
2SC2776

Silicon NPN Epitaxial Planar

HITACHI

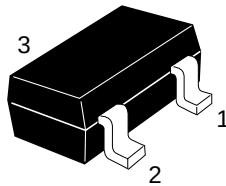
ADE-208-1077 (Z)
1st. Edition
Mar. 2001

Application

- VHF amplifier
- Mixer, Local oscillator

Outline

MPAK



1. Emitter
2. Base
3. Collector

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

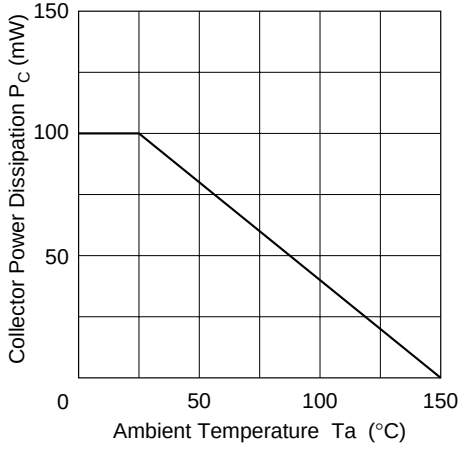
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	30	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$, $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	20	—	—	V	$I_{\text{C}} = 1 \text{ mA}$, $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	4	—	—	V	$I_{\text{E}} = 10 \mu\text{A}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{\text{CB}} = 10 \text{ V}$, $I_{\text{E}} = 0$
DC current transfer ratio	h_{FE}^{*1}	35	—	200		$V_{\text{CE}} = 6 \text{ V}$, $I_{\text{C}} = 1 \text{ mA}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	0.8	1.2	V	$I_{\text{C}} = 10 \text{ mA}$, $I_{\text{B}} = 1 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.1	—	pF	$V_{\text{CB}} = 10 \text{ V}$, $I_{\text{E}} = 0$, $f = 1 \text{ MHz}$
Gain bandwidth product	f_{T}	—	320	—	MHz	$V_{\text{CE}} = 6 \text{ V}$, $I_{\text{C}} = 1 \text{ mA}$
Noise figure	NF	—	5.5	—	dB	$V_{\text{CE}} = 6 \text{ V}$, $I_{\text{C}} = 1 \text{ mA}$, $f = 100 \text{ MHz}$, $R_{\text{g}} = 50 \Omega$
Power gain	PG	—	17	—	dB	$V_{\text{CE}} = 6 \text{ V}$, $I_{\text{C}} = 1 \text{ mA}$, $f = 100 \text{ MHz}$, $R_{\text{g}} = 100 \Omega$, $R_{\text{L}} = 550 \Omega$, Unneutralized

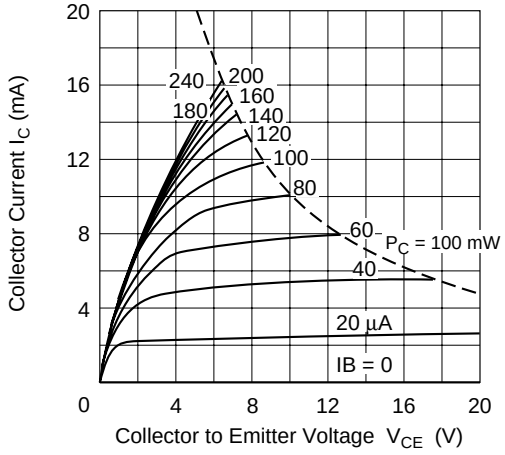
Note: 1. The 2SC2776 is grouped by h_{FE} as follows.

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

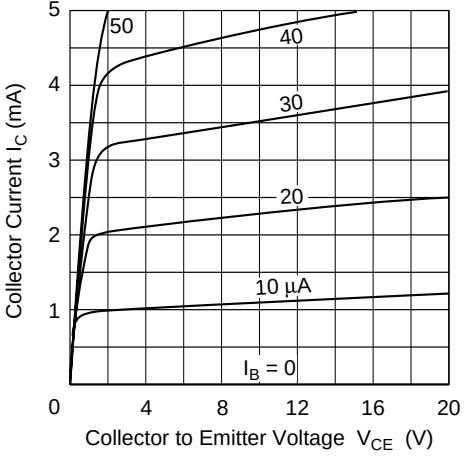
Maximum Collector Dissipation Curve



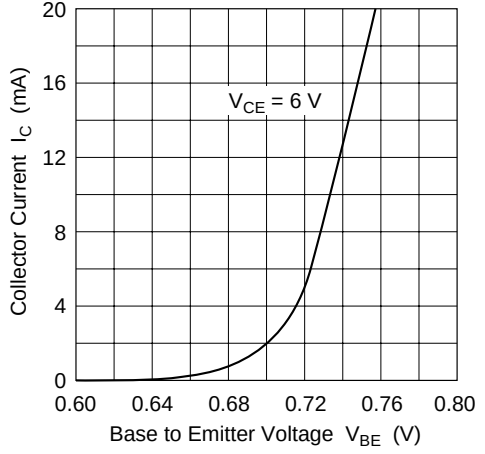
Typical Output Characteristics (1)

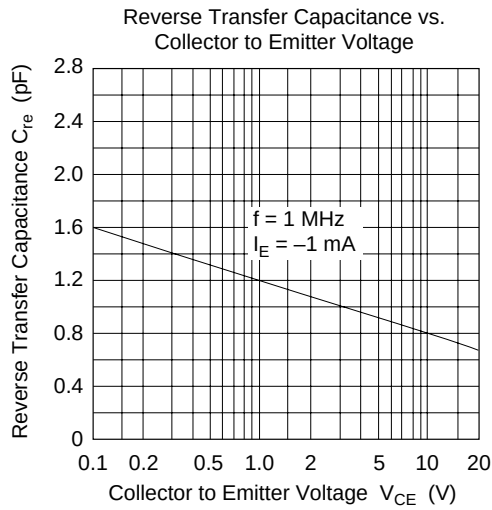
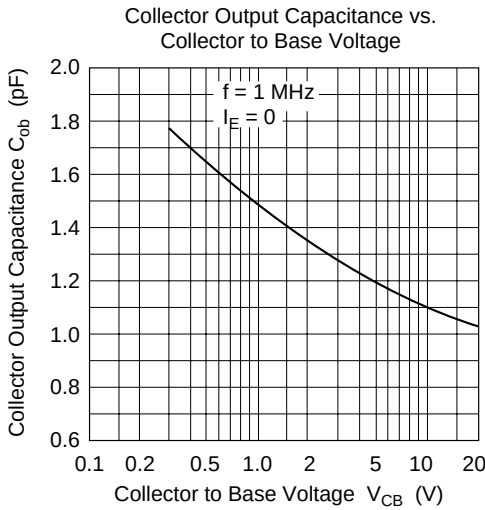
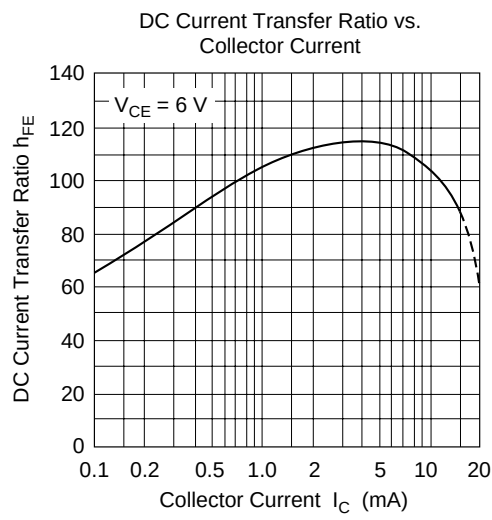
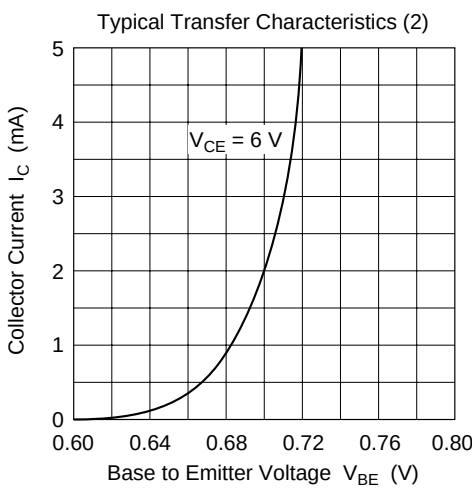


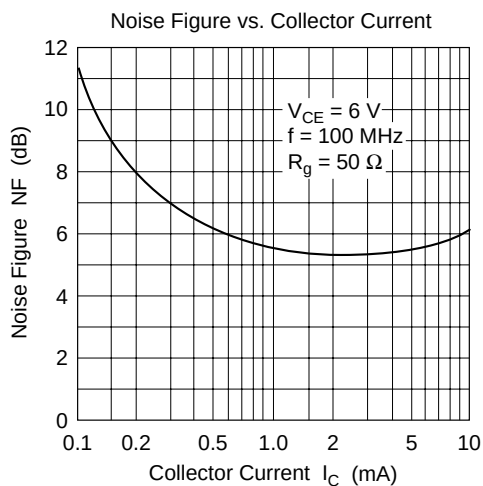
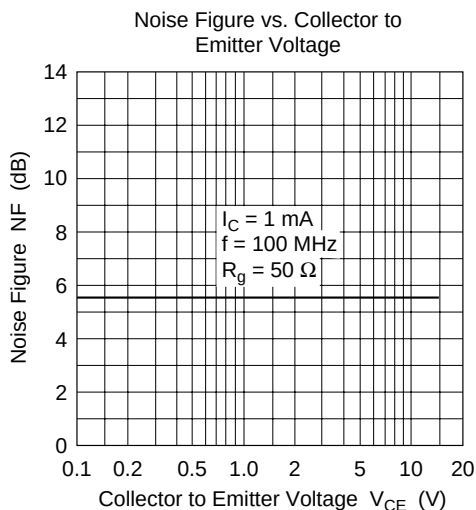
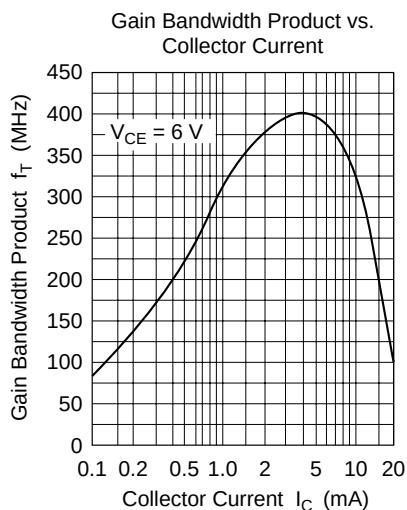
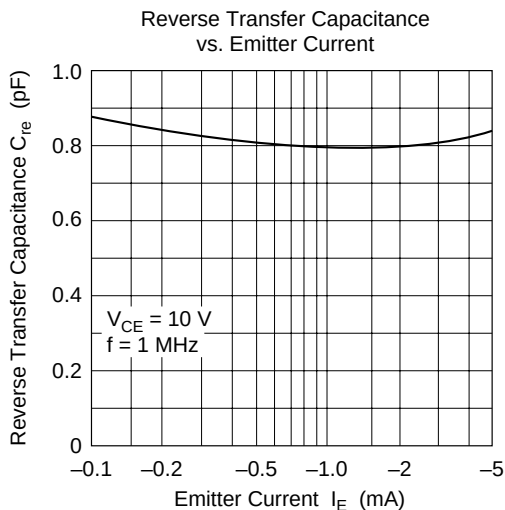
Typical Output Characteristics (2)



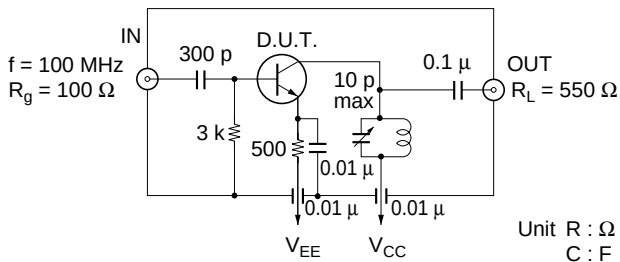
Typical Transfer Characteristics (1)





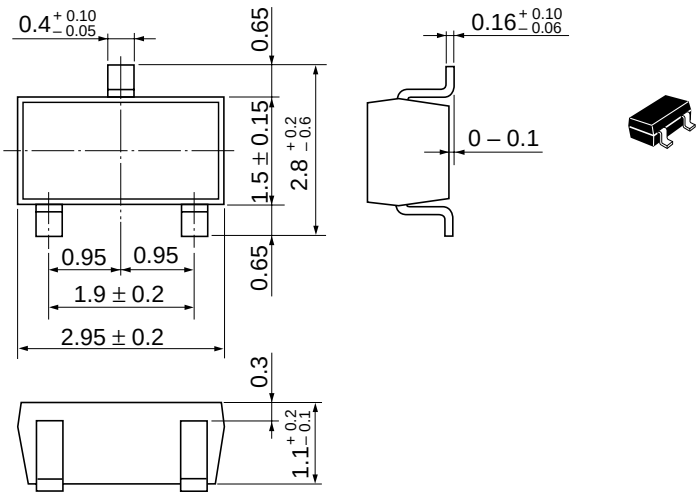


Power Gain Test Circuit



Package Dimensions

As of January, 2001
Unit: mm



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

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