



SANYO Semiconductors

## DATA SHEET

# 2SC6083A

 — NPN Triple Diffused Planar Silicon Transistor  
**Switching Regulator Applications**

## Features

- High breakdown voltage.
- High-speed switching.
- Wide ASO.
- Adoption of MBIT process.

## Specifications

**Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		700	V
Collector-to-Emitter Voltage	VCEO		400	V
Emitter-to-Base Voltage	VEBO		8	V
Collector Current	IC		1	A
Collector Current (Pulse)	ICP	PW $\leq$ 300 $\mu$ s, duty cycle $\leq$ 10%	2	A
Base Current	IB		0.5	A
Collector Dissipation	PC		0.6	W
Junction Temperature	Tj		150	$^\circ\text{C}$
Storage Temperature	Tstg		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	$V_{CB}=350\text{V}$ , $I_E=0\text{A}$			10	$\mu\text{A}$
Emitter Cutoff Current	IEBO	$V_{EB}=5\text{V}$ , $I_C=0\text{A}$			10	$\mu\text{A}$
DC Current Gain	hFE1	$V_{CE}=5\text{V}$ , $I_C=0.1\text{A}$	50		100	
	hFE2	$V_{CE}=5\text{V}$ , $I_C=0.5\text{A}$	10			
	hFE3	$V_{CE}=5\text{V}$ , $I_C=1\text{mA}$	30			
Gain-Bandwidth Product	fT	$V_{CE}=10\text{V}$ , $I_C=0.1\text{A}$		20		MHz
Output Capacitance	Cob	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$		8		pF

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# 2SC6083A

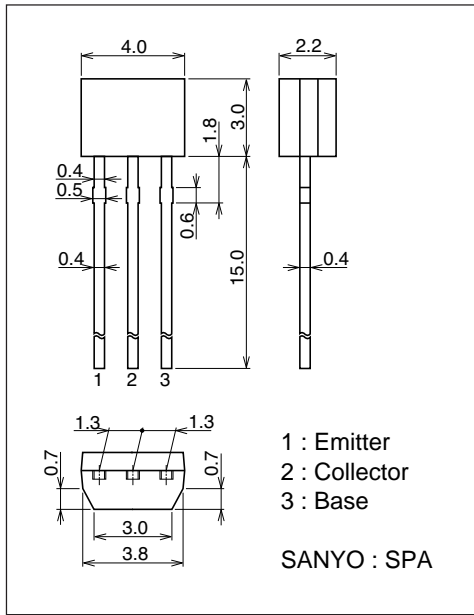
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=0.1A$			0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5A, I_B=0.1A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0A$	700			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0A$	8			V
Turn-ON Time	$t_{on}$	$I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400\Omega, V_{CC}=200V$			1.0	$\mu s$
Storage Time	$t_{stg}$	$I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400\Omega, V_{CC}=200V$			2.5	$\mu s$
Fall Time	$t_f$	$I_C=0.5A, I_{B1}=0.05A, I_{B2}=-0.5A, R_L=400\Omega, V_{CC}=200V$			0.3	$\mu s$

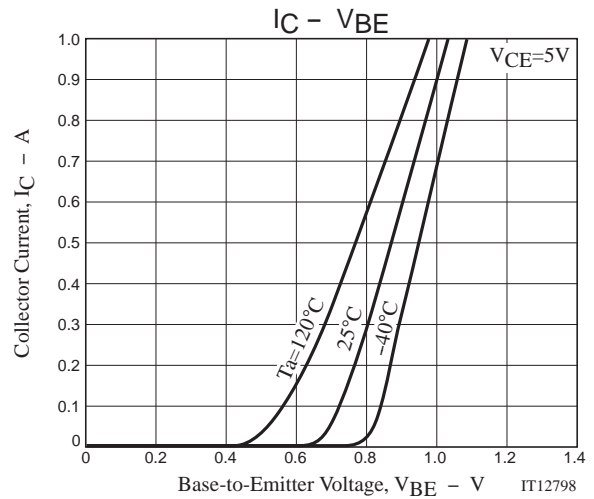
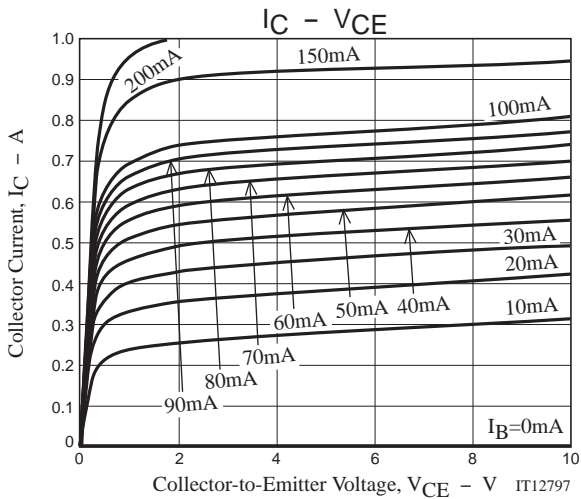
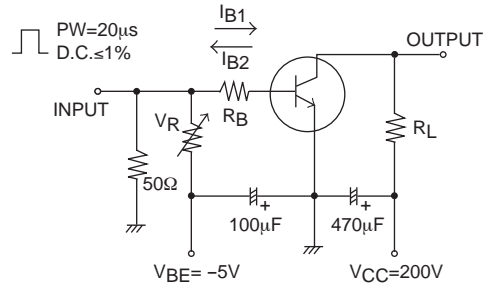
## Package Dimensions

unit : mm (typ)

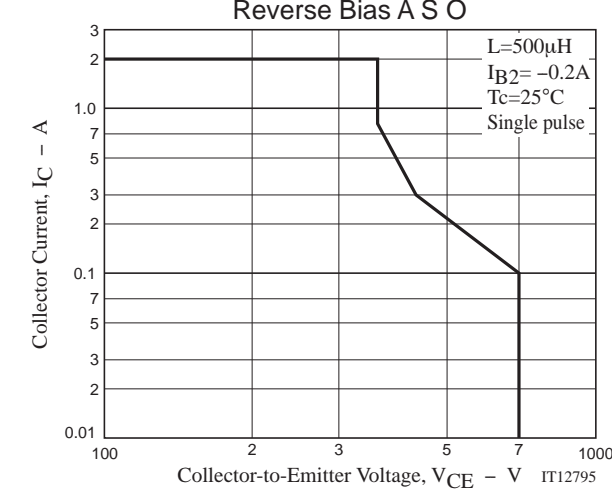
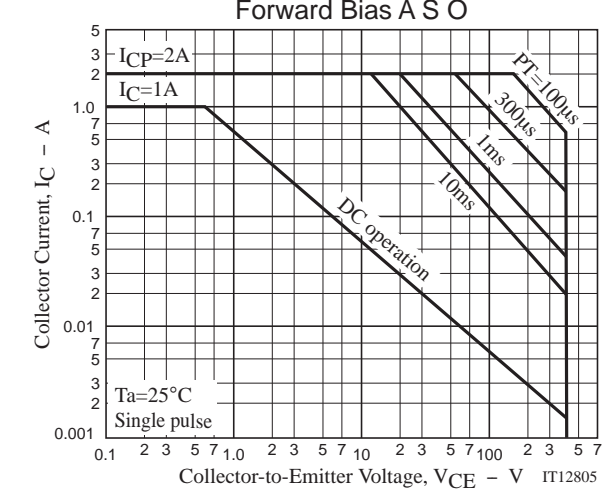
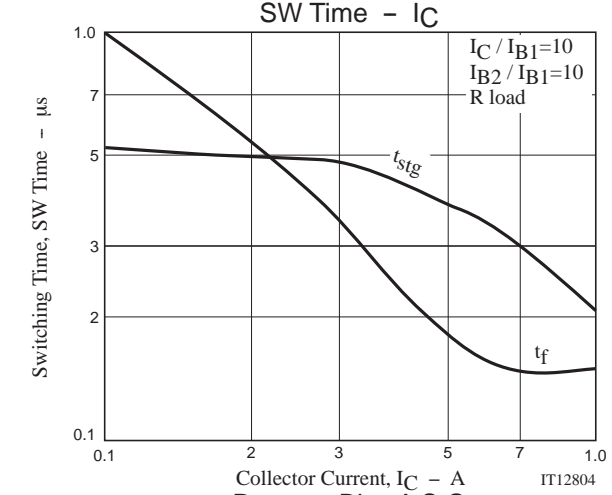
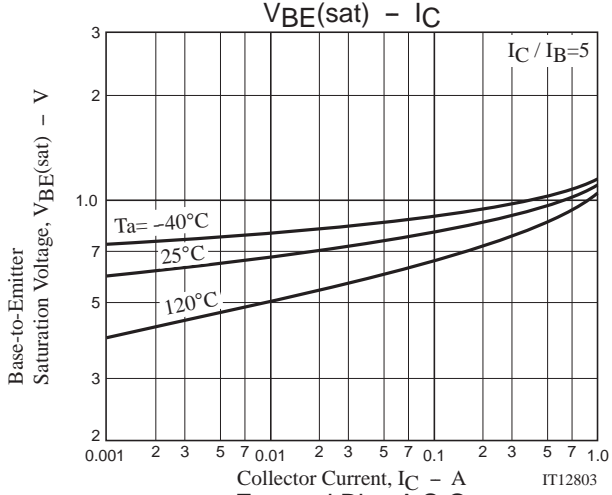
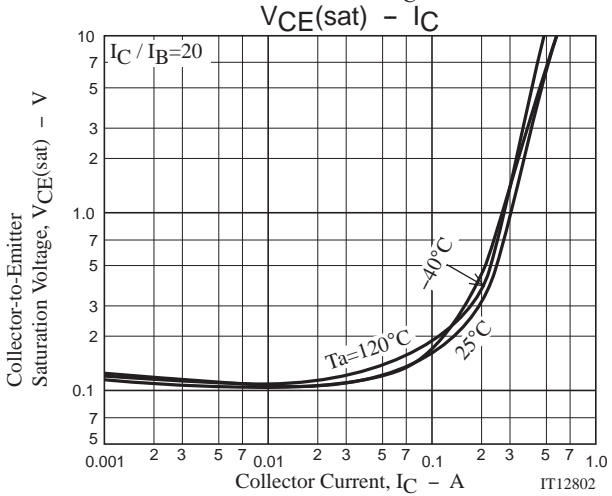
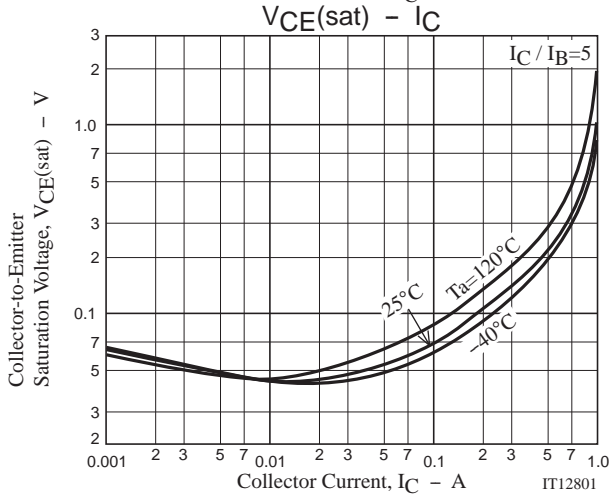
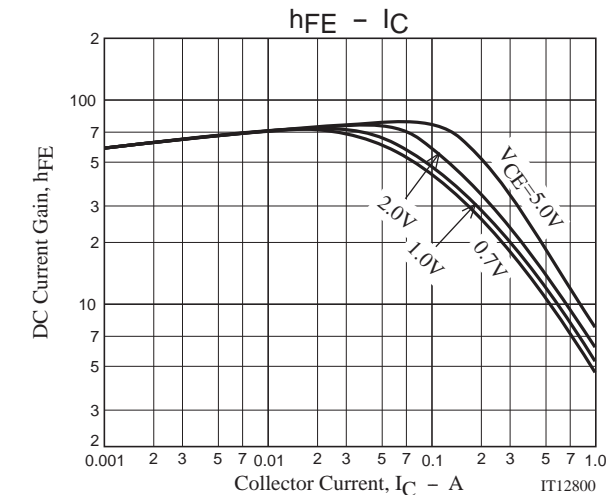
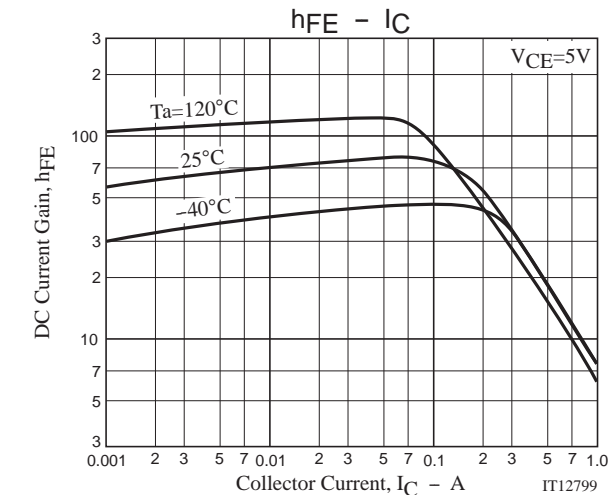
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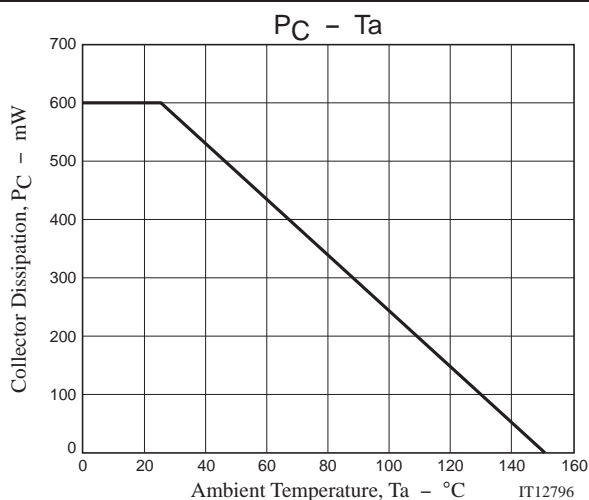


## Switching Time Test Circuit



# 2SC6083A





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