

# 2SB817C / 2SD1047C

PNP Epitaxial Planar Silicon Transistor  
NPN Triple Diffused Planar Silicon Transistor

140V / 12A, AF 80W Output Applications

## Features

- Large current capacitance.
- Wide ASO and high durability against breakdown.
- Adoption of MBIT process.

## Specifications ( ) : 2SB817C

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		(-)160	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		(-)140	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(-)6	V
Collector Current	I <sub>C</sub>		(-)12	A
Collector Current (Pulse)	I <sub>CP</sub>		(-)20	A
Collector Dissipation	P <sub>C</sub>		2.5	W
		T <sub>c</sub> =25°C	120	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =(-)160V, I <sub>E</sub> =0A			(-)0.1	mA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0A			(-)0.1	mA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)1A	100		200	
	h <sub>FE2</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)5A	35			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)1A		(10)15		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		(280)140		pF
Base-to-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)5A			1.5	V
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)5A, I <sub>B</sub> =(-)0.5A		(-0.3)0.2	(-)2.0	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =(-)5mA, I <sub>E</sub> =0A	(-)160			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =(-)50mA, R <sub>BE</sub> =∞	(-)140			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =(-)5mA, I <sub>C</sub> =0A	(-)6			V

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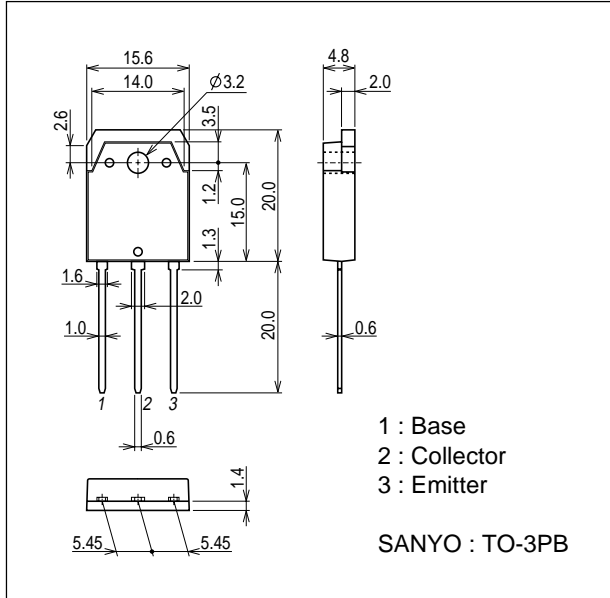
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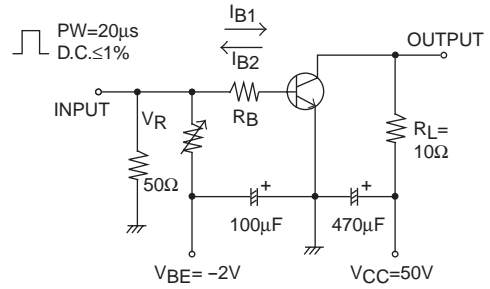
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-On Time	$t_{on}$	See specified Test Circuit.		(0.45)0.56		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit.		(1.75)3.3		$\mu s$
Fall Time	$t_f$	See specified Test Circuit.		(0.25)0.4		$\mu s$

## Package Dimensions

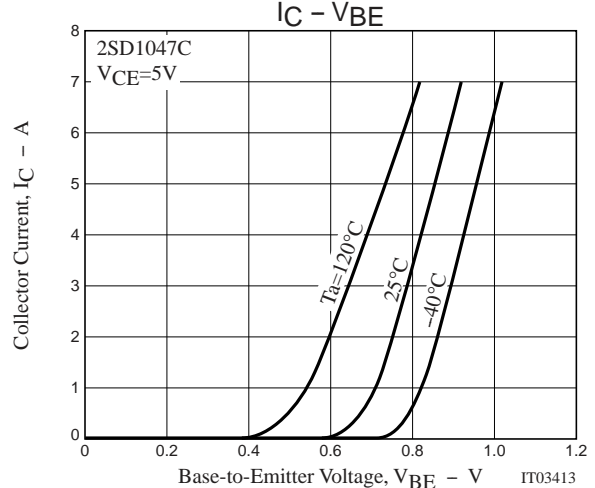
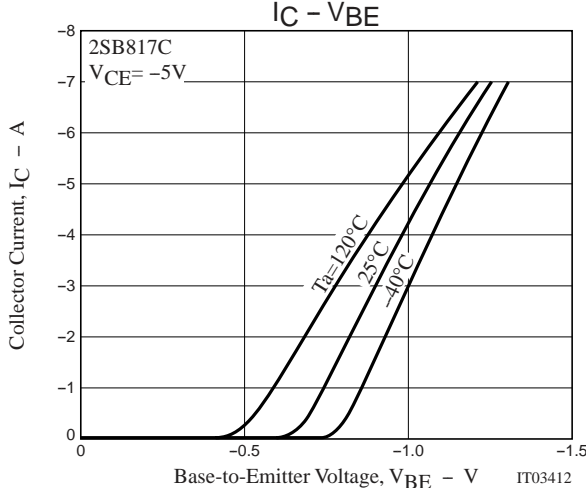
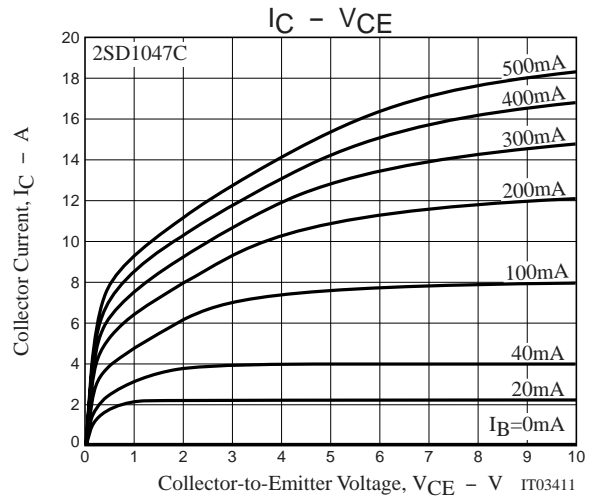
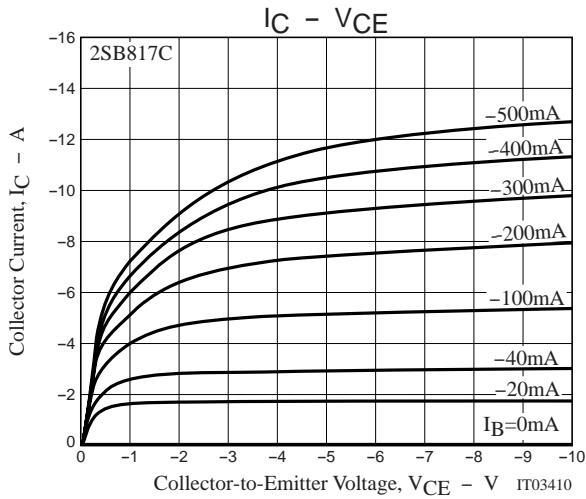
unit : mm  
7503-003



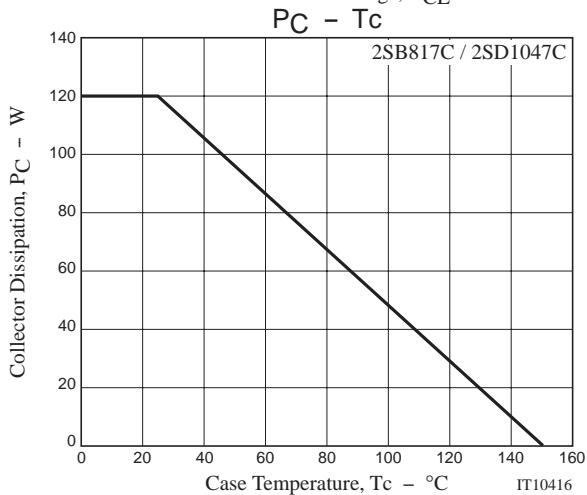
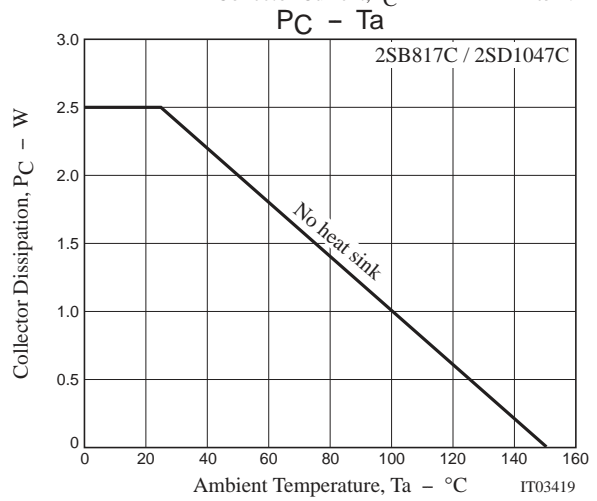
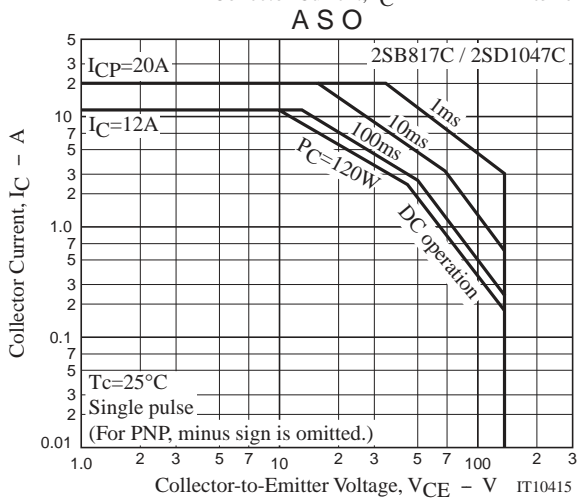
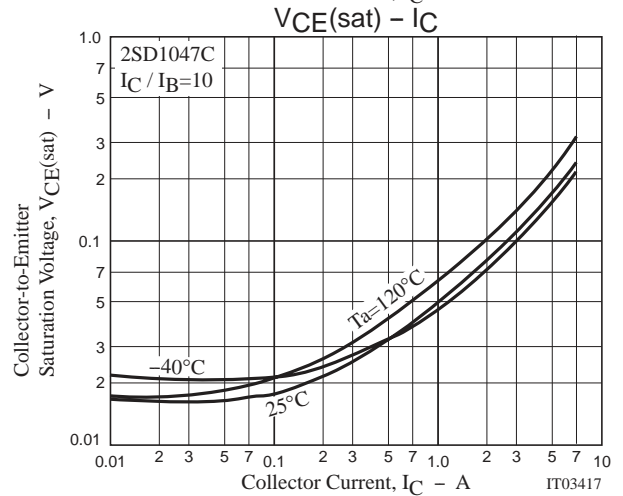
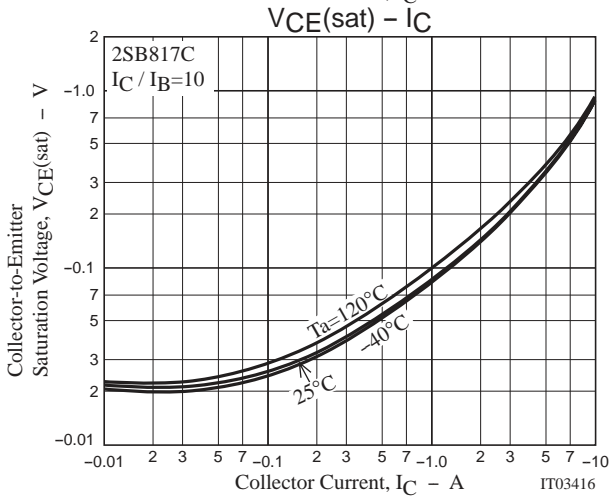
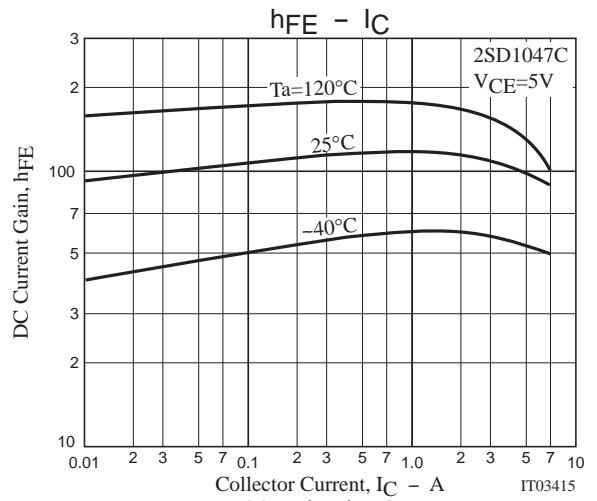
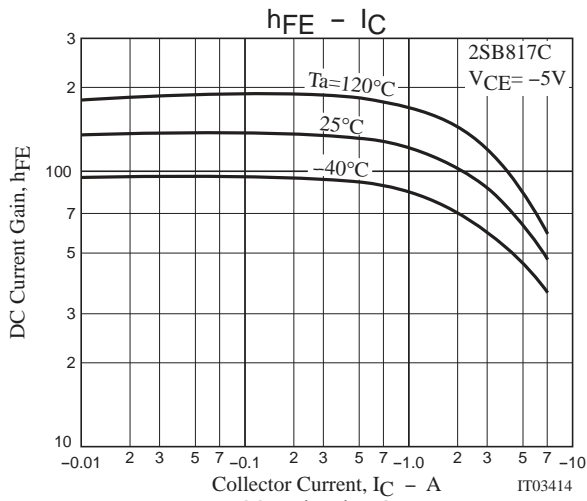
## Switching Time Test Circuit



$I_C = 10I_{B1} = -10I_{B2} = 5A$   
For PNP, the polarity is reversed.



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