



# 2SB817C/2SD1047C

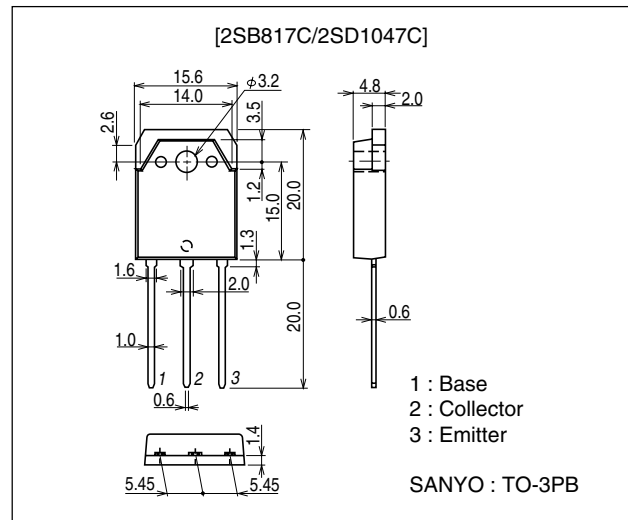
## 140V / 12A, AF 80W Output Applications

### Features

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

### Package Dimensions

unit : mm  
2022A



### Specifications

( ) : 2SB817C

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

Parameter	Symbol	Conditions	Rated Values	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	Rated Values			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =(-)160V, I <sub>E</sub> =0			(-)0.1	mA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(-)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			

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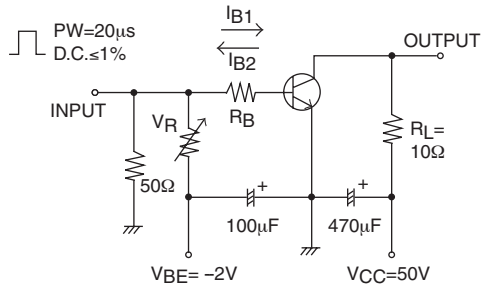
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)5V, I_C=(-)1A$		(10)15		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10V, f=1MHz$		(280)140		pF
Base-to-Emitter Voltage	$V_{BE}$	$V_{CE}=(-)5A, I_C=(-)5A$			1.5	V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)5A, I_B=(-)0.5A$		(- 0.3)0.2	(-)2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)5mA, I_E=0$	(-)160			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)50mA, R_{BE}=\infty$	(-)140			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)5mA, I_C=0$	(-)6			V
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		$\mu s$

### Switching Time Test Circuit



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

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