HITACHI

2SD2540

Silicon NPN Epitaxial

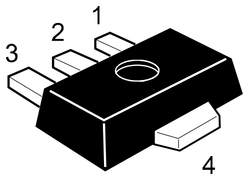
Application

Low frequency power amplifier

Features

- Low saturation voltage
  $V_{CE(sat)} \leq 0.3$ V
- Large current capacitance.
  $I_C = 5$ A

UPAK



1. Base
2. Collector
3. Emitter
4. Collector

Table 1 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	40	V
Collector to emitter voltage	V_{CEO}	20	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	5	A
Collector peak current	ic(peak)*	8	A
Collector power dissipation	P_C**	1	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

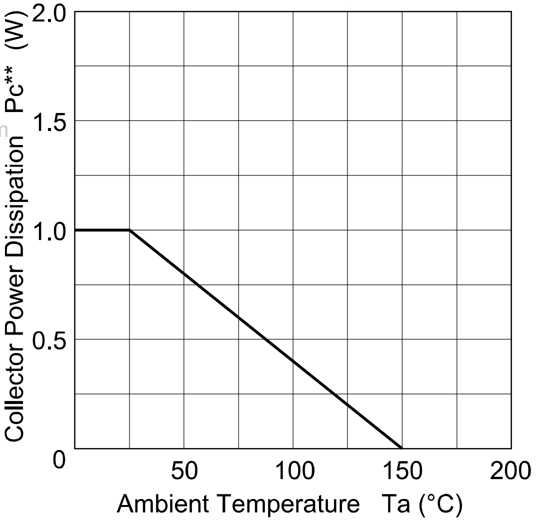
* PW ≤ 10 ms, duty cycle ≤ 20 %
** When using the alumina ceramic board (12.5 x 20 x 0.7 mm)
Note: Marking is "HS"
Attention: This device is very sensitive to electro static discharge.
It is recommended to adopt appropriate cautions when handling this transistor.

Table 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	40	—	—	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	$V_{(BR)EBO}$	7	—	—	V	I_E = 10 µA I_C = 0
Collector to base cutoff current	I_{CBO}	—	—	0.1	µA	V_{CB} = 20 V, I_E = 0
Collector to emitter cutoff current	I_{CEO}	—	—	1	µA	V_{CE} = 10 V, R_{BE} = ∞
Emitter to base cutoff current	I_{EBO}	—	—	0.1	µA	V_{EB} = 5 V, I_C = 0
DC current transfer ratio	$h_{FE}1$*	250	—	600		V_{CE} = 2 V, I_C = 0.5 A
DC current transfer ratio	$h_{FE}2$*	150	—	—		V_{CE} = 2 V, I_C = 5 A
Collector to emitter saturation voltage	$V_{CE(sat)*}$	—	0.21	0.3	V	I_C =3 A I_B = 0.1 A
Base to emitter saturation voltage	$V_{BE(sat)*}$	—	0.95	1.2	V	I_C =2 A I_B = 0.2 A
Gain bandwidth product	f_T	—	190	—	MHz	V_{CE} = 6 V, I_C = 50 mA
Collector output capacitance	Cob	—	30	—	pF	V_{CB} = 10 V I_E = 0 f = 1 MHz

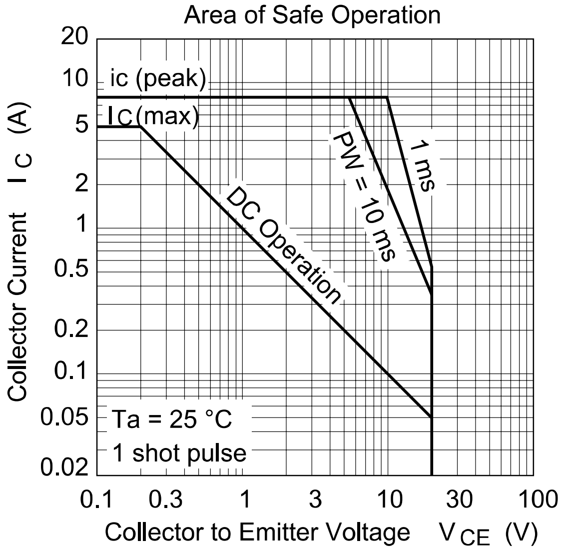
* Pulse Test

Maximum Power Dissipation Curve

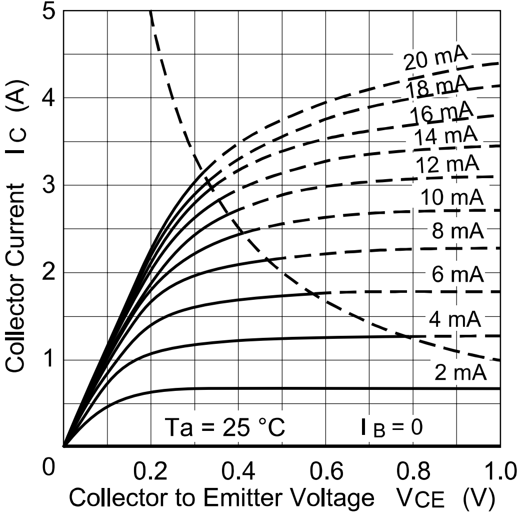


** When using the alumina ceramic board
(12.5 x 20 x 0.7 mm)

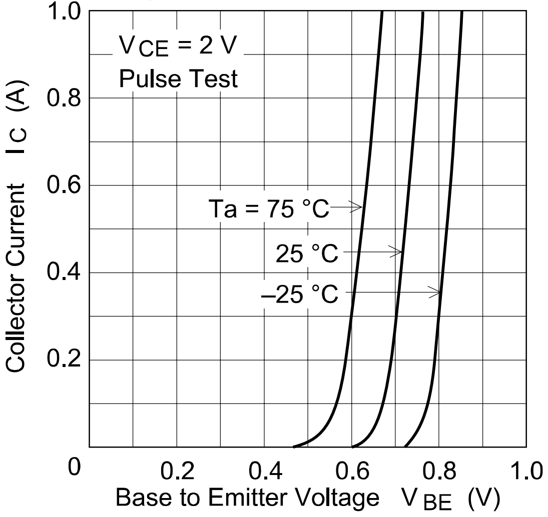
Area of Safe Operation



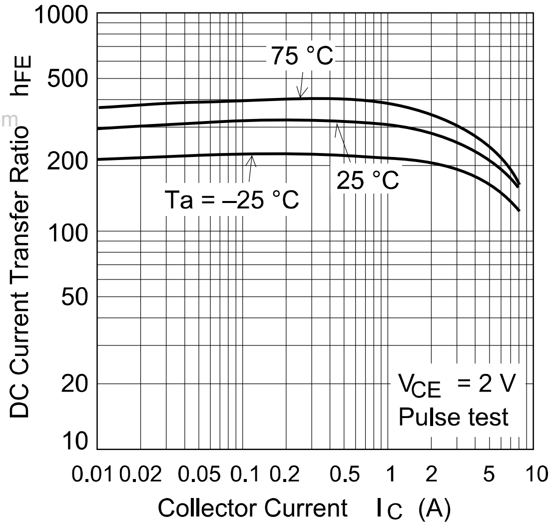
Typical Output Characteristics



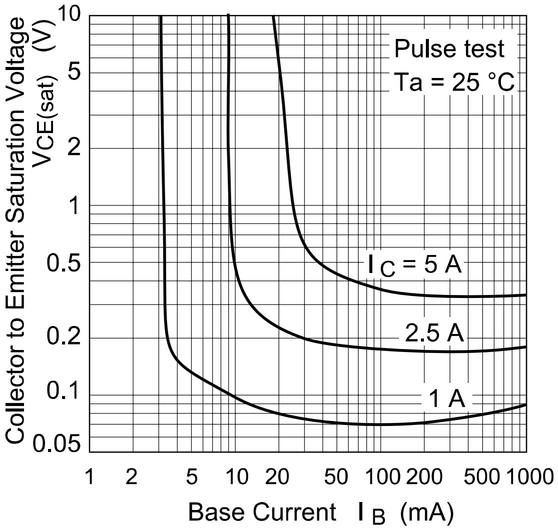
Typical Transfer Characteristics



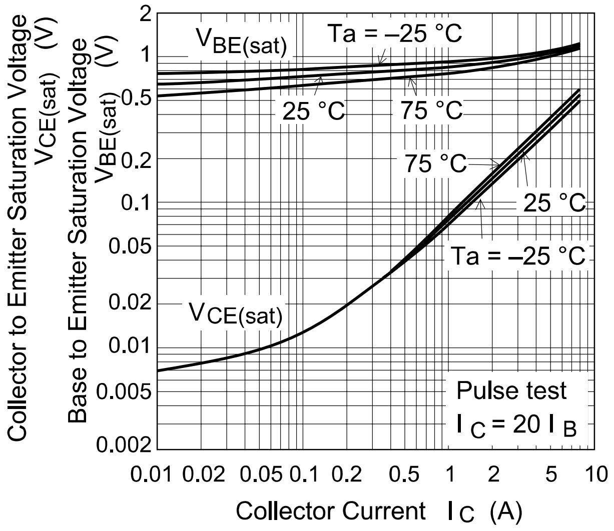
DC Current Transfer Ratio vs. Collector Current



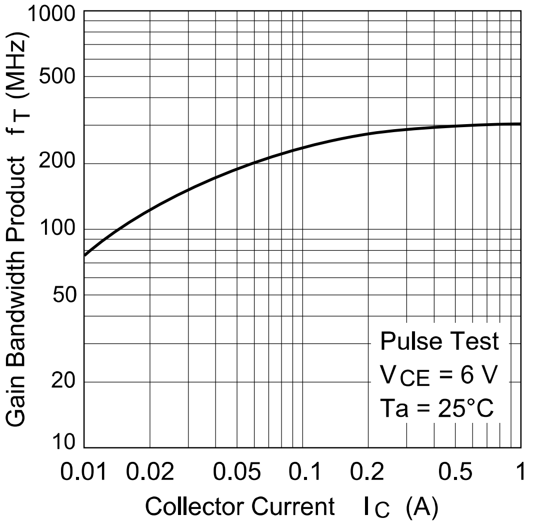
Collector to Emitter Saturation Voltage vs. Base Current

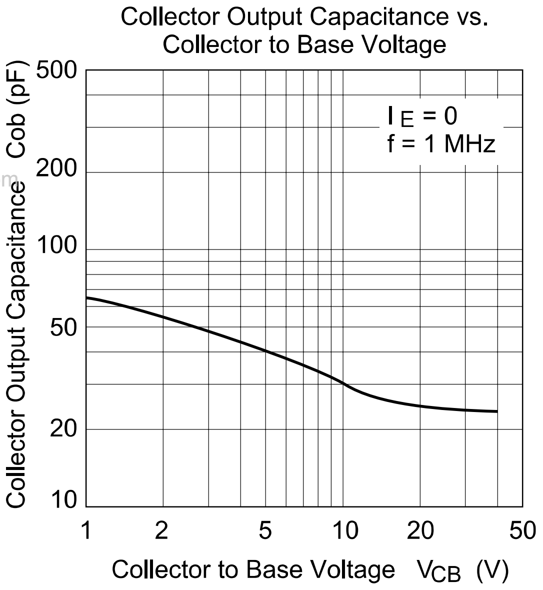


Saturation Voltage vs. Collector Current



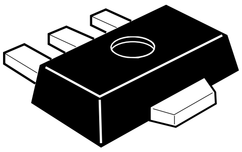
Gain Bandwidth Product vs. Collector Current

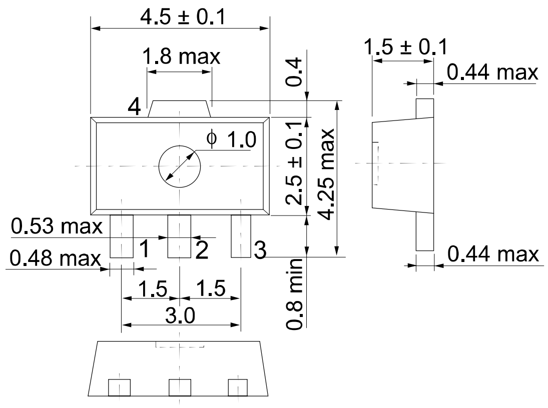



Collector Output Capacitance vs. Collector to Base Voltage

Package Dimensions

Unit : mm





Hitachi Code	UPAK
EIAJ	SC–62
JEDEC	UPAK