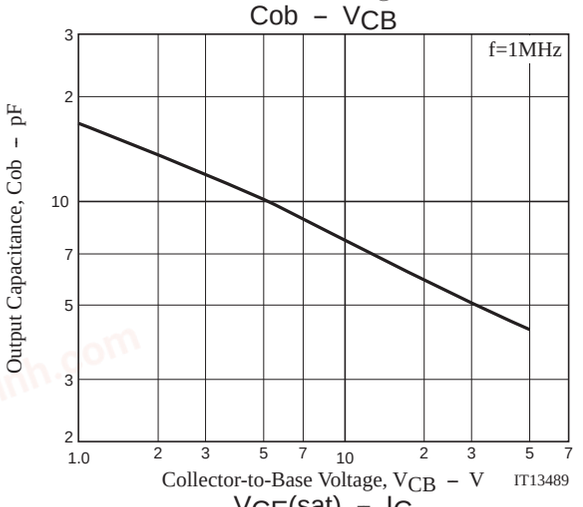


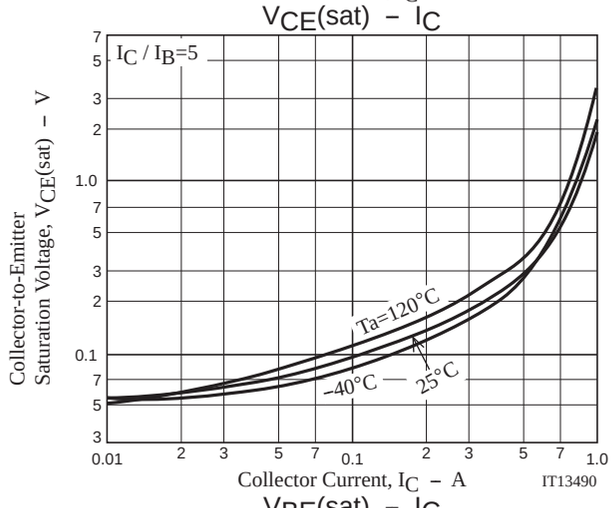


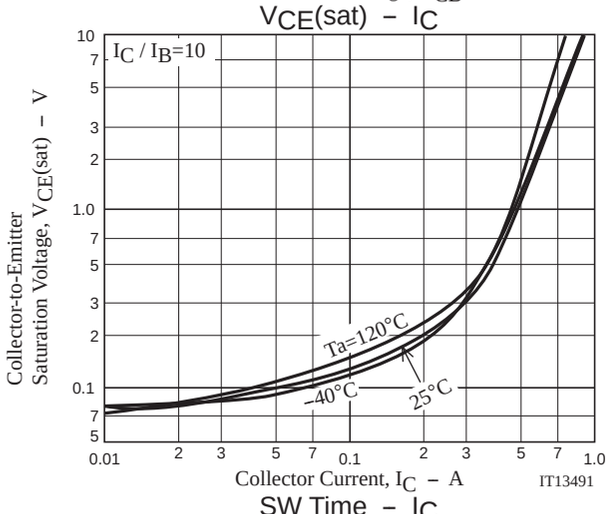
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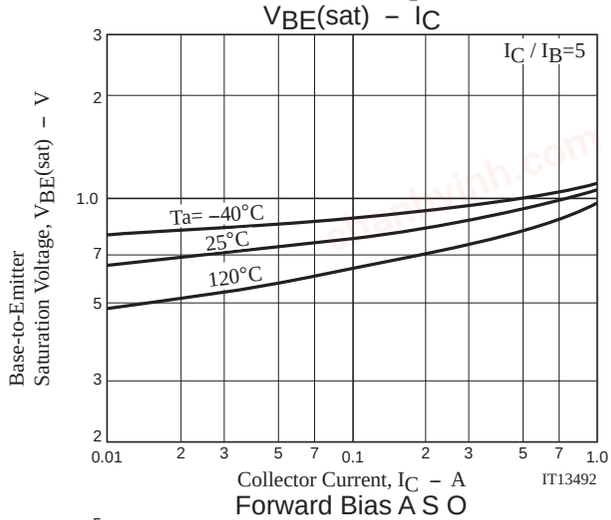


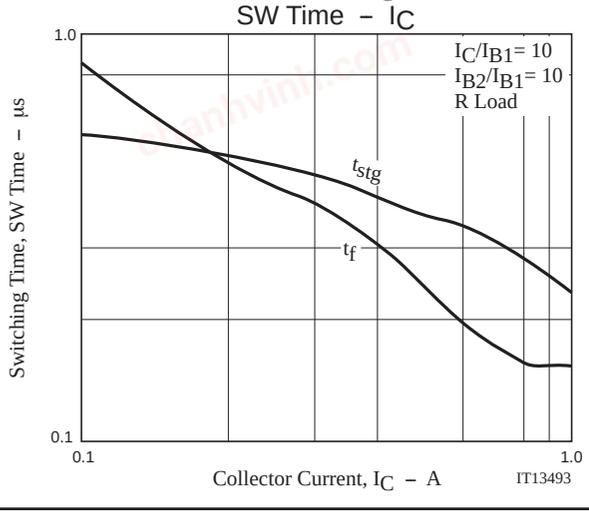


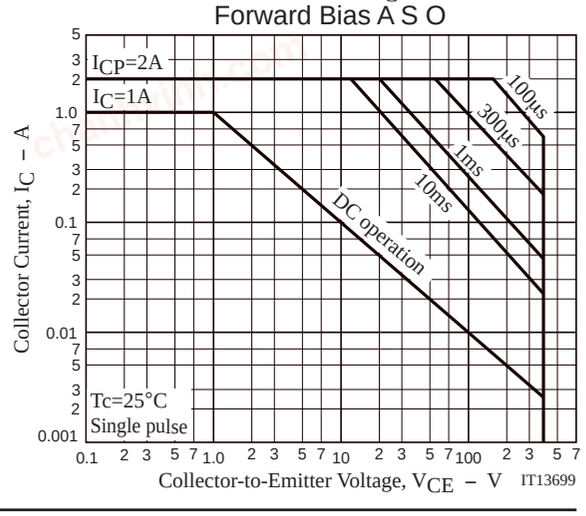




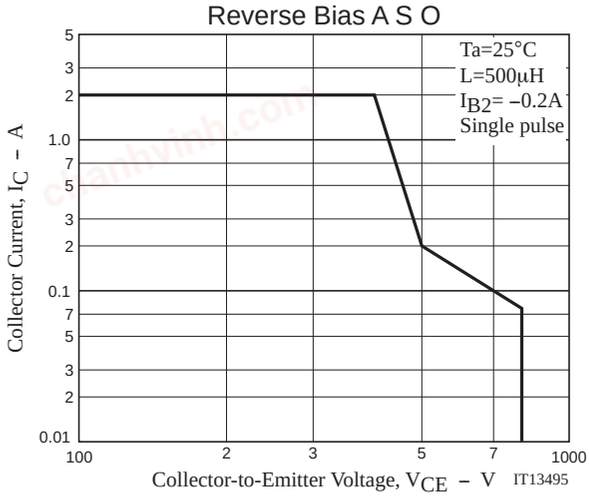


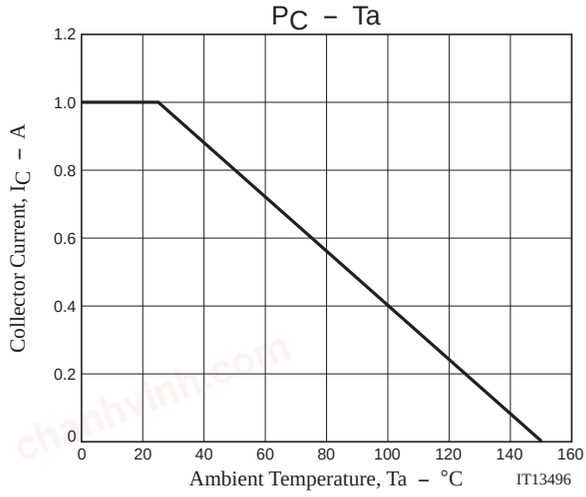






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