

2SB817/2SD1047

2SB817 : PNP Epitaxial Planar Silicon Transistor
2SD1047 : NPN Triple Diffused Planar Silicon Transistor

140V/12A, AF 60W Output Applications

Features

- Capable of being mounted easily because of one-point fixing type plastic molded package (Interchangeable with TO-3).
- Wide ASO because of on-chip ballast resistance.
- Good dependence of f_T on current and excellent high frequency response.

The descriptions in parentheses are for the 2SB817 only ; other descriptions than those in parentheses are common to the 2SB 817 and 2SD1047.

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

			unit
Collector-to-Base Voltage	V_{CB0}	(-)160	V
Collector-to-Emitter Voltage	V_{CEO}	(-)140	V
Emitter-to-Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)12	A
Collector Current (Pulse)	I_{CP}	(-)15	A
Collector Dissipation	P_C	100	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to +150	$^\circ\text{C}$

$T_c = 25^\circ\text{C}$

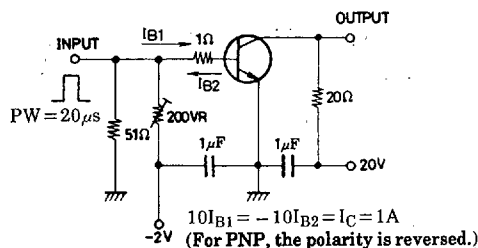
Electrical Characteristics at $T_a = 25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)80\text{V}, I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)0.1	mA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = (-)5\text{V}, I_C = (-)1\text{A}$	60		200	
	$h_{FE}(2)$	$V_{CE} = (-)5\text{V}, I_C = (-)6\text{A}$	20			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)5\text{V}, I_C = (-)1\text{A}$		15		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(300)210		pF
Base-to-Emitter Voltage	V_{BE}	$V_{CE} = (-)5\text{V}, I_C = (-)1\text{A}$			1.5	V
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)5\text{A}, I_B = (-)0.5\text{A}$		(1.1)0.6	2.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)5\text{mA}, I_E = 0$	(-)160			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)5\text{mA}, R_{BE} = \infty$	(-)140			V
		$I_C = (-)50\text{mA}, R_{BE} = \infty$	(-)140			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)5\text{mA}, I_C = 0$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.	(0.25)0.26			μs
Fall Time	t_f	"	(0.53)0.68			μs
Storage Time	t_{stg}	"	(1.61)6.88			μs

※ : The 2SB817/2SD1047 are classified by 1A h_{FE} as follows.

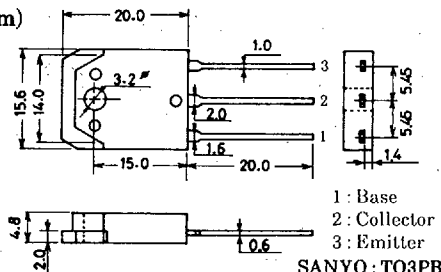
60	D	120	100	E	200
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Switching Time Test Circuit



Package Dimensions 2022A

(unit : mm)



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