

## PNP SILICON TRANSISTORS 2SB1116, 2SB1116A

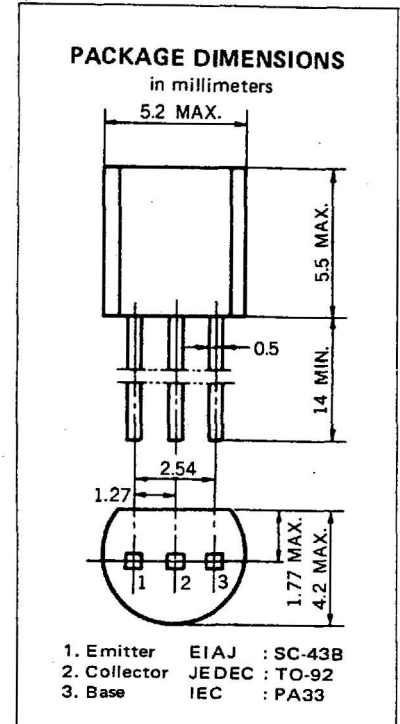
**DESCRIPTION** The 2SB1116/2SB1116A are designed for use in driver and output stages of AF amplifier, general purpose application.

- FEATURES**
- Low Collector Saturation Voltage.  
 $V_{CE(sat)} = -0.20$  V TYP. ( $I_C = -1.0$  A,  $I_B = -50$  mA)
  - High Break Down Voltage.  
 $V_{CEO} = -50$  V/ $-60$  V (2SB1116/2SB1116A)
  - High Total Power Dissipation. :  $P_T = 0.75$  W ( $T_a = 25^\circ$  C)
  - Complementary to the NEC 2SD1616/2SD1616A NPN Transistor.

### ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures	
Storage Temperature .....	$-55$ to $+150^\circ$ C
Junction Temperature .....	$150^\circ$ C Maximum
Maximum Power Dissipation ( $T_a = 25^\circ$ C)	
Total Power Dissipation .....	$0.75$ W
Maximum Voltages and Currents ( $T_a = 25^\circ$ C)      2SB1116/2SB1116A	
$V_{CBO}$ Collector to Base Voltage .....	$-60$ V/ $-80$ V
$V_{CEO}$ Collector to Emitter Voltage .....	$-50$ V/ $-60$ V
$V_{EBO}$ Emitter to Base Voltage .....	$-6.0$ V
$I_C$ Collector Current (DC) .....	$-1.0$ A
$I_C$ Collector Current (pulse)* .....	$-2.0$ A

\*PW  $\leq$  10 ms, Duty Cycle  $\leq$  50 %



### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ$ C)

2SB1116/2SB1116A

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE1}^{**}$	DC Current Gain	135		600	—	$V_{CE} = -2.0$ V, $I_C = -100$ mA
$h_{FE2}^{**}$	DC Current Gain	81			—	$V_{CE} = -2.0$ V, $I_C = -1.0$ A
$f_T$	Gain Bandwidth Product	70	120		MHz	$V_{CE} = -2.0$ V, $I_C = -100$ mA
$C_{ob}$	Output Capacitance		25		pF	$V_{CB} = -10$ V, $I_E = 0$ , $f = 1.0$ MHz
$I_{CBO}$	Collector Cutoff Current			$-100$	nA	$V_{CB} = -60$ V/ $-80$ V, $I_E = 0$
$I_{EBO}$	Emitter Cutoff Current			$-100$	nA	$V_{EB} = -6.0$ V, $I_C = 0$
$V_{BE}^{**}$	Base to Emitter Voltage	$-600$		$-700$	mV	$V_{CE} = -2.0$ V, $I_C = -50$ mA
$V_{CE(sat)}^{**}$	Collector Saturation Voltage		$-0.2$	$-0.3$	V	$I_C = -1.0$ A, $I_B = -50$ mA
$V_{BE(sat)}^{**}$	Base Saturation Voltage		$-0.9$	$-1.2$	V	$I_C = -1.0$ A, $I_B = -50$ mA
$t_{on}$	Turn-On Time		0.07		$\mu$ s	$V_{CC} = -10$ V, $I_C = -100$ mA $I_{B1} = -I_{B2} = -10$ mA $V_{BE(off)} = 2$ to $3$ V
$t_{stg}$	Storage Time		0.70		$\mu$ s	
$t_f$	Fall Time		0.07		$\mu$ s	

\*\*Pulsed PW  $\leq$  350  $\mu$ s, Duty Cycle  $\leq$  2 %

### Classification of $h_{FE1}$

Rank	L	K	U
Range	135 to 270	200 to 400	300 to 600

Test Conditions:  $V_{CE} = -2.0$  V,  $I_C = -100$  mA

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

