2SA673A(K)

Silicon PNP Epitaxial

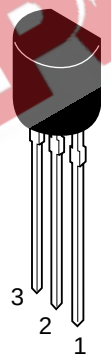
HITACHI

Application

- Low frequency amplifier
- Medium speed switching

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	–50	V
Collector to emitter voltage	V_{CEO}	–50	V
Emitter to base voltage	V_{EBO}	–4	V
Collector current	I_C	–0.5	A
Collector power dissipation	P_C	0.4	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics (Ta = 25°C)

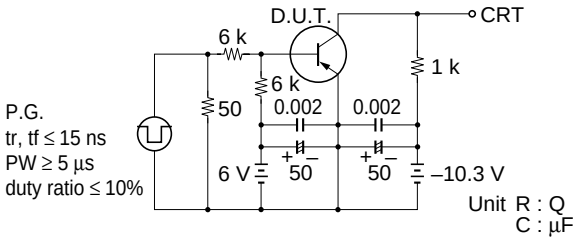
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	–50	—	—	V	I_C = –10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–50	—	—	V	I_C = –1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–4	—	—	V	I_E = –10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–0.5	µA	V_{CB} = –20 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	–0.5	µA	V_{EB} = –3 V, I_C = 0
Base to emitter voltage	V_{BE}	—	–0.64	—	V	V_{EB} = –3 V, I_C = –10 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	–0.2	–0.6	V	I_C = –150 mA, I_B = –15 mA*[2]
Base to emitter saturation voltage	$V_{BE(sat)}$	—	–0.87	—	V	I_C = –150 mA, I_B = –15 mA*[2]
DC current transfer ratio	h_{FE}*[1]	60	—	320		V_{CE} = –3 V, I_C = –10 mA
	h_{FE}	10	—	—		V_{CE} = –3 V, I_C = –500 mA*[2]
Gain bandwidth product	f_T	—	120	—	MHz	V_{CE} = –3 V, I_C = –10 mA
Turn on time	t_{on}	—	0.3	—	µs	V_{CC} = –10.3 V
Turn off time	t_{off}	—	0.6	—	µs	I_C = 10 I_{B1} = –10 I_{B2} = –10 mA
Storage time	t_{stg}	—	0.4	—	µs	V_{CC} = –5 V, I_C = I_{B1} = I_{B2} = –20 mA

Notes: 1. The 2SA673A(K) is grouped by h_{FE} as follows.
2. Pulse test

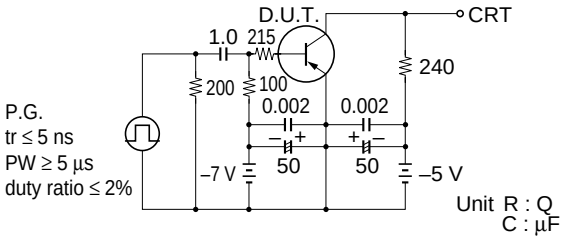
B	C	D
60 to 120	100 to 200	160 to 320

See 2SA673A except for the above – mentioned characteristic curves.

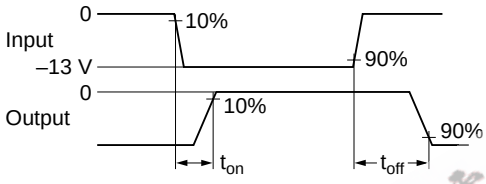
Switching Time Test Circuit
t_{on}, t_{off} Test Circuit



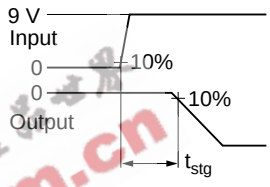
Switching Time Test Circuit
t_{stg} Test Circuit

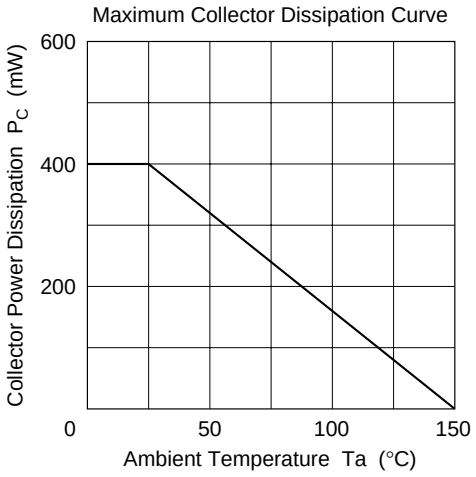


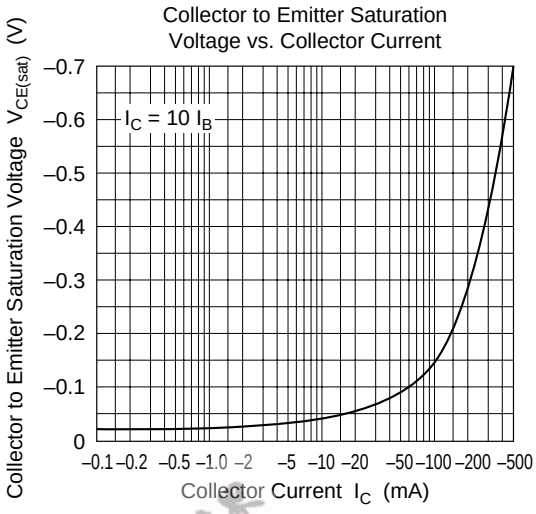
Response Waveform

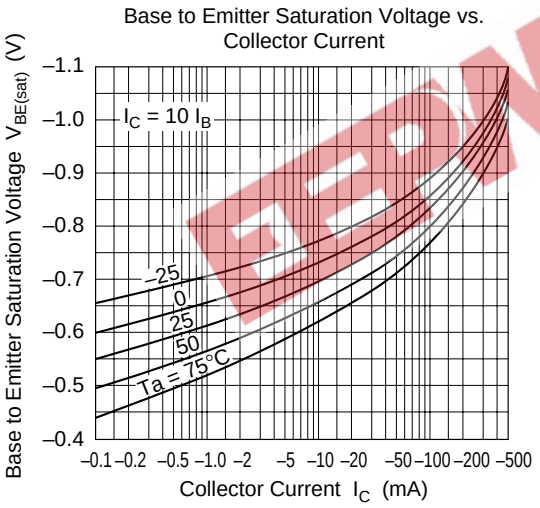


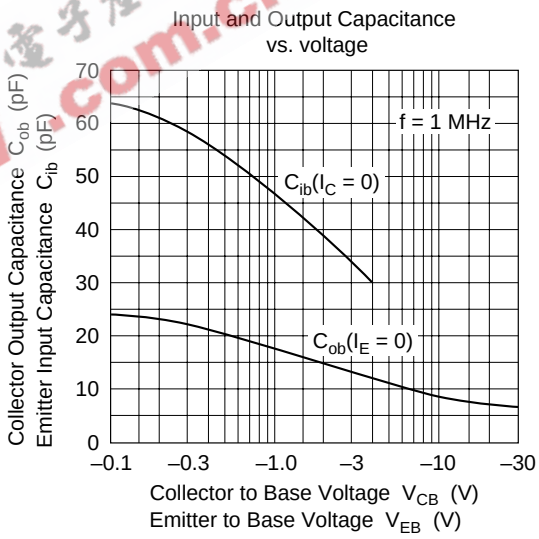
Response Waveform



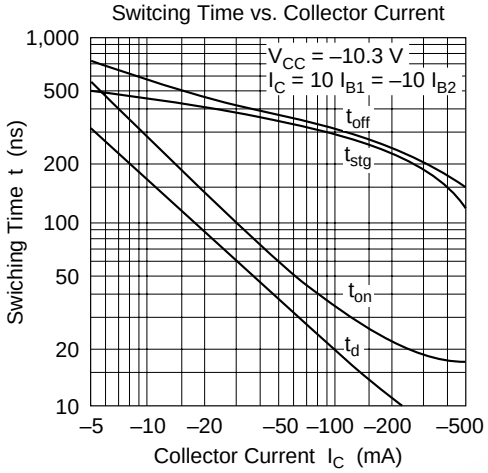




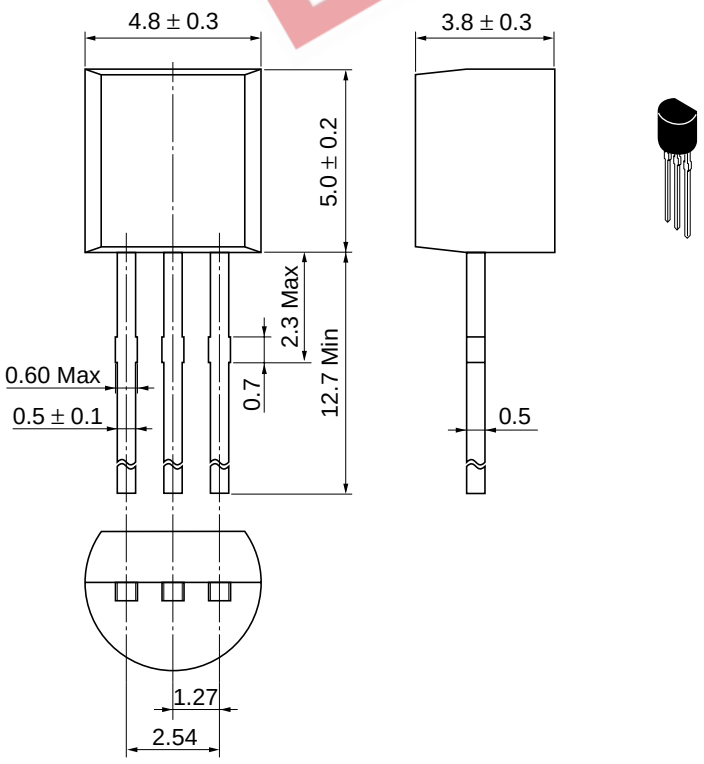




Switcing Time vs. Collector Current



Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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