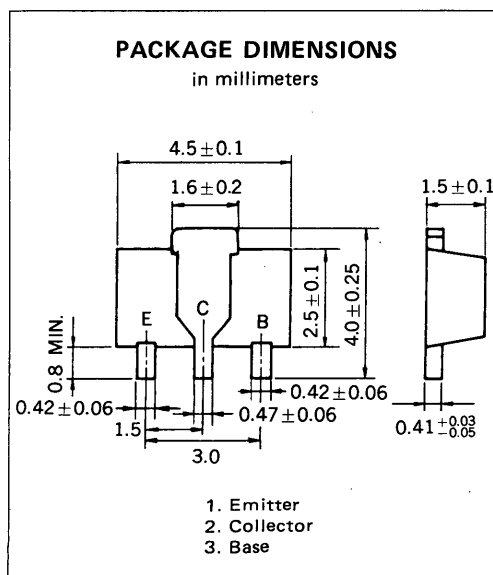


NPN SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD

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°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 ($T_a = 25^\circ\text{C}$)

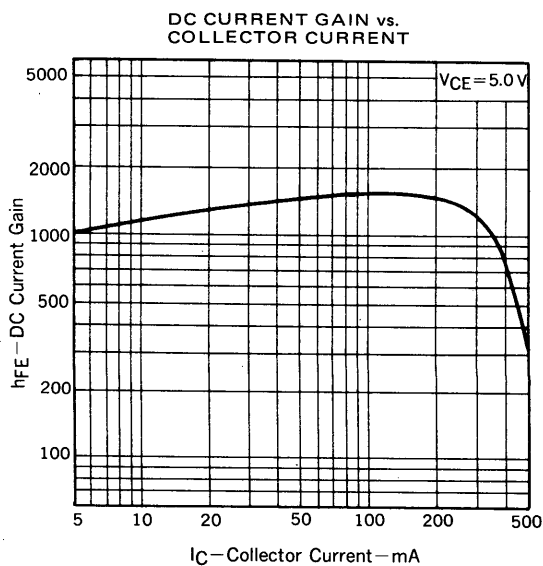
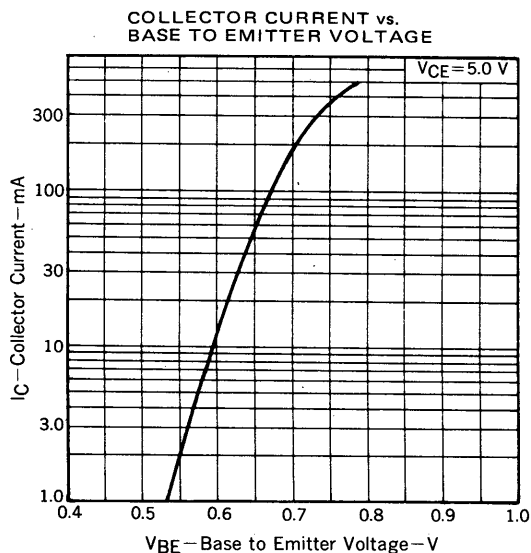
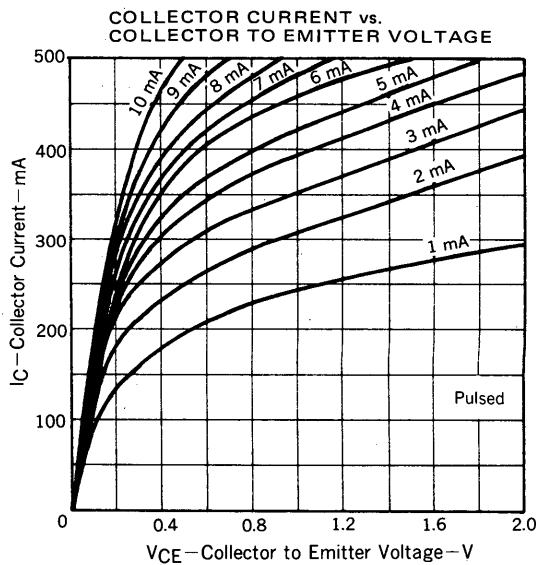
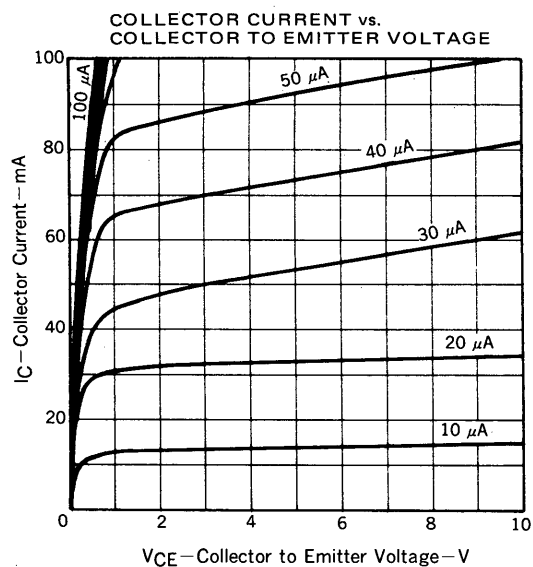
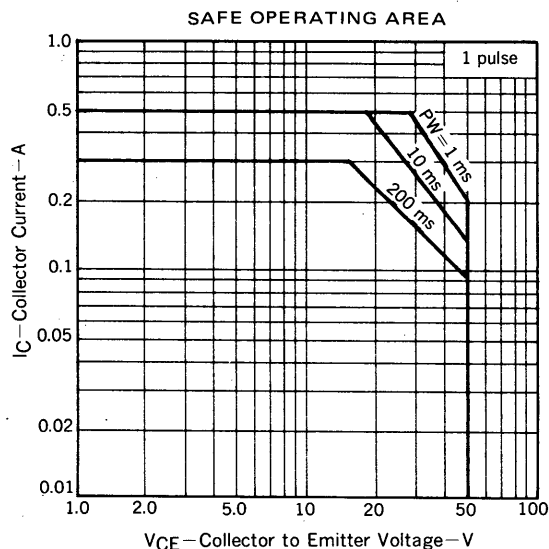
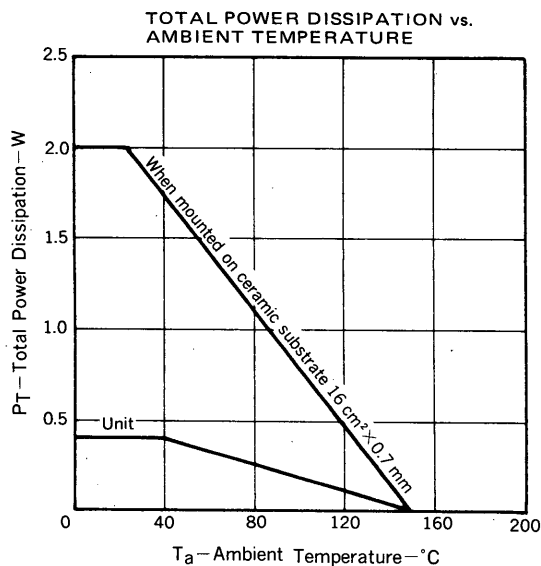
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CB} = 50\text{ V}, I_E = 0$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB} = 10\text{ V}, I_C = 0$
DC Current Gain	h_{FE1}^{***}	800		3200		$V_{CE} = 5.0\text{ V}, I_C = 100\text{ mA}$
DC Current 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	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$

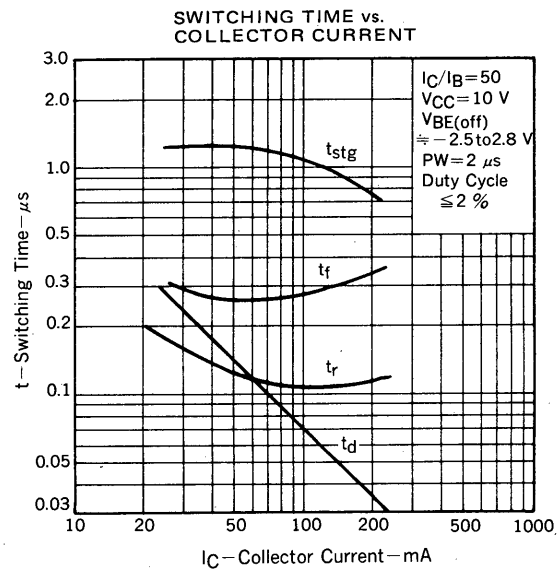
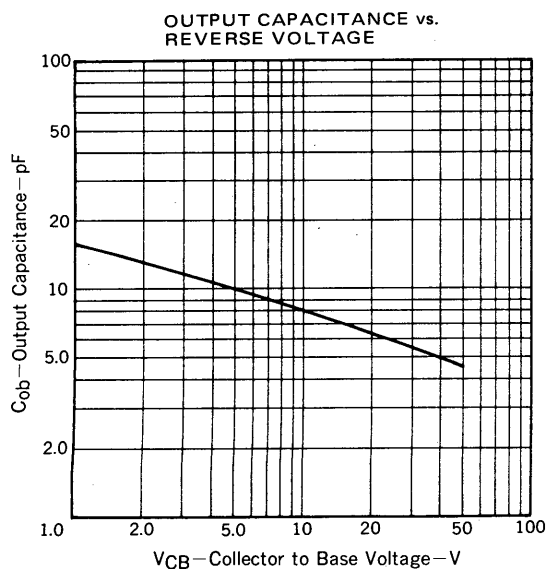
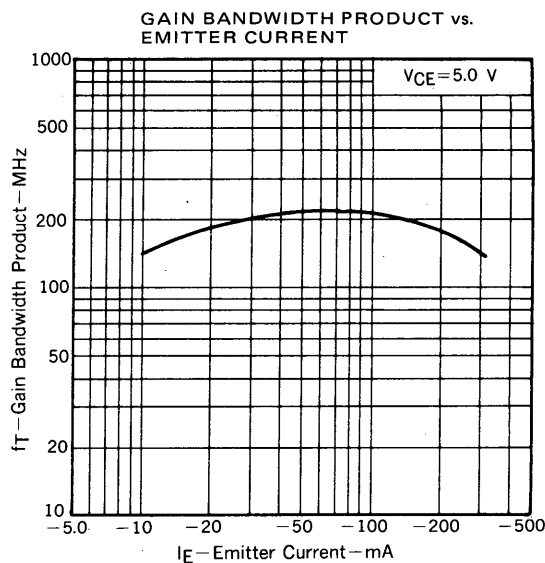
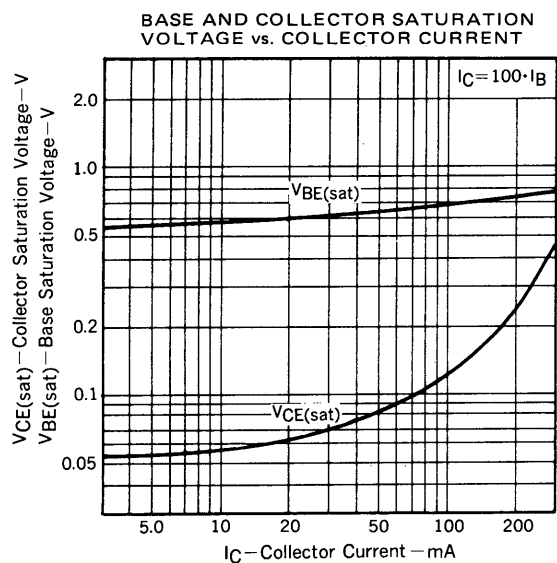
***Pulsed: $PW \leq 350\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$

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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Special: Automotive and Transportation equipment, Traffic control systems, Antidisaster systems, Anticrime systems, etc.