2SD2107

Silicon NPN Triple Diffused

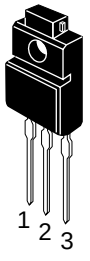
HITACHI

Application

Low frequency power amplifier

Outline

TO-220FM



1. Base
2. Collector
3. Emitter

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	70	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	4	A
Collector peak current	$I_{C(peak)}$	8	A
Collector power dissipation	P_C	2	W
	P_C*[1]	25	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Value at T_C = 25°C.

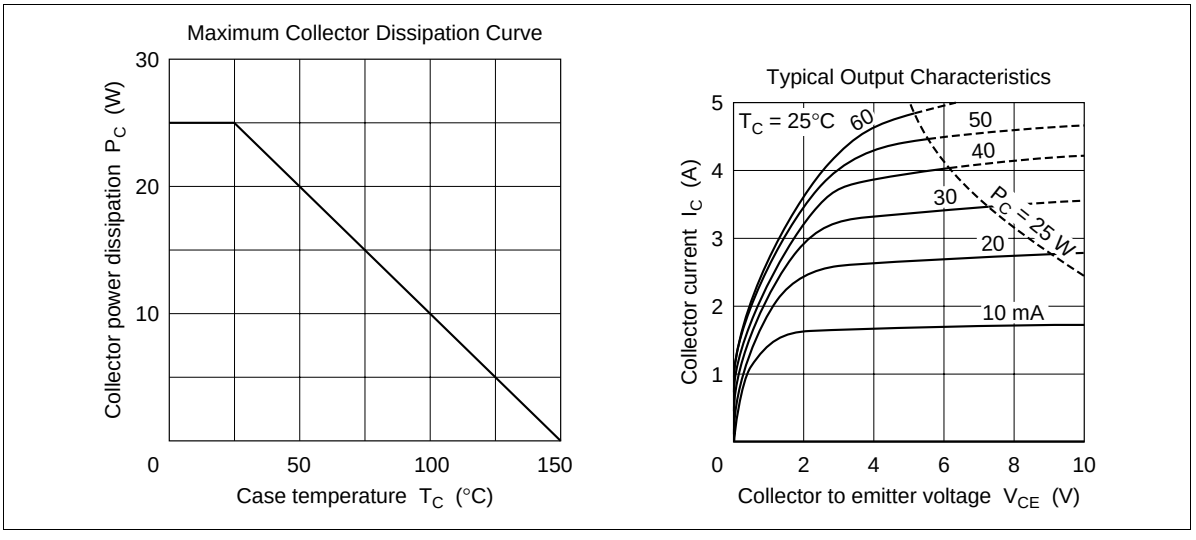
Hitachi semiconductor

Electrical Characteristics (Ta = 25°C)

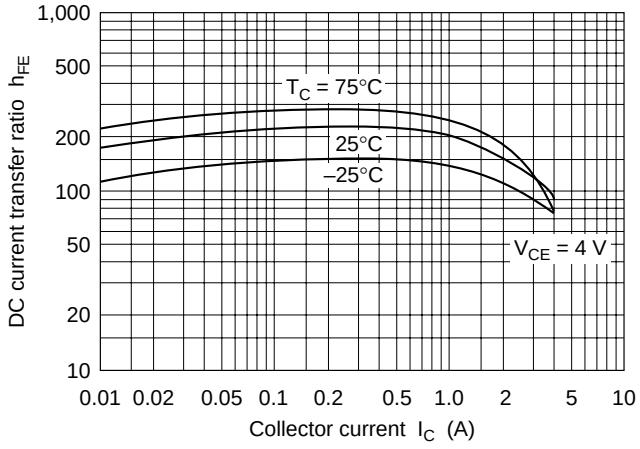
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	70	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	V	I_C = 50 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	10	µA	V_{CB} = 60 V, I_E = 0
	I_{CEO}	—	—	10		V_{CE} = 50 V, R_{BE} = ∞
DC current transfer ratio	h_{FE1}*[2]	60	—	200		V_{CE} = 4 V, I_C = 1 A*[1]
	h_{FE2}	35	—			V_{CE} = 4 V, I_C = 0.1 A*[1]
Base to emitter voltage	V_{BE}	—	—	1.0	V	V_{CE} = 4 V, I_C = 1 A*[1]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	I_C = 2 A, I_B = 0.2 A*[1]
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.2	V	I_C = 2 A, I_B = 0.2 A*[1]

Notes: 1. Pulse test.
2. The 2SD2107 is grouped by h_{FE1} as follows.

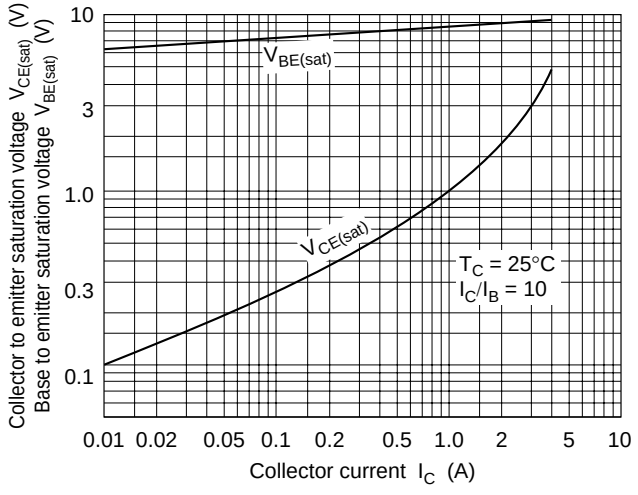
B	C
60 to 120	100 to 200

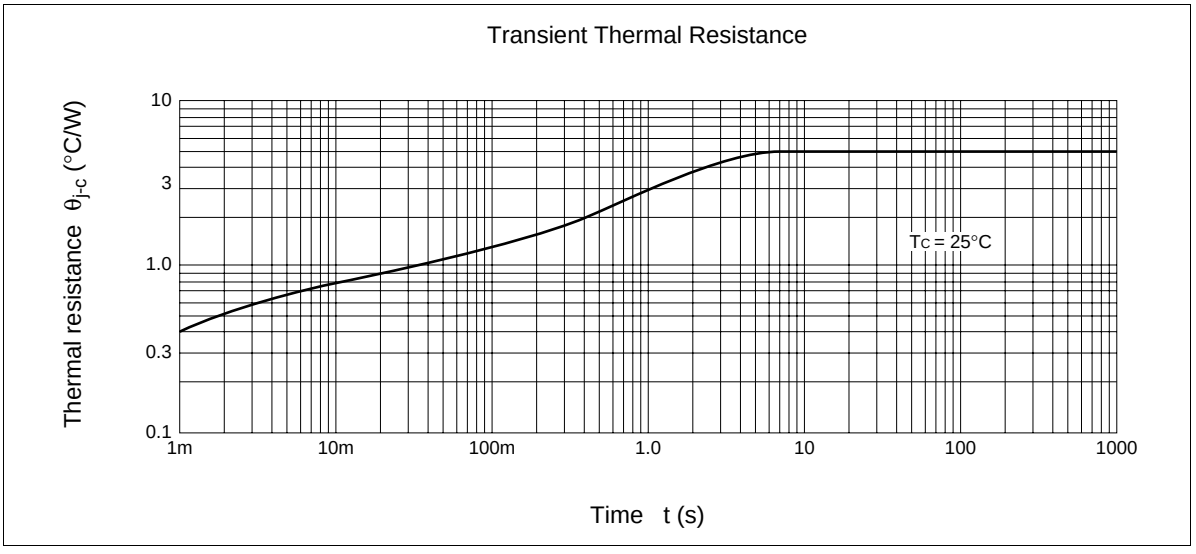


DC Current Transfer Ratio vs. Collector Current

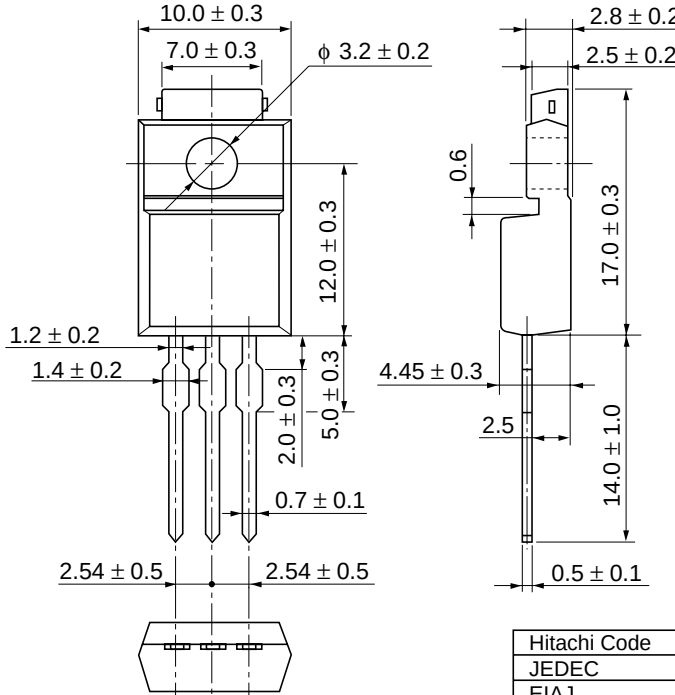


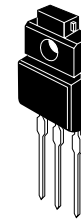
Saturation Voltage vs. Collector Current




Transient Thermal Resistance
Thermal resistance θj-c (°C/W)
10
3
1.0
0.3
0.1
1m
10m
100m
1.0
10
100
1000
Tc = 25°C
Time t (s)

Unit: mm





Hitachi Code	TO-220FM
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.8 g

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