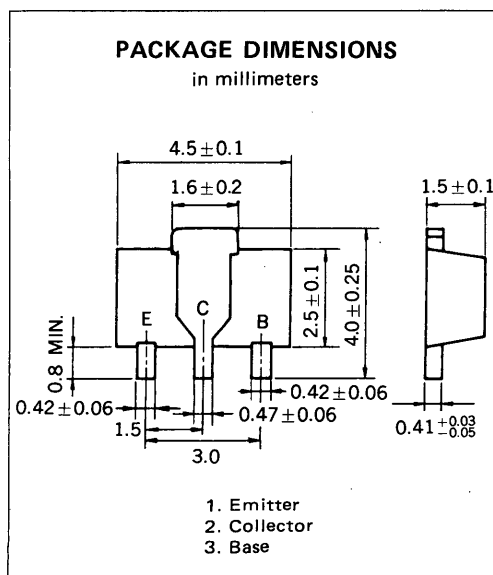


### NPN SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD

#### DESCRIPTION

2SC3617 is designed for audio frequency power amplifier and switching application, especially in Hybrid Integrated Circuits.



#### FEATURES

- World Standard Miniature Package
- High  $h_{FE}$   $h_{FE} = 800$  to  $1600$

#### ABSOLUTE MAXIMUM RATINGS

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

Collector to Base Voltage	$V_{CBO}$	50	V
Collector to Emitter Voltage	$V_{CEO}$	50	V
Emitter to Base Voltage	$V_{EBO}$	15	V
Collector Current (DC)	$I_C$	300	mA
Collector Current (Pulse)*	$I_C$	500	mA

Maximum Power Dissipation

Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature**	$P_T$	2.0	W
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Maximum Temperatures

Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

\*\*When mounted on ceramic substrate of  $16\text{ cm}^2 \times 0.7\text{ mm}$

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

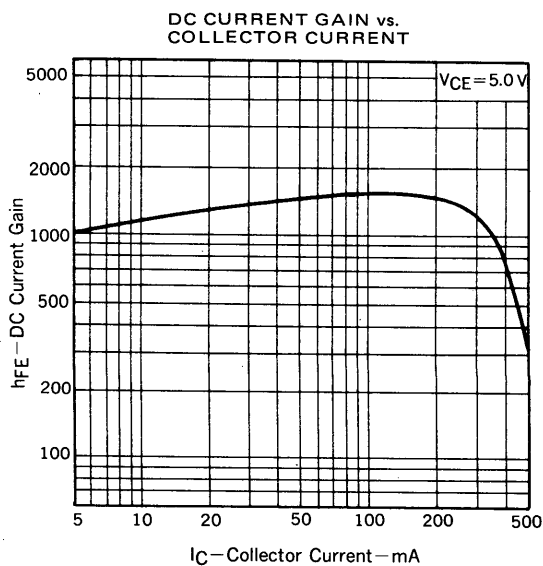
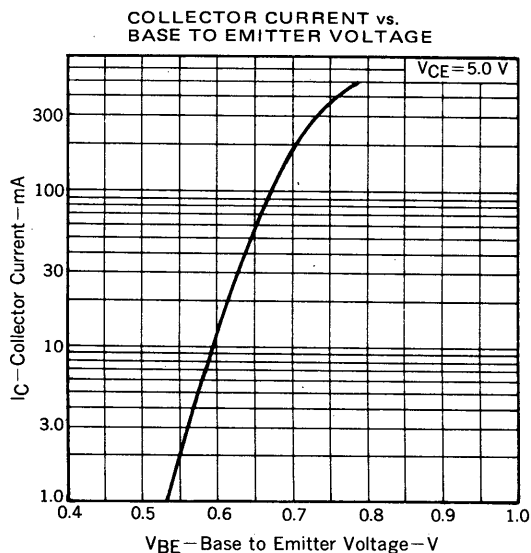
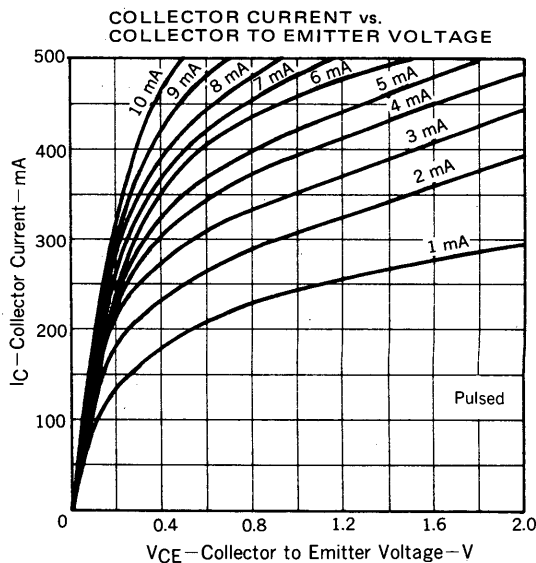
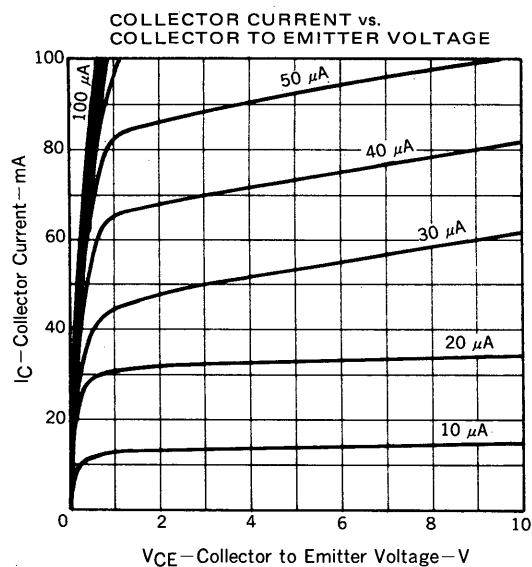
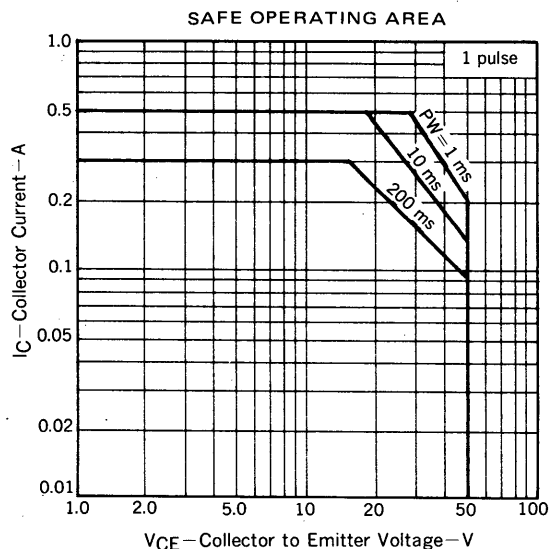
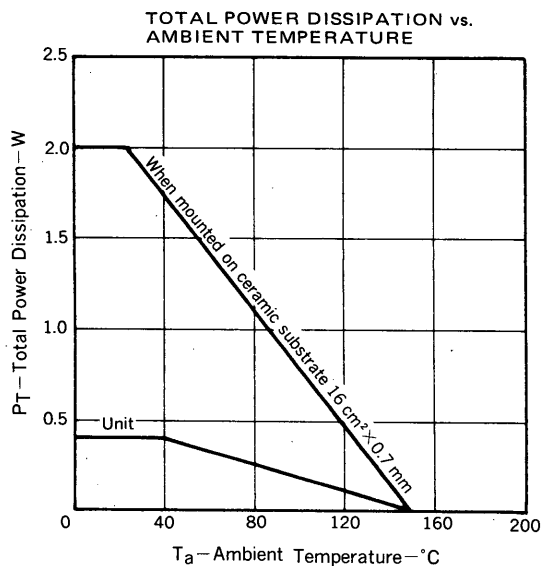
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			100	nA	$V_{CB} = 50\text{ V}, I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			100	nA	$V_{EB} = 10\text{ V}, I_C = 0$
DC Current Gain	$h_{FE1}^{***}$	800		3200		$V_{CE} = 5.0\text{ V}, I_C = 100\text{ mA}$
DC Current Gain	$h_{FE2}^{***}$	640				$V_{CE} = 5.0\text{ V}, I_C = 300\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^{***}$		0.12	0.13	V	$I_C = 100\text{ mA}, I_B = 1.0\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^{***}$		0.7	1.2	V	$I_C = 100\text{ mA}, I_B = 1.0\text{ mA}$
Gain Bandwidth Product	$f_T$	150	220		MHz	$V_{CE} = 5.0\text{ V}, I_E = -50\text{ mA}$
Output Capacitance	$C_{ob}$		8.0		pF	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$

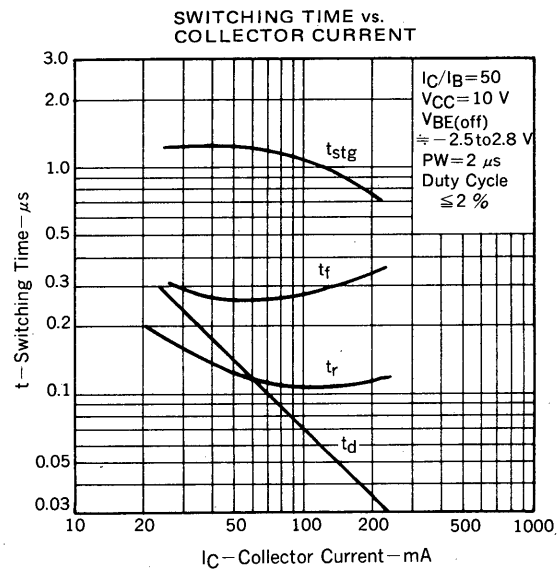
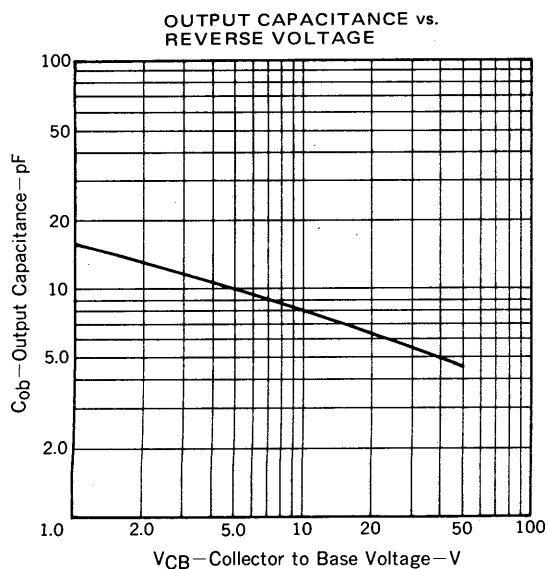
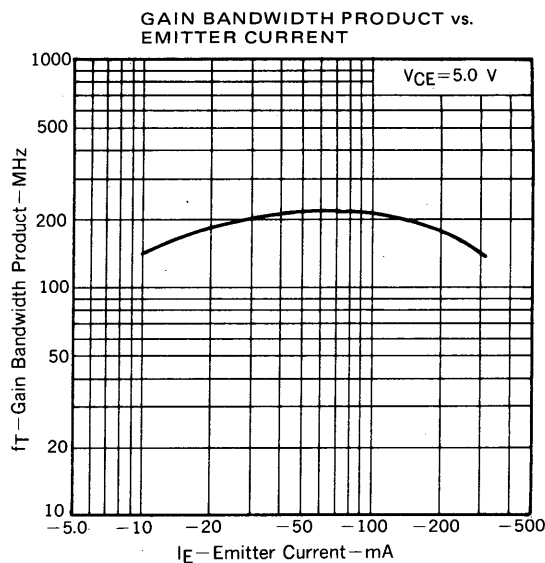
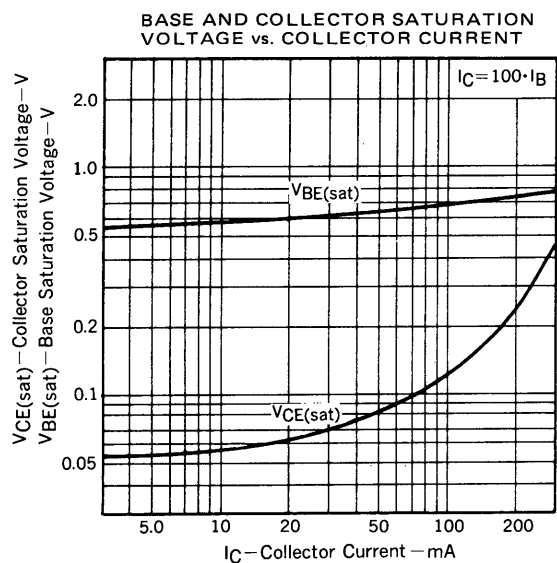
\*\*\*Pulsed:  $PW \leq 350\text{ }\mu\text{s}$ , Duty Cycle  $\leq 2\%$

#### $h_{FE}$ Classification

MARKING	TM	TL	TK
$h_{FE}$	800 to 1600	1200 to 2400	2000 to 3200

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





# 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

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