

2SC5390

Silicon NPN Epitaxial
High Frequency Amplifier

HITACHI

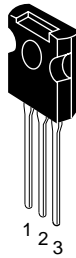
ADE-208-492 (Z)
1st. Edition
Dec. 1996

Features

- Excellent high frequency characteristics
 $f_T = 1.4\text{GHz}$ (typ.)
- Low output capacitance
 $C_{ob} = 2.4\text{ pF}$ (typ.)
- Isolated package
TO-126FM

Outline

TO-126FM



1. Emitter
2. Collector
3. Base

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

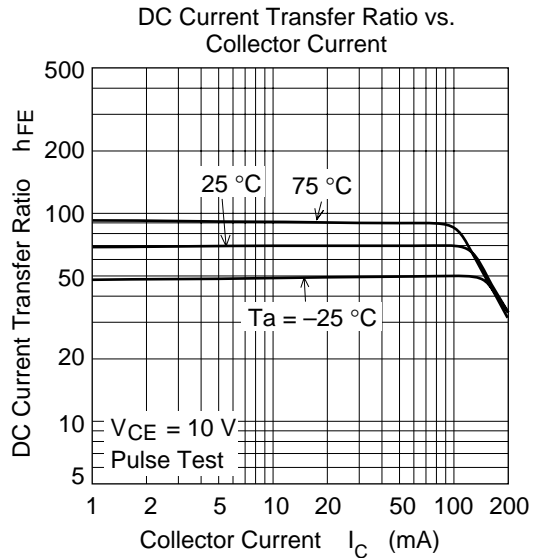
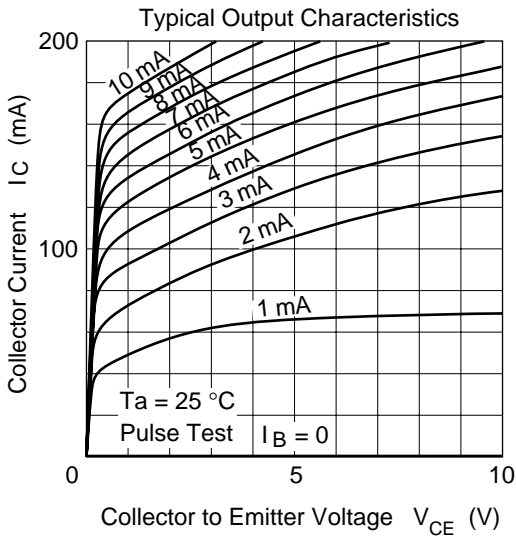
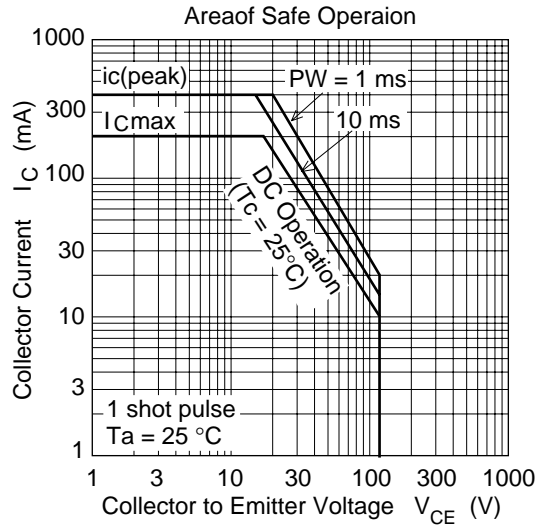
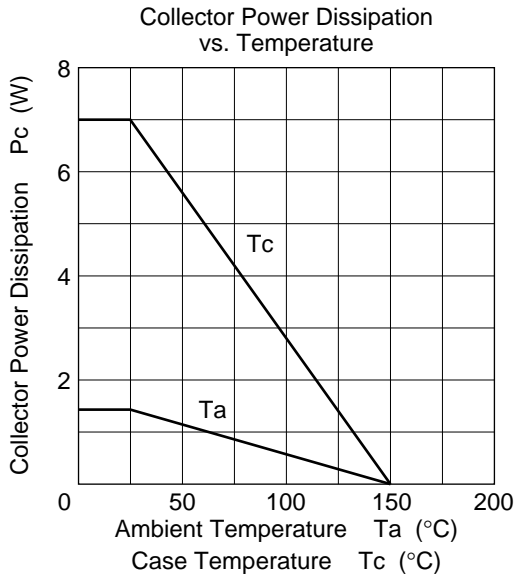
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	110	V
Collector to emitter voltage	V_{CEO}	110	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_{C}	200	mA
Collector peak current	$i_{\text{c(peak)}}$	400	mA
Collector power dissipation	P_{C}	1.4	W
Collector power dissipation	P_{C}^{*1}	7	W
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note: 1. Value at $T_{\text{c}} = 25^\circ\text{C}$

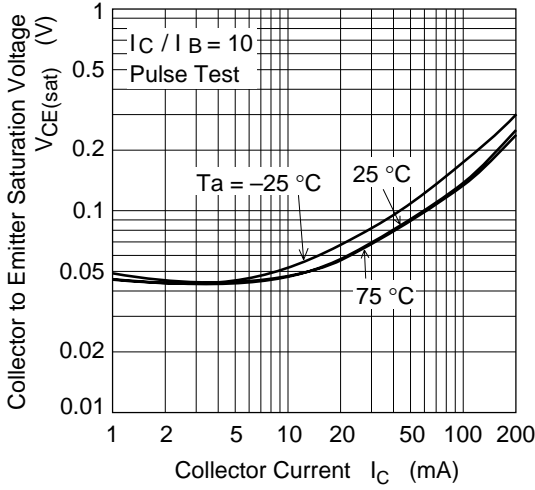
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	110	—	—	V	$I_{\text{C}} = 10\text{É A}$, $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	110	—	—	V	$I_{\text{C}} = 1\text{mA}$, $R_{\text{BE}} = \infty$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{\text{CB}} = 100\text{V}$, $I_{\text{E}} = 0$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{\text{EB}} = 3\text{V}$, $I_{\text{C}} = 0$
DC current transfer ratio	h_{FE}	30	—	100		$V_{\text{CE}} = 10\text{ V}$, $I_{\text{C}} = 10\text{mA}$
Base to emitter voltage	V_{BE}	—	—	1	V	$V_{\text{CE}} = 10\text{ V}$, $I_{\text{C}} = 10\text{mA}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	—	—	1	V	$I_{\text{C}} = 200\text{mA}$, $I_{\text{B}} = 20\text{mA}$
Gain bandwidth product	f_{T}	1.0	1.4	—	GHz	$V_{\text{CE}} = 10\text{ V}$, $I_{\text{C}} = 50\text{mA}$
Collector Output capacitance	C_{ob}	—	2.4	3.5	pF	$V_{\text{CB}} = 30\text{V}$, $I_{\text{E}} = 0$ $f = 1\text{MHz}$

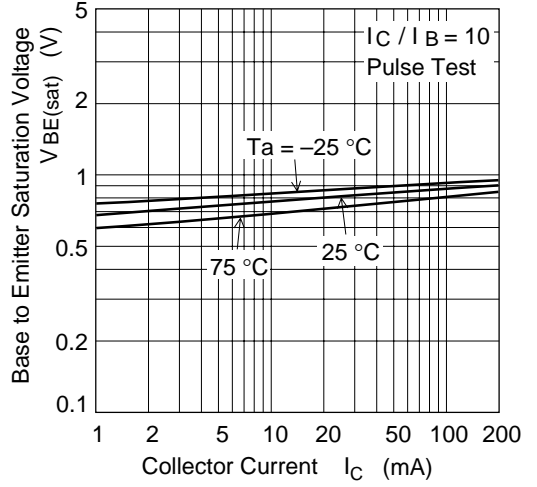
Main Characteristics



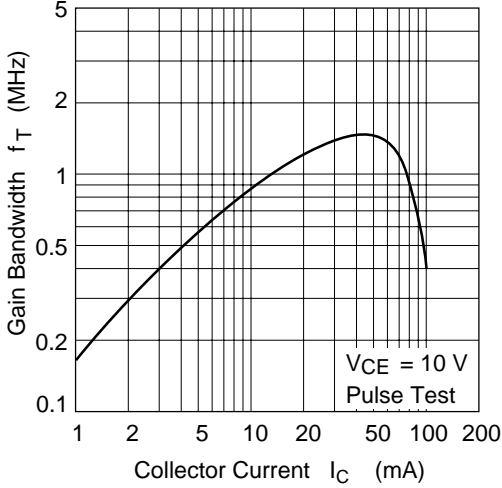
Collector to Emitter Saturation Voltage vs. Collector Current



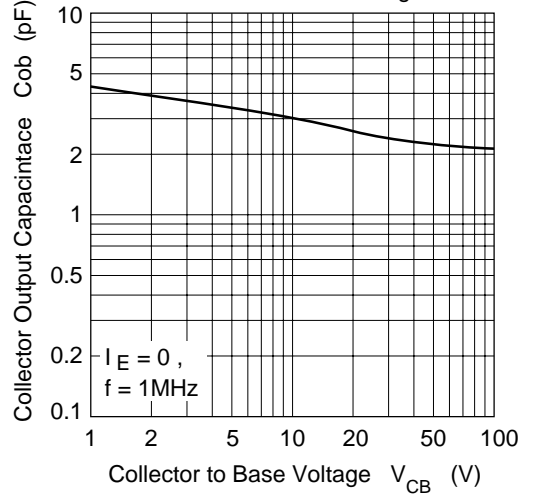
Base to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth vs. Collector Current

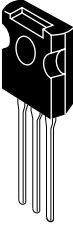
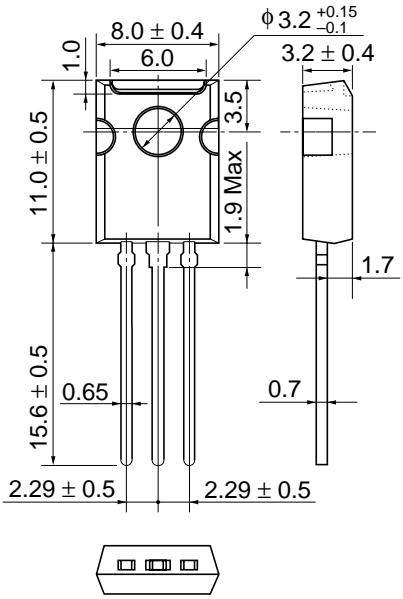


Collector Output Capacitance vs. Collector to Base Voltage



Package Dimentions

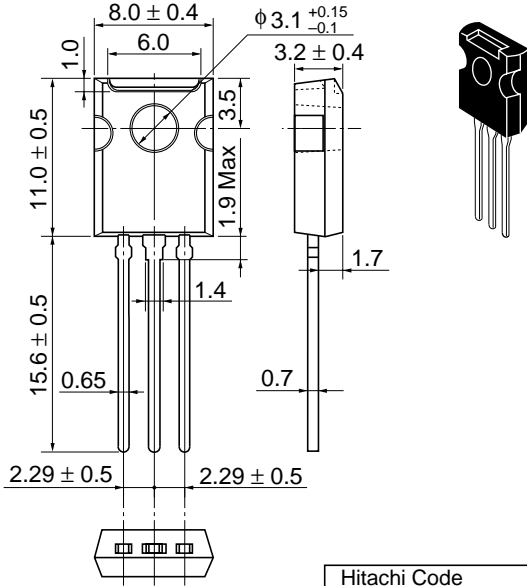
Unit: mm



Hitachi Code	TO-126FM
EIAJ	—
JEDEC	—

Package Dimensions

Unit: mm



Hitachi Code	TO-126FM
JEDEC	—
EIAJ	—
Mass (reference value)	0.87 g

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HITACHI

Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL	North America	: http://semiconductor.hitachi.com/
	Europe	: http://www.hitachi-eu.com/hel/ecg
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic Components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 585160

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00,
Singapore 049318
Tel: <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : <http://www.hitachi.com.sg>

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road,
Hung-Kuo Building,
Taipei (105), Taiwan
Tel: <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : <http://www.hitachi.com.tw>

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon,
Hong Kong
Tel : <852>-(2)-735-9218
Fax : <852>-(2)-730-0281
URL : <http://www.hitachi.com.hk>

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