2SC2732

Silicon NPN Epitaxial

HITACHI

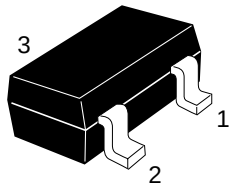
ADE-208-1072 (Z)
1st. Edition
Mar. 2001

Application

UHF frequency converter

Outline

MPAK



1. Emitter
2. Base
3. Collector

Note: Marking is “EC”.

Hitachi semiconductor

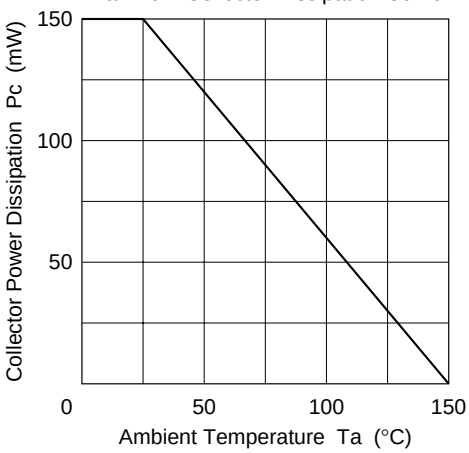
Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	25	V
Emitter to base voltage	V_{EBO}	4	V
Collector current	I_C	20	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

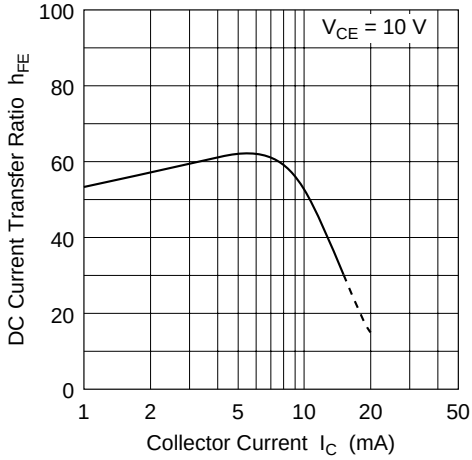
Electrical Characteristics (Ta = 25°C)

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	$V_{(BR)CEO}$	25	—	—	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_C = 0
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	5	V	I_C = 10 mA, I_B = 1 mA
DC current transfer ratio	h_{FE}	30	60	—		V_{CE} = 10 V, I_C = 3 mA
Gain bandwidth product	f_T	700	1000	—	MHz	V_{CE} = 10 V, I_C = 5 mA
Collector output capacitance	Cob	—	0.5	0.8	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Conversion gain	CG	—	7.0	—	dB	V_{CC} = 12 V, I_C = 1 mA, f = 900 MHz, f_{OSC} = 930 MHz (0dBm) , f_{out} = 30 MHz
Noise figure	NF	—	10.0	—	dB	V_{CC} = 12 V, I_C = 1 mA, f = 900 MHz, f_{OSC} = 930 MHz (0dBm) , f_{out} = 30 MHz

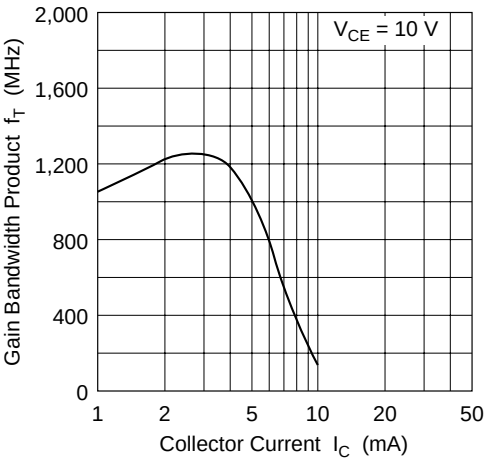
Maximum Collector Dissipation Curve



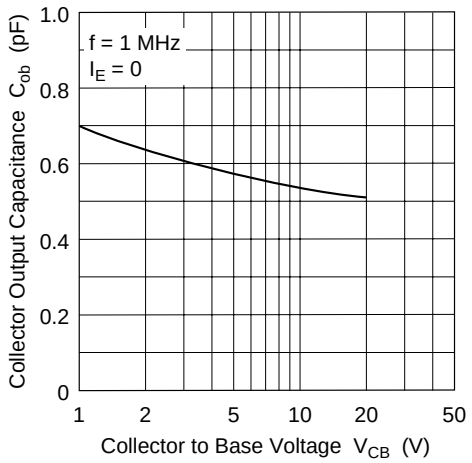
DC Current Transfer Ratio vs. Collector Current



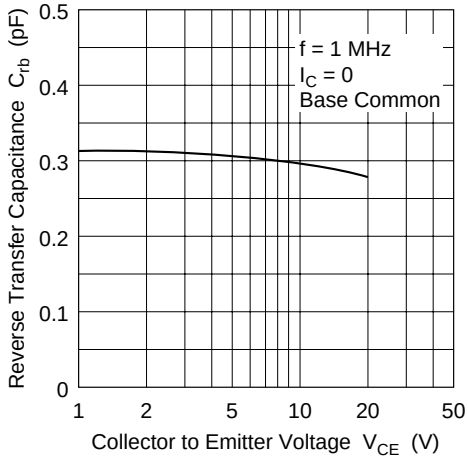
Gain Bandwidth Product vs. Collector Current



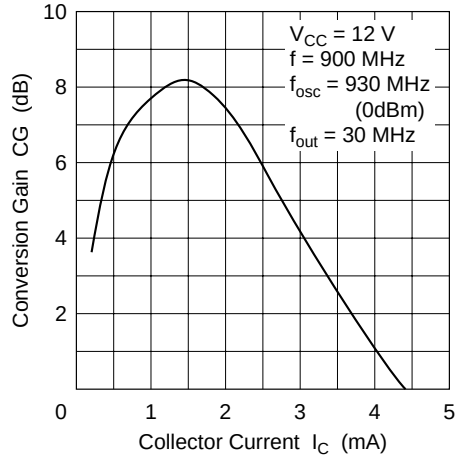
Collector Output Capacitance vs. Collector to Base Voltage



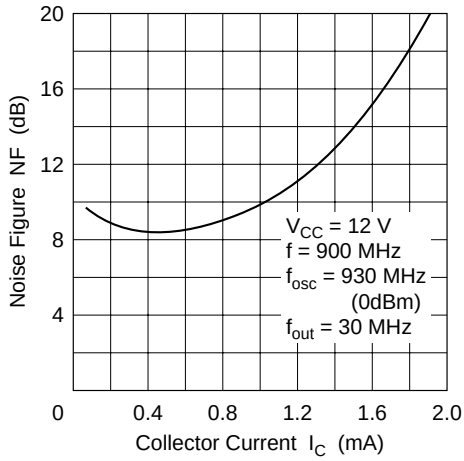
Reverse Transfer Capacitance vs. Collector to Emitter Voltage



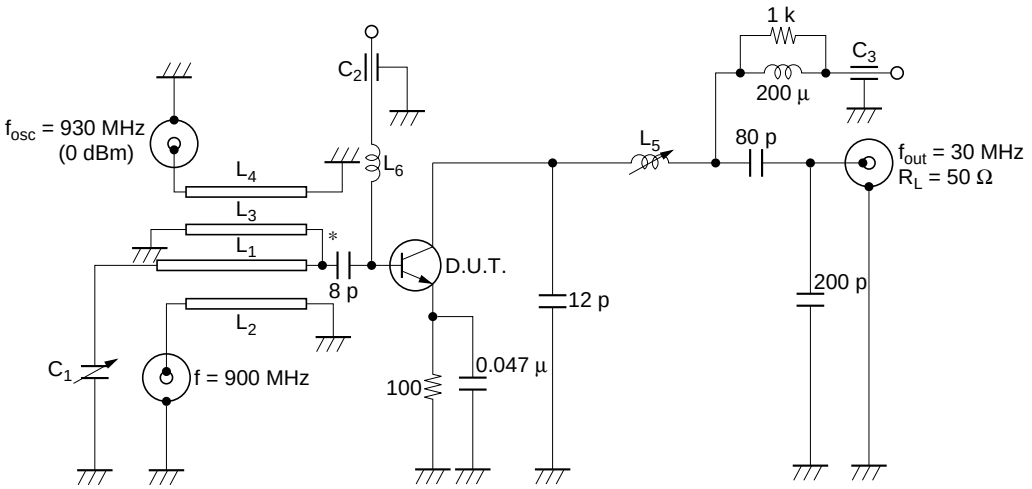
Conversion Gain vs. Collector Current



Noise Figure vs. Collector Current



Conversion Gain, Noise Figure Test Curcuit



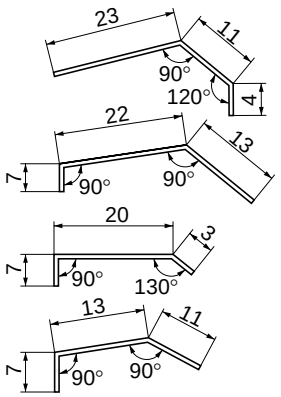
*·····Disk Capacitor
Unit R : Ω
C : F
L : H

L_1 : ϕ1 mm Enameled Copper wire

L_2 : ϕ1 mm Enameled Copper wire

L_3 : ϕ1 mm Enameled Copper wire

L_4 : ϕ1 mm Enameled Copper wire



Unit : mm

L_5 : Bobbin ϕ0.5 mm inside dia, ϕ0.2 mm Enameled Copper wire 20 Turns

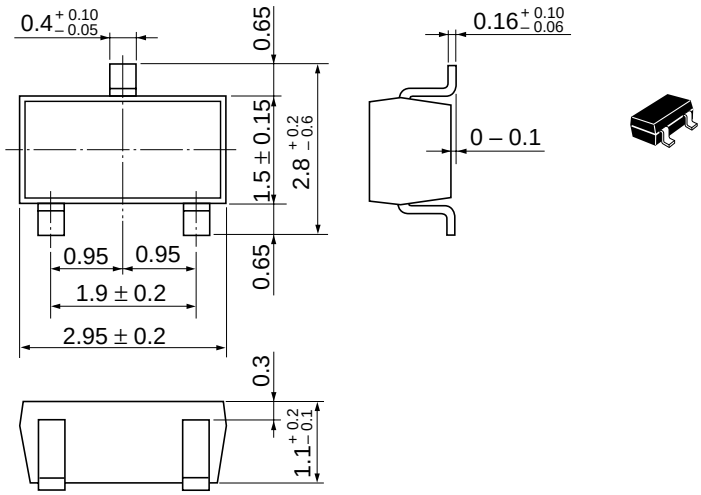
L_6 : ϕ5 mm Enameled Copper wire 1 Turns inside dia ϕ6 mm

C_1 : 20 pF max. Air Trimmer Condenser

C_2, C_3 : 1000 pF Air Core Capacitor

Package Dimensions

As of January, 2001
Unit: mm



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

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