2SC2776

Silicon NPN Epitaxial Planar

HITACHI

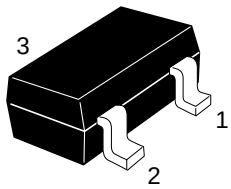
ADE-208-1077 (Z)
1st. Edition
Mar. 2001

Application

- VHF amplifier
- Mixer, Local oscillator

Outline

MPAK



1. Emitter
2. Base
3. Collector

Hitachi semiconductor

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	20	V
Emitter to base voltage	V_{EBO}	4	V
Collector current	I_C	30	mA
Collector power dissipation	P_C	100	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

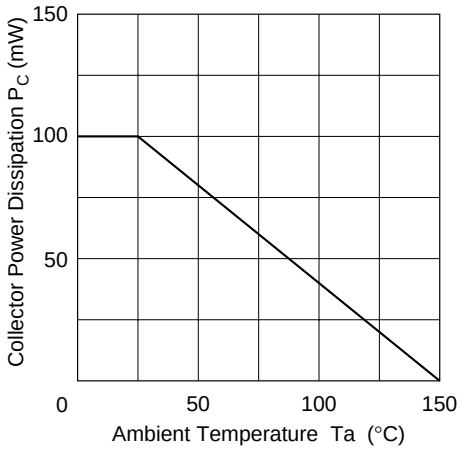
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	4	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.5	µA	V_{CB} = 10 V, I_E = 0
DC current transfer ratio	h_{FE}*[1]	35	—	200		V_{CE} = 6 V, I_C = 1 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.8	1.2	V	I_C = 10 mA, I_B = 1 mA
Collector output capacitance	Cob	—	1.1	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Gain bandwidth product	f_T	—	320	—	MHz	V_{CE} = 6 V, I_C = 1 mA
Noise figure	NF	—	5.5	—	dB	V_{CE} = 6 V, I_C = 1 mA, f = 100 MHz, R_g = 50 Ω
Power gain	PG	—	17	—	dB	V_{CE} = 6 V, I_C = 1 mA, f = 100 MHz, R_g = 100 Ω, R_L = 550 Ω, Unneutralized

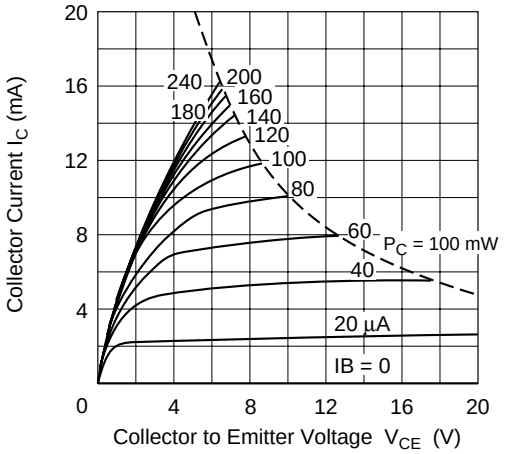
Note: 1. The 2SC2776 is grouped by h_{FE} as follows.

Grade	A	B	C
Mark	VA	VB	VC
h_{FE}	35 to 70	60 to 120	100 to 200

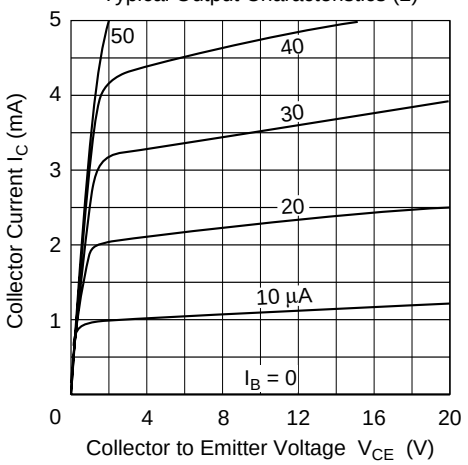
Maximum Collector Dissipation Curve



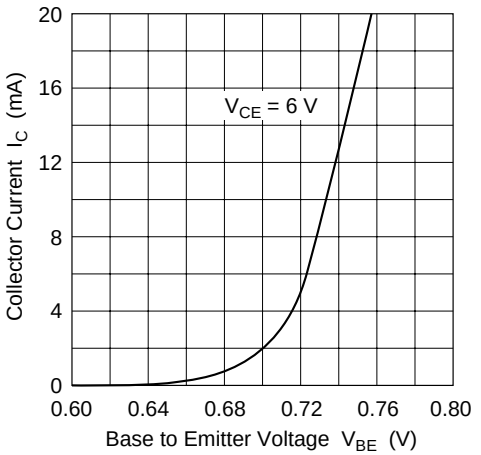
Typical Output Characteristics (1)



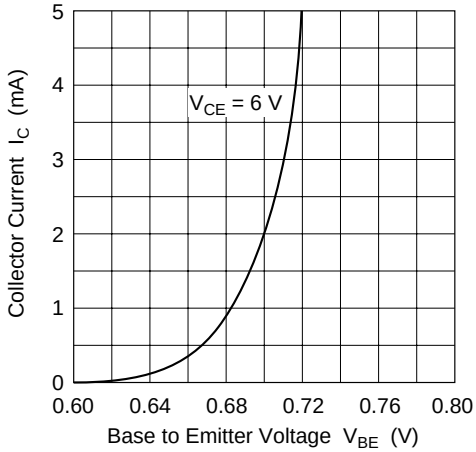
Typical Output Characteristics (2)



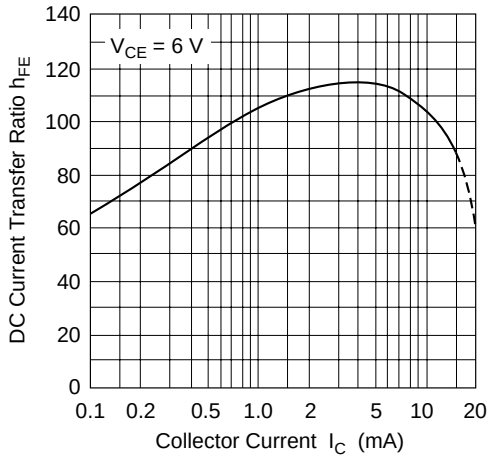
Typical Transfer Characteristics (1)



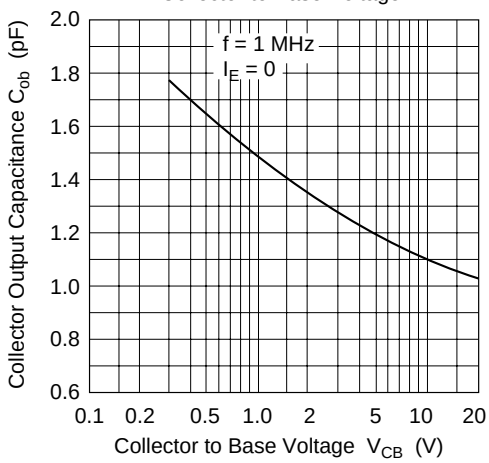
Typical Transfer Characteristics (2)



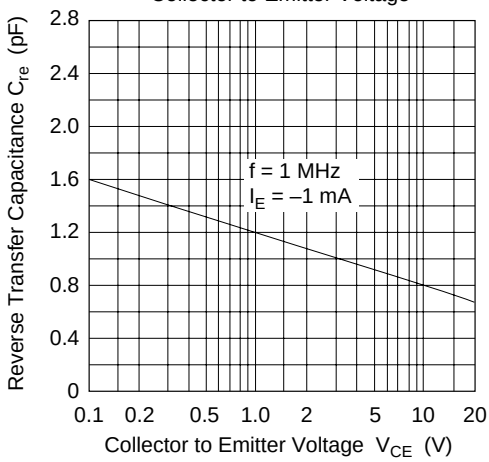
DC Current Transfer Ratio vs. Collector Current



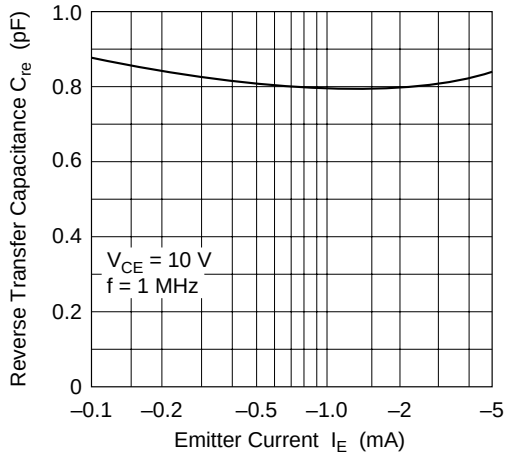
Collector Output Capacitance vs. Collector to Base Voltage



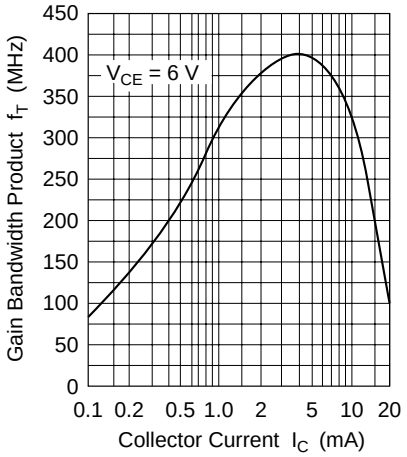
Reverse Transfer Capacitance vs. Collector to Emitter Voltage



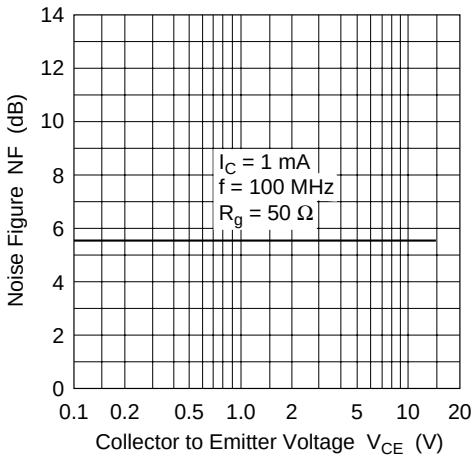
Reverse Transfer Capacitance vs. Emitter Current



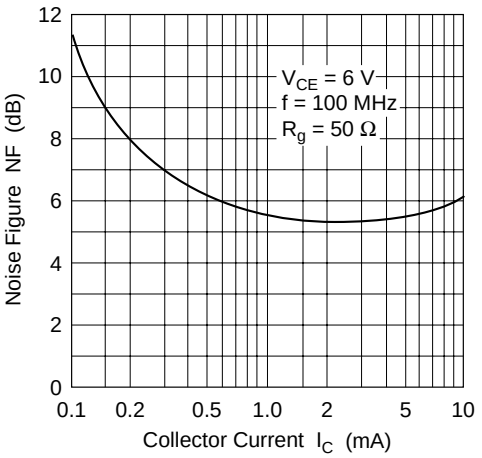
Gain Bandwidth Product vs. Collector Current



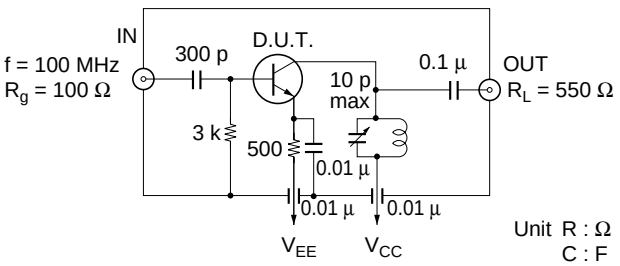
Noise Figure vs. Collector to Emitter Voltage



Noise Figure vs. Collector Current

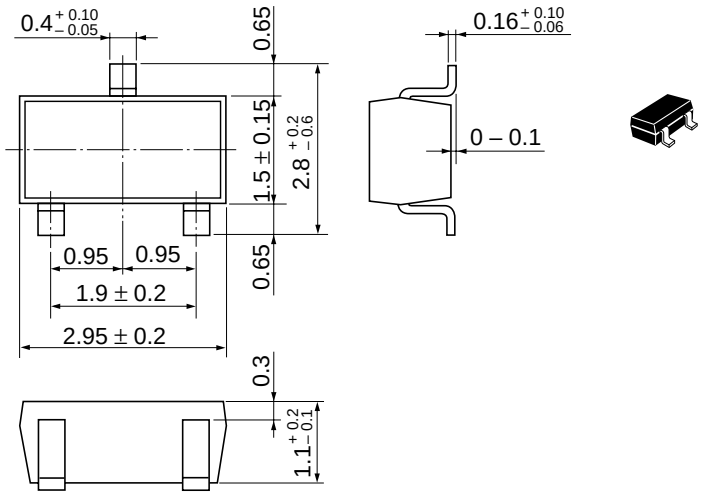


Power Gain Test Circuit



Package Dimensions

As of January, 2001
Unit: mm



Hitachi Code	MPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.011 g

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