HITACHI

2SD2540

Silicon NPN Epitaxial

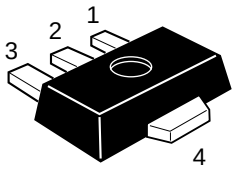
Application

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.

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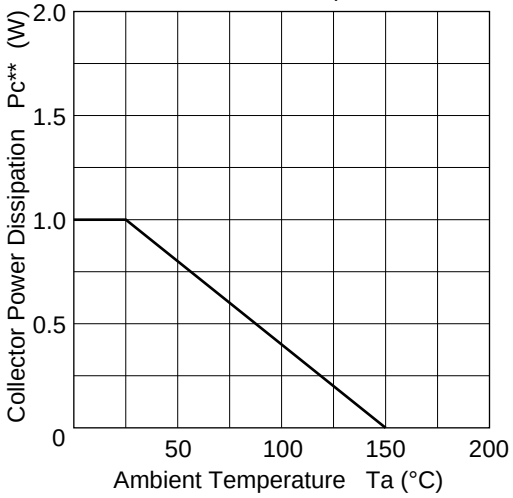
Table 2 Electrical Characteristics (Ta = 25°C)

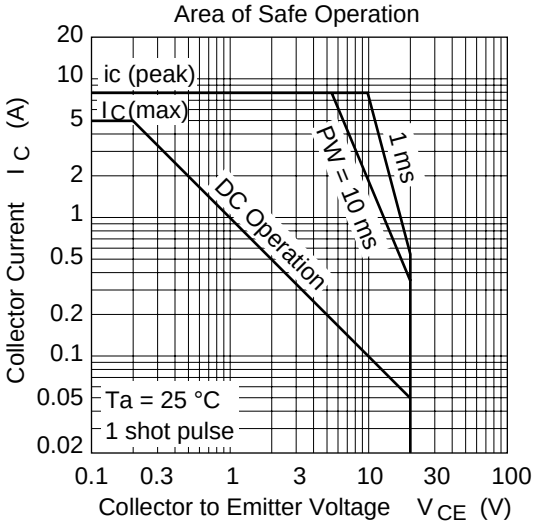
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	40	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	I_E = 10 µA I_C = 0
Collector to base 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

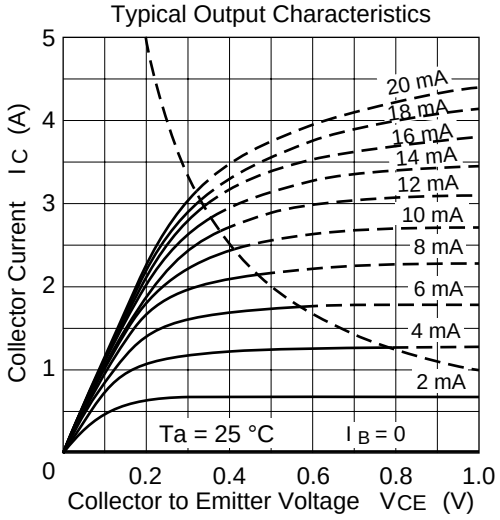


Area of Safe Operation

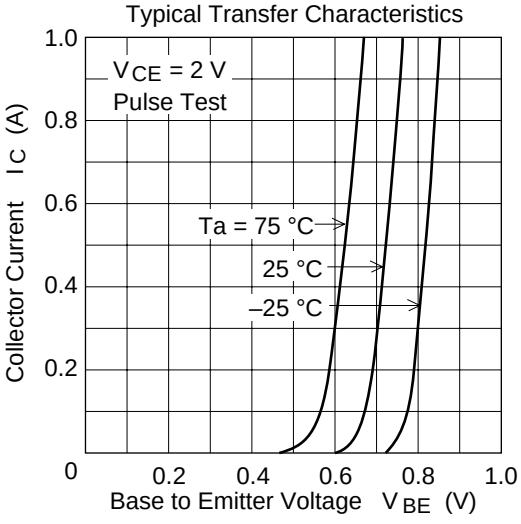


** When using the alumina ceramic board (12.5 x 20 x 0.7 mm)

Typical Output Characteristics



Typical Transfer Characteristics



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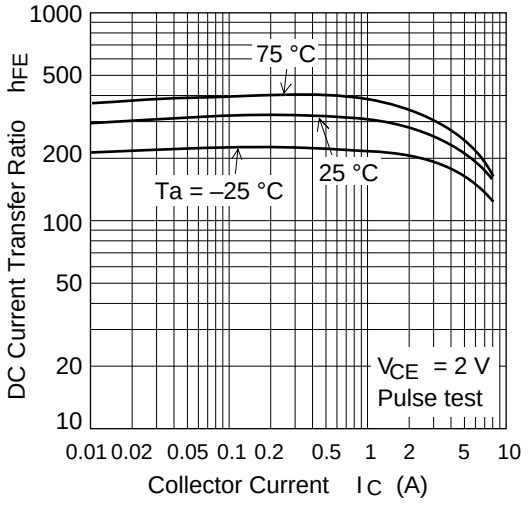
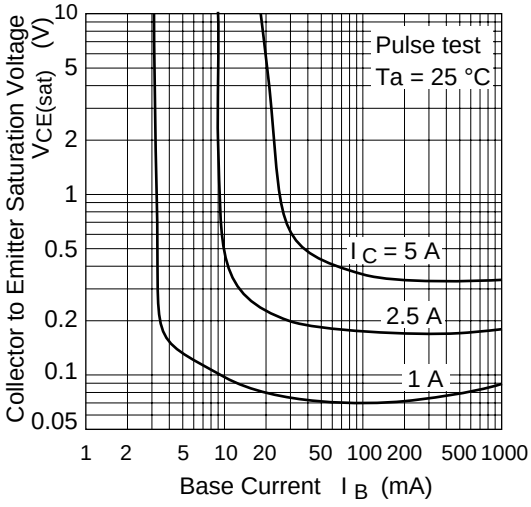
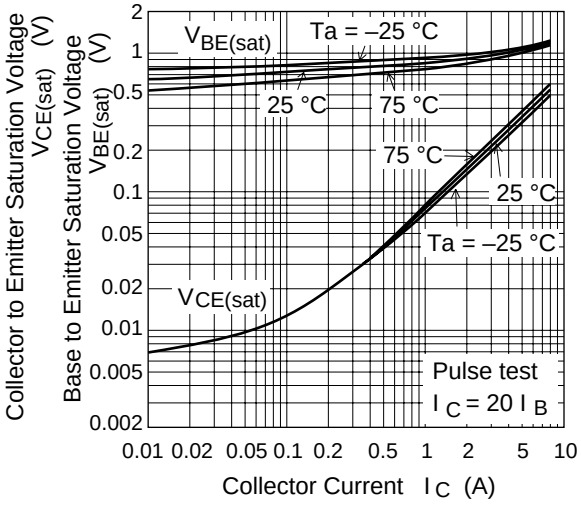
DC Current Transfer Ratio vs. Collector Current



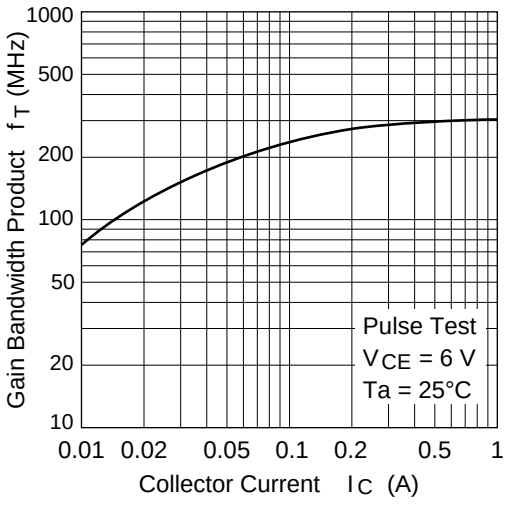
Collector to Emitter Saturation Voltage vs. Base Current

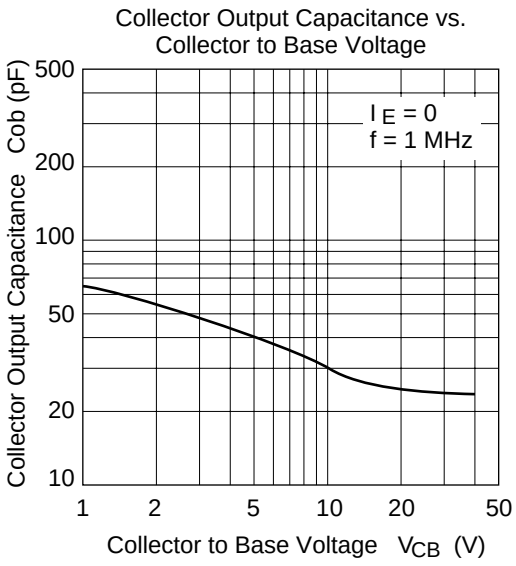


Saturation Voltage vs. Collector Current



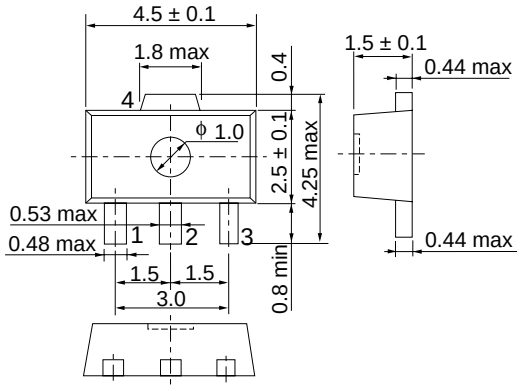
Gain Bandwidth Product vs. Collector Current

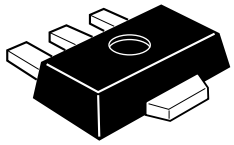




Package Dimensions

Unit : mm





Hitachi Code	UPAK
EIAJ	SC–62
JEDEC	UPAK