DATA SHEET

NEC

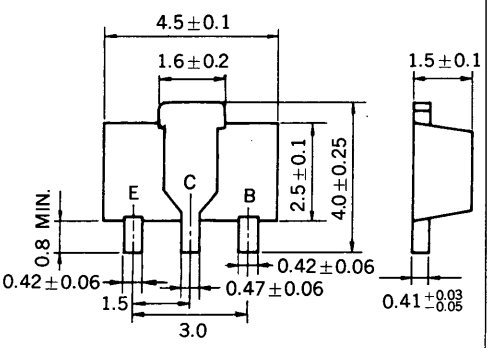
SILICON TRANSISTOR
2SC3617

NPN SILICON EPITAXIAL TRANSISTOR
POWER MINI MOLD

DESCRIPTION

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

PACKAGE DIMENSIONS
in millimeters



1. Emitter
2. Collector
3. Base

FEATURES

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

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (T_a = 25 °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
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 cm² x 0.7 mm

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

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

***Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

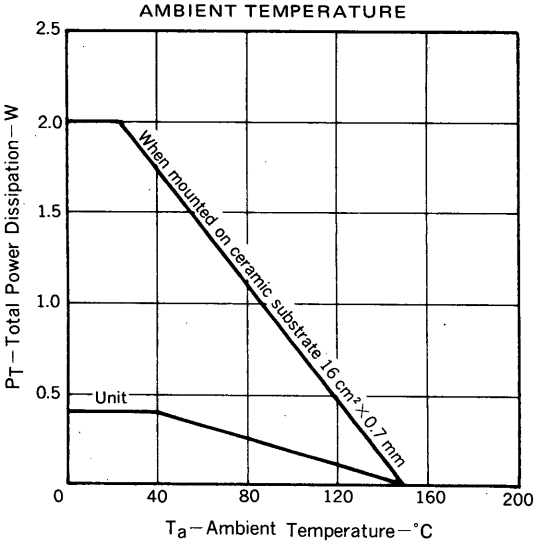
h_{FE} Classification

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

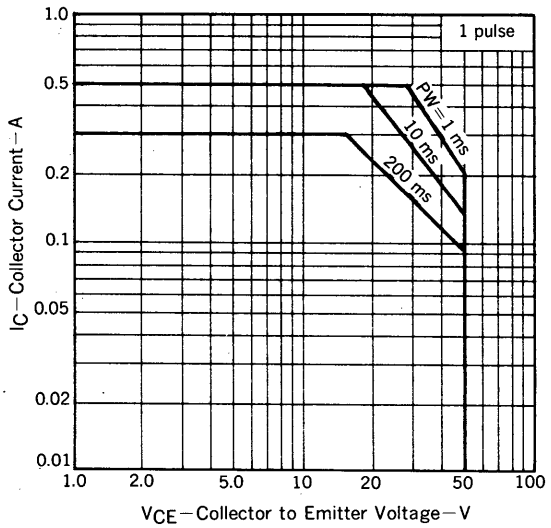
Document No. TC−1640A
(O.D.No. TC−5847A)
Date Published November 1994 M
Printed in Japan

TYPICAL CHARACTERISTICS (T_a= 25 °C)

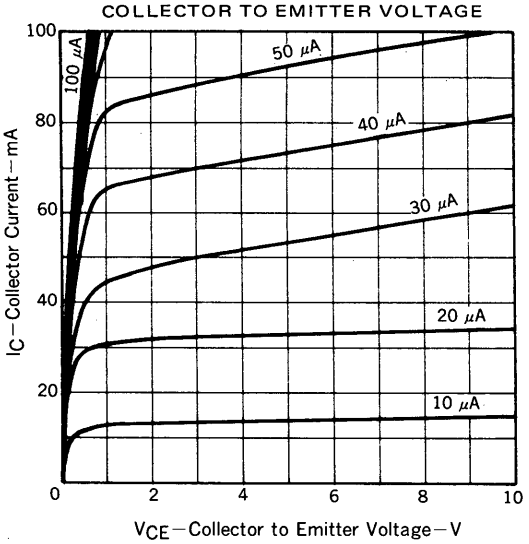
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



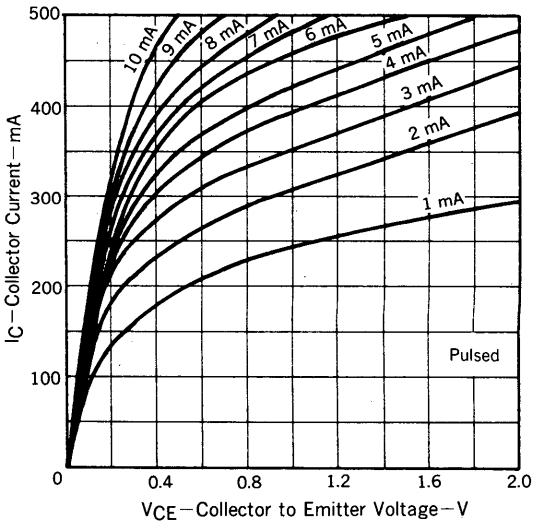
SAFE OPERATING AREA



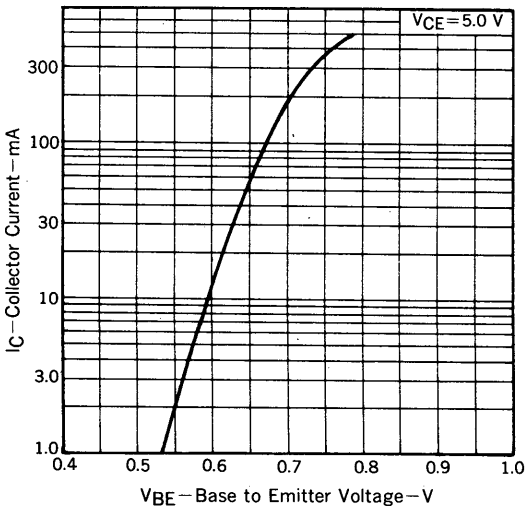
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



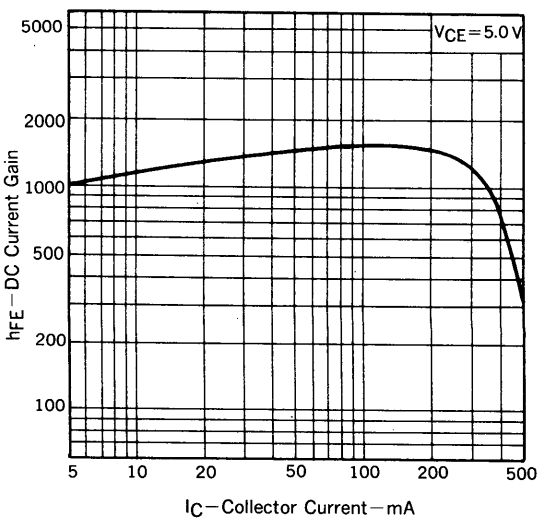
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



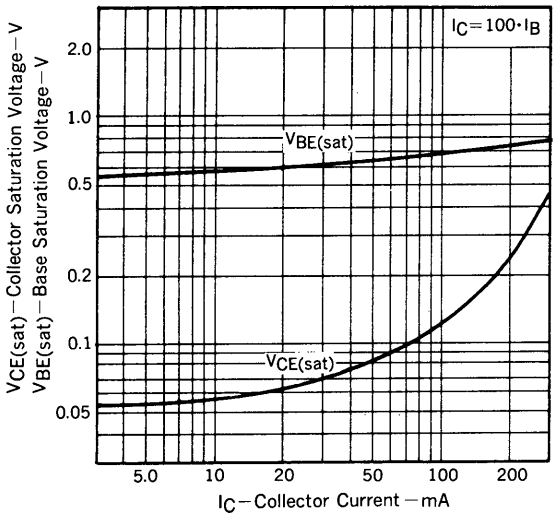
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



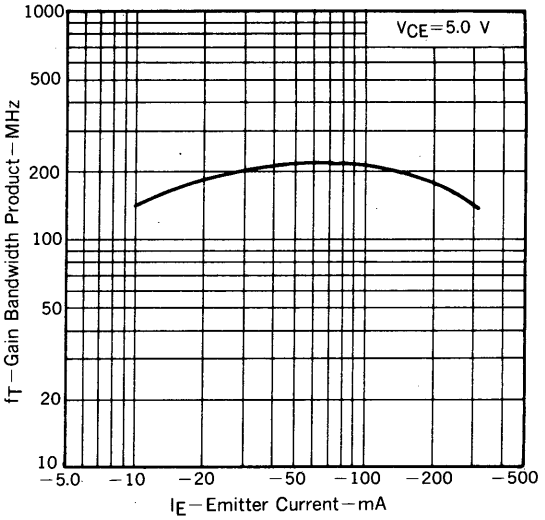
DC CURRENT GAIN vs. COLLECTOR CURRENT



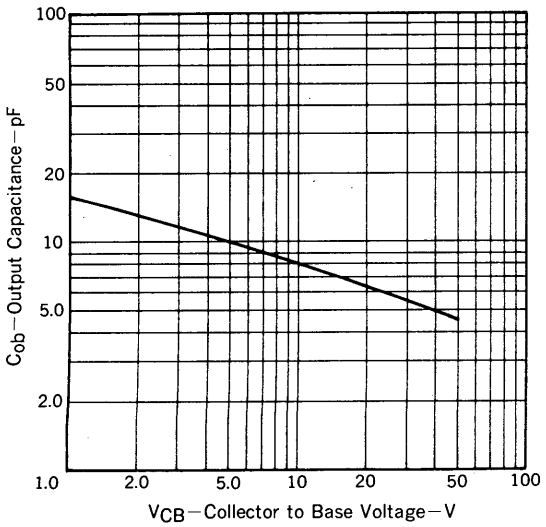
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



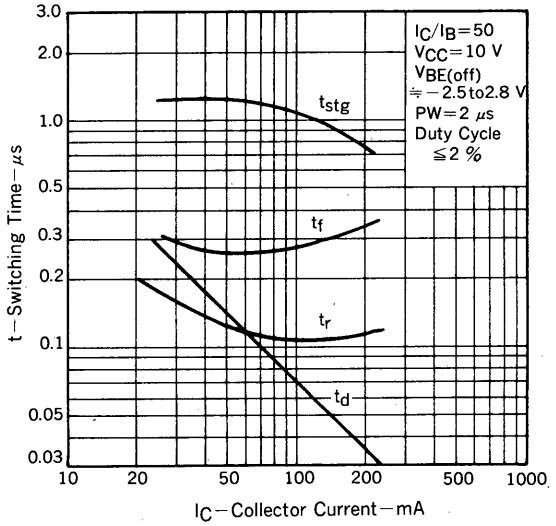
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. REVERSE 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]

M4 92.6