2SC4500(L)/(S)

Silicon NPN Epitaxial

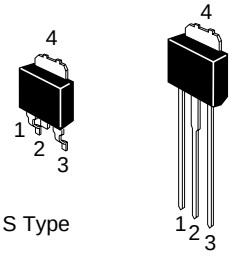
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Application

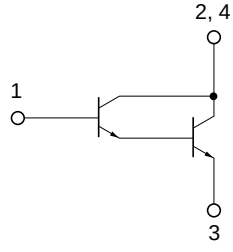
Low frequency amplifier

Outline

DPAK



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



Hitachi semiconductor

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	1	A
Collector peak current	$I_{C\ (peak)}$	2	A
Collector power dissipation	P_C	0.8	W
	P_C*[1]	8	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

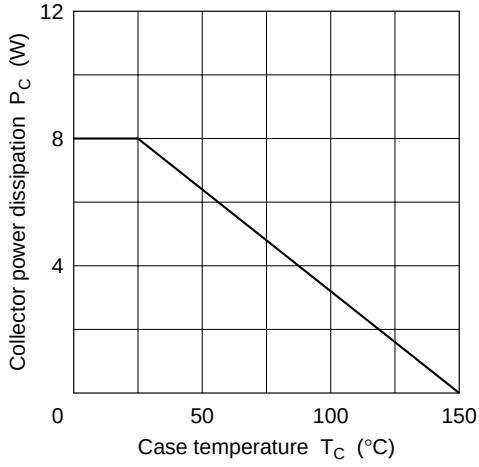
Note: 1. Value at T_C = 25°C.

Electrical Characteristics (Ta = 25°C)

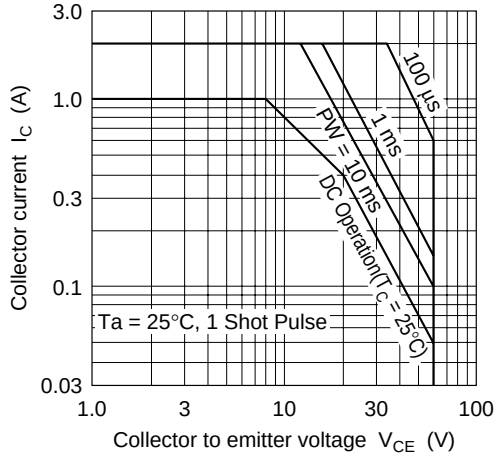
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	I_E = 0.1 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	10	µA	V_{CB} = 60 V, I_E = 0
DC current transfer ratio	h_{FE}	2000	—	—		V_{CE} = 10 V, I_C = 500 mA*[1]
Collector to emitter saturation voltage	$V_{CE\ (sat)}$	—	—	1.5	V	I_C = 500 mA, I_B = 0.5 mA*[1]
Base to emitter saturation voltage	$V_{BE\ (sat)}$	—	—	2.0	V	I_C = 500 mA, I_B = 0.5 mA*[1]
Turn on time	t_{on}	—	100	—	ns	V_{CC} = 12 V, IC = 250 mA,
Turn off time	t_{off}	—	600	—	ns	I_{B1} = –I_{B2} = 5 mA

Note: 1. Pulse Test.

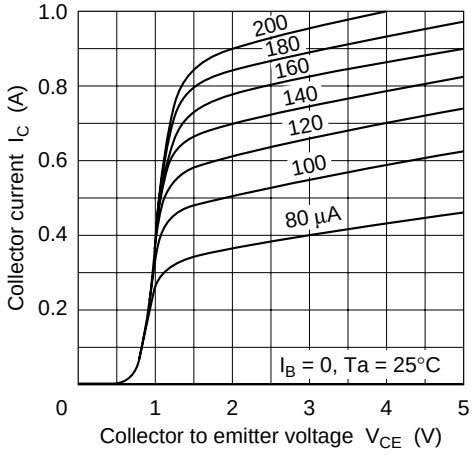
Maximum Collector Dissipation Curve



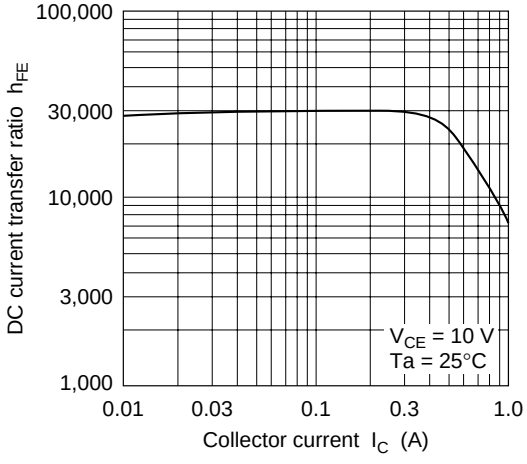
Area of Safe Operation

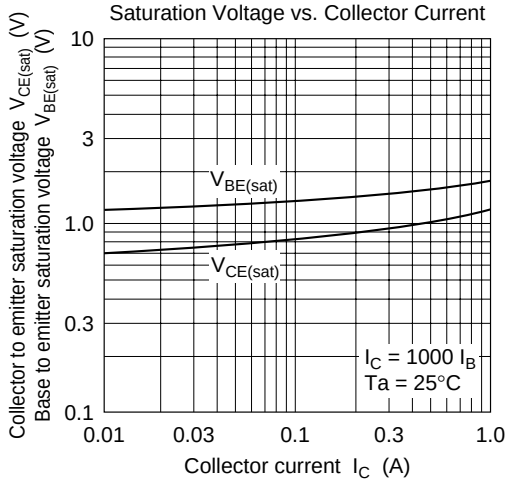


Typical Output Characteristics

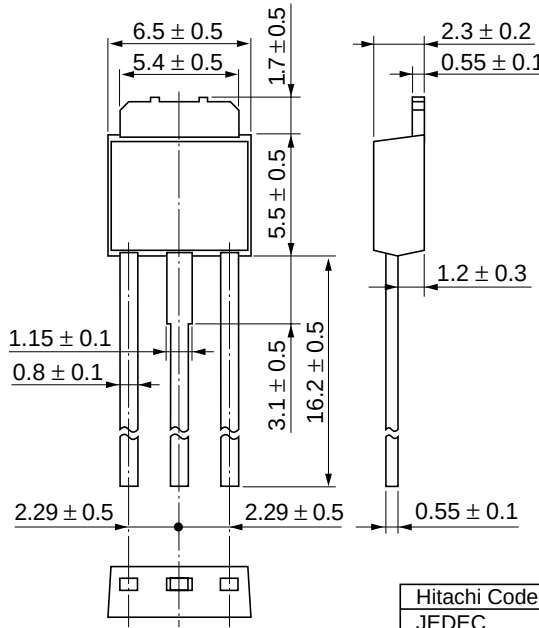


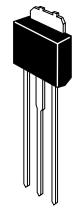
DC Current Transfer Ratio vs. Collector Current




Saturation Voltage vs. Collector Current
Collector to emitter saturation voltage $V_{CE(sat)}$ (V)
Base to emitter saturation voltage $V_{BE(sat)}$ (V)
10
3
1.0
0.3
0.1
$V_{BE(sat)}$
$V_{CE(sat)}$
I_C = 1000 I_B
Ta = 25°C
0.01
0.03
0.1
0.3
1.0
Collector current I_C (A)

Unit: mm





Hitachi Code	DPAK (L)-(1)
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.42 g

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