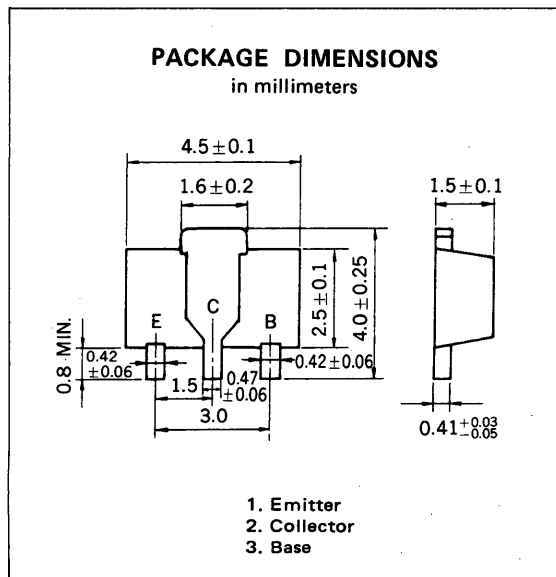


**SILICON TRANSISTORS**  
**2SB1115, 2SB1115A**

**PNP SILICON EPITAXIAL TRANSISTOR**  
**POWER MINI MOLD**

**DESCRIPTION**

2SB1115, 2SB1115A are designed for audio frequency power amplifier and switching application, especially in Hybrid Integrated Circuits.



**FEATURES**

- World Standard Miniature Package
- Low  $V_{CE(sat)} \cdot V_{CE(sat)} = -0.2$  V at 1 A
- Complement to 2SD1615, 2SD1615A

**ABSOLUTE MAXIMUM RATINGS**

Maximum Voltages and Currents ( $T_a = 25^\circ\text{C}$ )

		2SB1115	2SB1115A	
Collector to Base Voltage	$V_{CBO}$	-60	-80	V
Collector to Emitter Voltage	$V_{CEO}$	-50	-60	V
Emitter to Base Voltage	$V_{EBO}$		-6	V
Collector Current (DC)	$I_C$		-1	A
Collector Current (Pulse)*	$I_C$		-2	A
Maximum Power Dissipation				
Total Power Dissipation at 25 °C Ambient Temperature**	$P_T$		2.0	W
Maximum Temperatures				
Junction Temperature	$T_j$		150	°C
Storage Temperature Range	$T_{stg}$		-55 to +150	°C

\*PW ≤ 10 ms, Duty Cycle ≤ 50 %

\*\*When mounted on ceramic substrate of 16 cm<sup>2</sup> x 0.7 mm

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

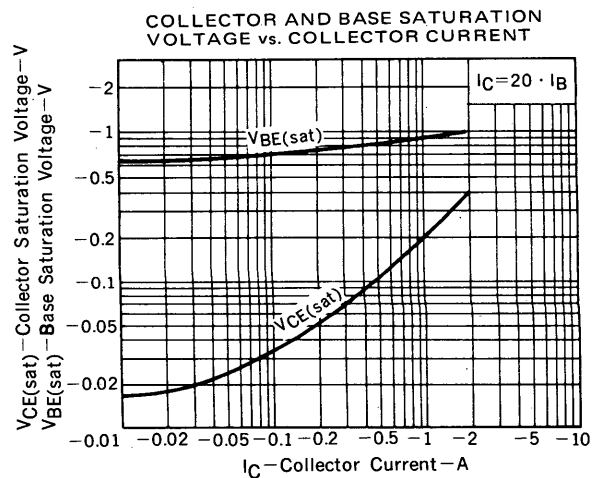
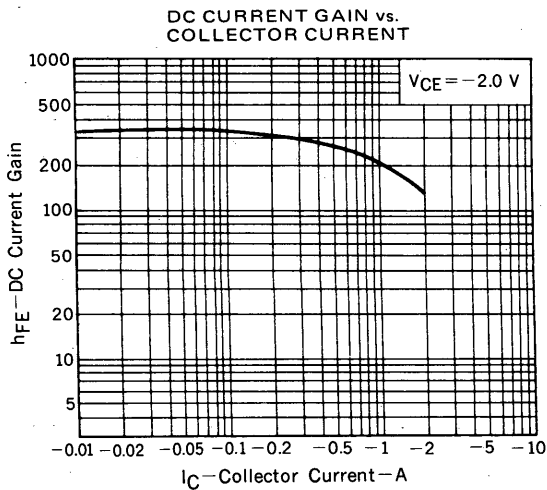
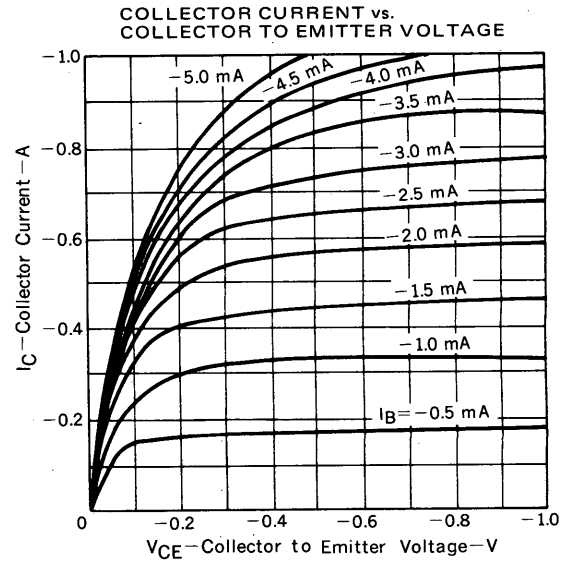
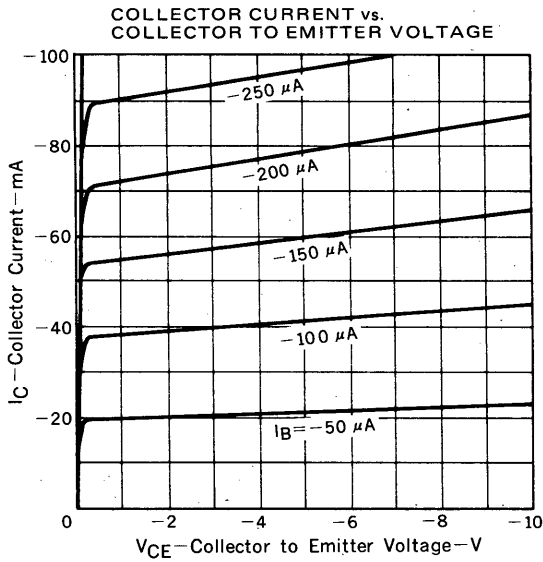
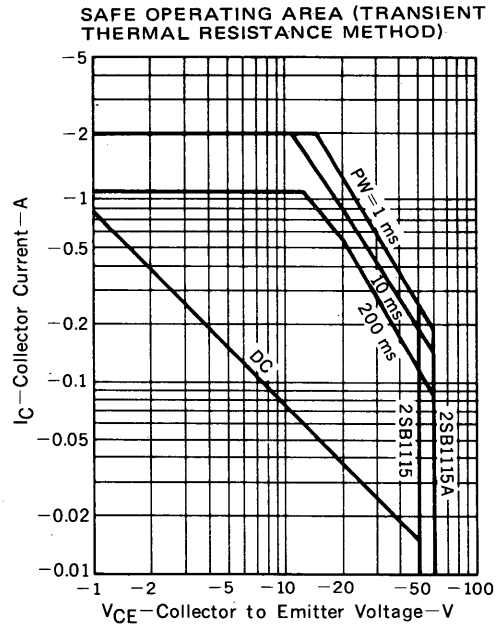
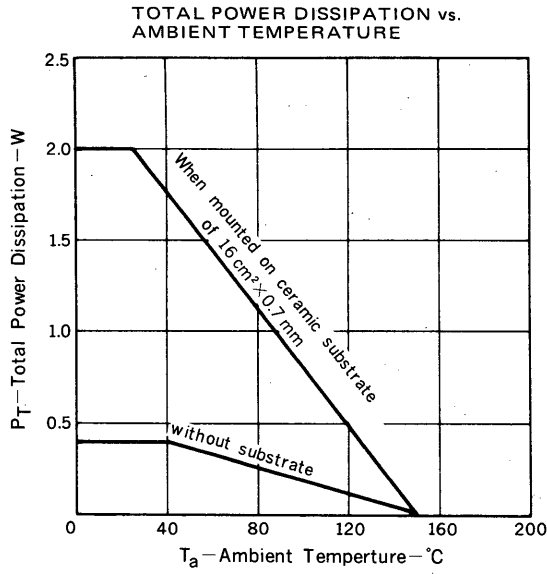
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS	
Collector Cutoff Current	$I_{CBO}$			-100	nA	2SB1115	$V_{CB} = -60$ V, $I_E = 0$
				-100	nA	2SB1115A	$V_{CB} = -80$ V, $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB} = -6.0$ V, $I_C = 0$	
DC Current Gain	$h_{FE1}$ ***	135	340	600		2SB1115	$V_{CE} = -2.0$ V, $I_C = -100$ mA
		135	340	400		2SB1115A	
DC Current Gain	$h_{FE2}$ ***	100	200			$V_{CE} = -2.0$ V, $I_C = -1.0$ A	
Collector Saturation Voltage	$V_{CE(sat)}$ ***		-0.2	-0.3	V	$I_C = -1.0$ A, $I_B = -50$ mA	
Base Saturation Voltage	$V_{BE(sat)}$ ***		-0.9	-1.2	V	$I_C = -1.0$ A, $I_B = -50$ mA	
Base to Emitter Voltage	$V_{BE}$ ***	-600		-700	mV	$V_{CE} = -2.0$ V, $I_C = -50$ mA	
Gain Bandwidth Product	$f_T$	80	120		MHz	$V_{CE} = -2.0$ V, $I_E = -100$ mA	
Output Capacitance	$C_{ob}$		25		pF	$V_{CB} = -10$ V, $I_E = 0$ , $f = 1.0$ MHz	

\*\*\*Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2 %

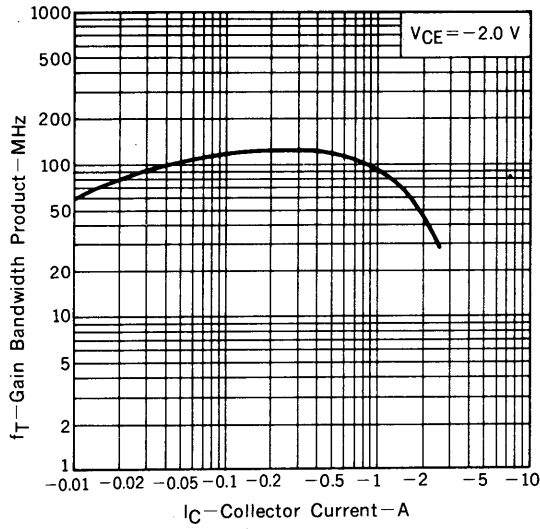
**$h_{FE}$  Classification**

MARKING	2SB1115	YM	YL	YK
	2SB1115A	YQ	YP	
$h_{FE}$		135 to 270	200 to 400	300 to 600

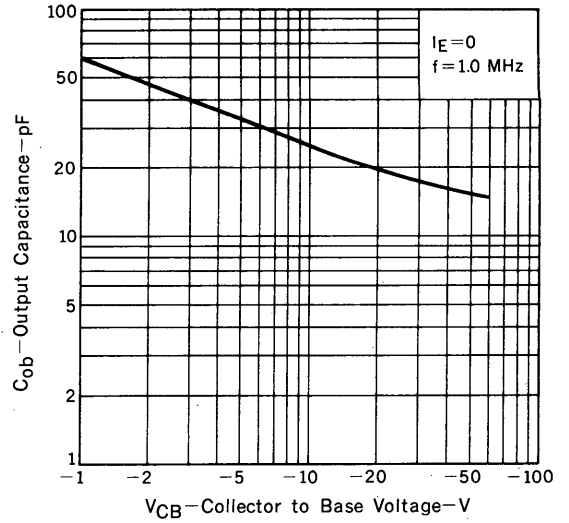
TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )



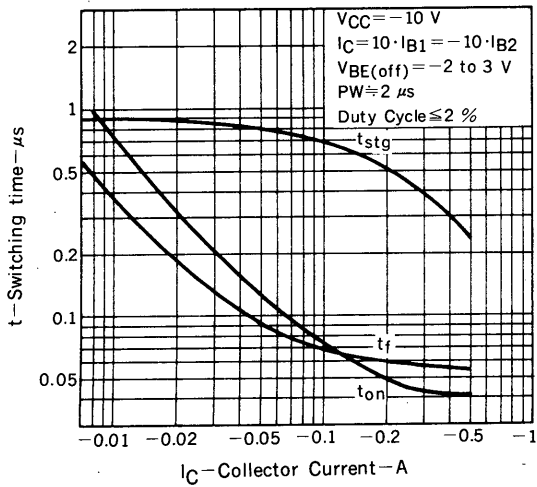
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



SWITCHING TIME vs. COLLECTOR CURRENT



REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system.	TEI-1202
Quality grade on NEC semiconductor devices.	IEI-1209
Semiconductor device mounting technology manual.	IEI-1207
Semiconductor device package manual.	IEI-1213
Guide to quality assurance for semiconductor devices.	MEI-1202
Semiconductor selection guide.	MF-1134

[MEMO]

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