
2SA673A(K)

Silicon PNP Epitaxial

HITACHI

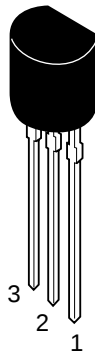
ADE-208-313A (Z)
2nd. Edition
Mar. 2001

Application

- Low frequency amplifier
- Medium speed switching

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

2SA673A(K)

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	T _j	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

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

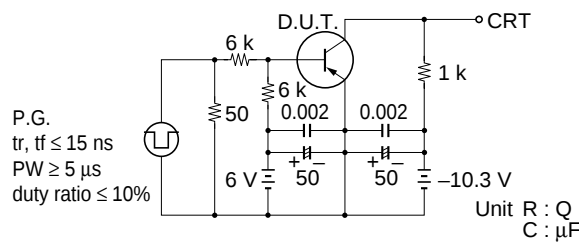
Notes: 1. The 2SA673A(K) is grouped by h_{FE} as follows.

2. Pulse test

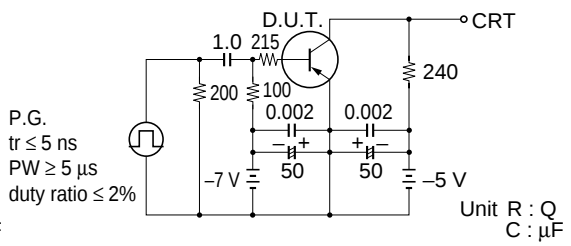
B	C	D
60 to 120	100 to 200	160 to 320

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

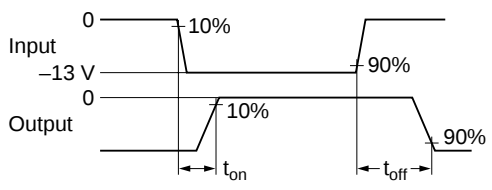
Switching Time Test Circuit
 t_{on} , t_{off} Test Circuit



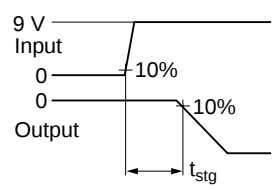
Switching Time Test Circuit
 t_{stg} Test Circuit

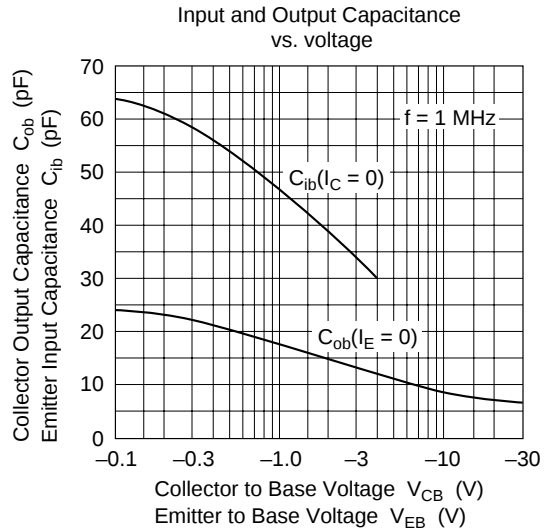
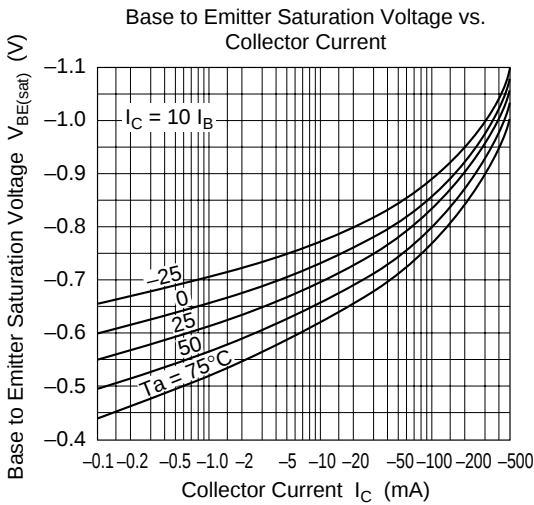
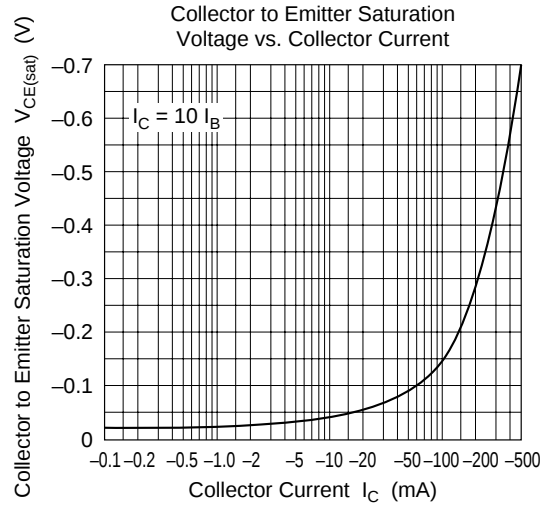
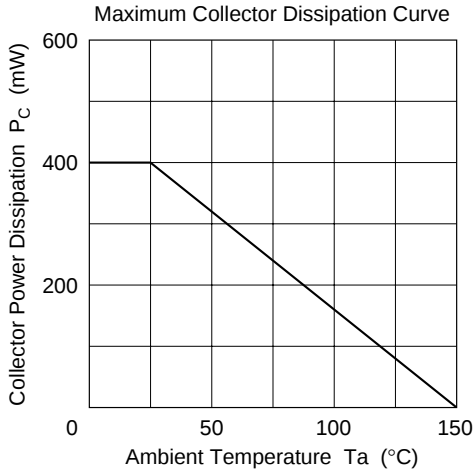


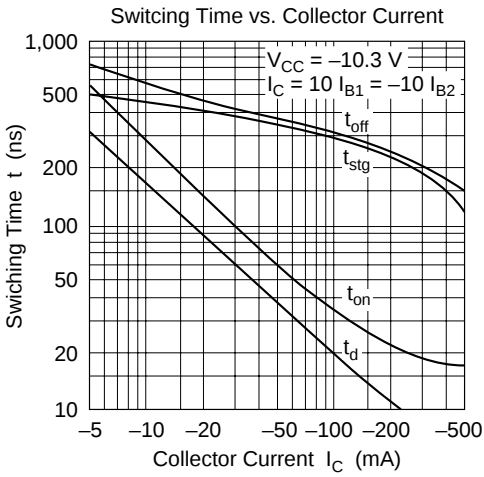
Response Waveform



Response Waveform



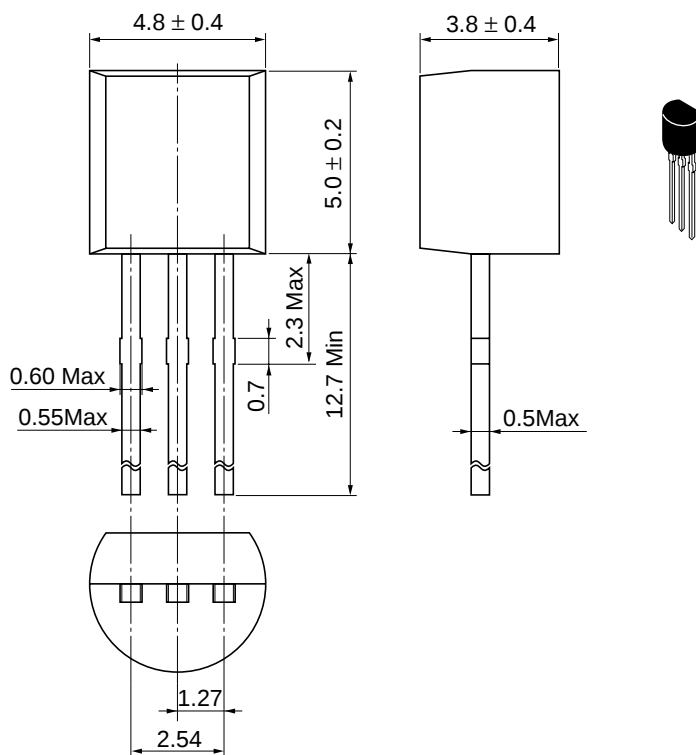




Package Dimensions

As of January, 2001

Unit: mm



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

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