2SC3793

Silicon NPN Epitaxial

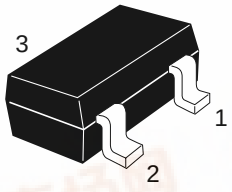
HITACHI

Application

UHF local oscillator

Outline

MPAK



1. Emitter
2. Base
3. Collector

2SC3793

Absolute Maximum Ratings (Ta = 25°C)

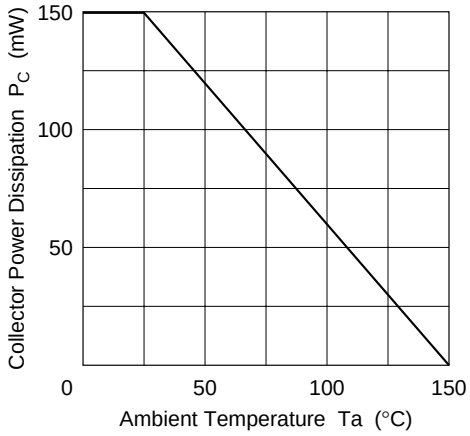
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	20	V
Collector to emitter voltage	V_{CEO}	15	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics (Ta = 25°C)

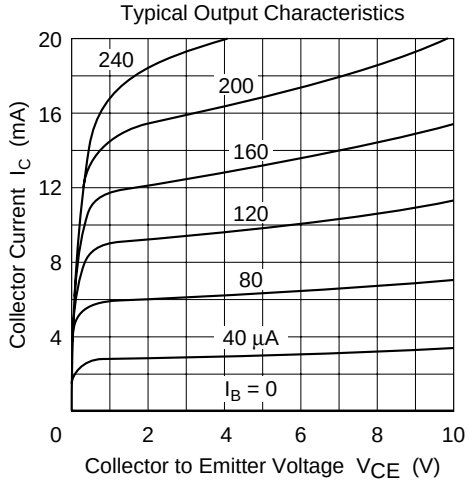
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	20	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	15	—	—	V	I_C = 1 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	1	µA	V_{CB} = 15 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	1	µA	V_{EB} = 3 V, I_C = 0
DC current transfer ratio	h_{FE}	30	—	200		V_{CE} = 10 V, I_C = 5 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	I_C = 20 mA, I_B = 4 mA
Collector output capacitance	Cob	—	0.7	1	pF	V_{CB} = 10 V, I_E = 0, f = 1MHz
Gain bandwidth product	f_T	—	2.9	—	GHz	V_{CE} = 10 V, I_C = 5 mA

Note: Marking is “IP-”.

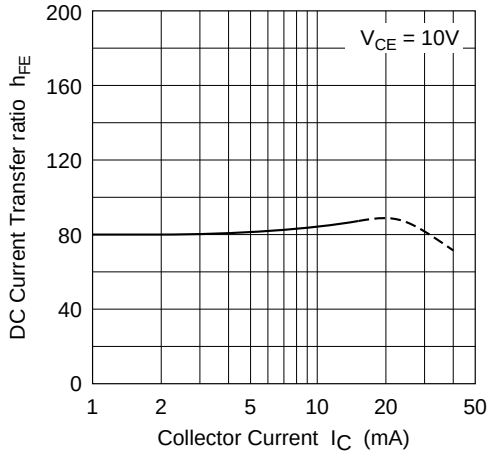
Maximum Collector Dissipation Curve



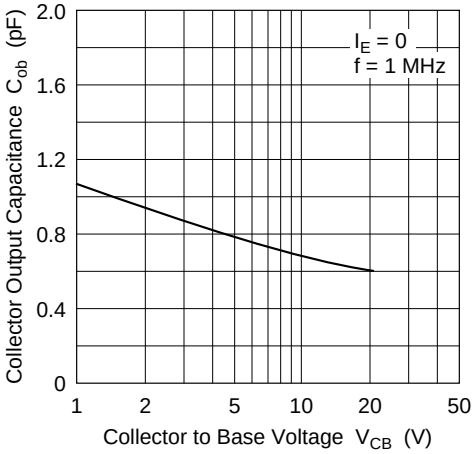
Typical Output Characteristics



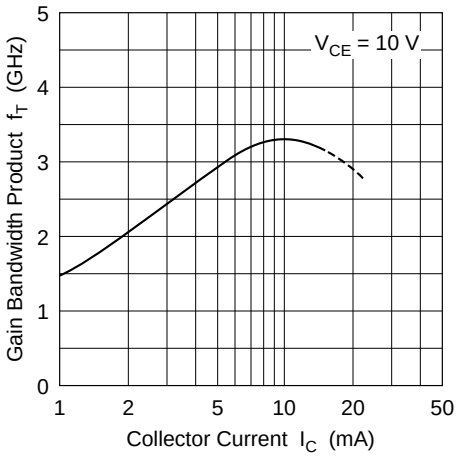
DC Current Transfer Ratio vs.
Collector Current



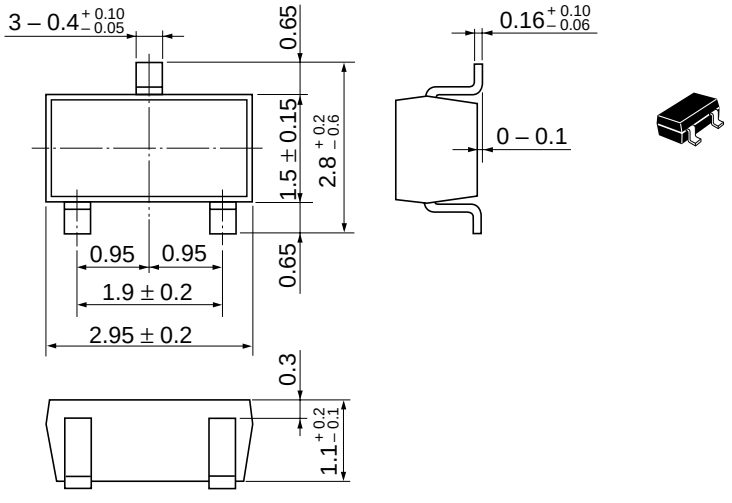
Collector Output Cpacitance vs.
Collector to Base Voltage



Gain Bandwidth Product
vs. Collector Current



Unit: mm


3 – 0.4 +0.10 −0.05
0.65
0.16 +0.10 −0.06
1.5 ± 0.15
2.8 +0.2 −0.6
0 – 0.1
0.95
0.95
1.9 ± 0.2
0.65
2.95 ± 0.2
0.3
1.1 +0.2 −0.1

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