

(SMALL-SIGNAL TRANSISTOR)

# 2SD1972

FOR LOW FREQUENCY POWER AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL PLANAR TYPE

## DESCRIPTION

2SD1972 is a silicon NPN epitaxial planar type power transistor using insulated full mold package.

## FEATURE

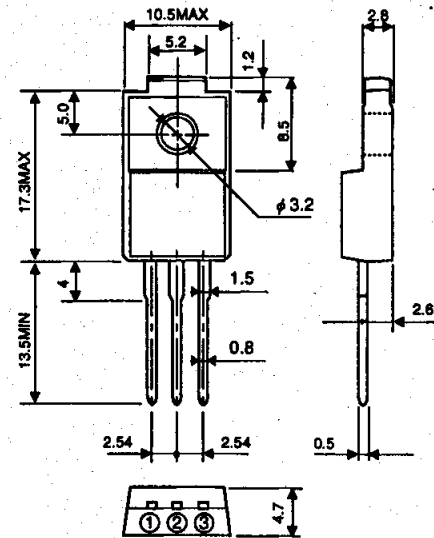
- High collector current  $I_c = 3A, I_{CM} = 5A$
- High  $h_{FE}$   $h_{FE} = 250$  to  $800$
- Full mold package with heat sink
- High voltage  $V_{CE0} = 60V$
- Low collector to emitter saturation voltage  
 $V_{CE(sat)} = 0.5 V$  max (@  $I_c = 2A, I_B = 0.2A$ )

## APPLICATION

Power supply circuit, solenoid drive.

## OUTLINE DRAWING

Unit:mm



### TERMINAL CONNECTOR

- ① : BASE
  - ② : COLLECTOR
  - ③ : EMITTER
- EIAJ : —  
JEDEC : —

Note)  
The dimension without tolerance represent central value.

## MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Rating	Unit	
V <sub>CB0</sub>	Collector to Base voltage	60	V	
V <sub>EB0</sub>	Emitter to Base voltage	7	V	
V <sub>CE0</sub>	Collector to Emitter voltage	60	V	
I <sub>CM</sub>	Peak collector current	5	A	
I <sub>c</sub>	Collector current	3	A	
P <sub>c</sub>	Collector dissipation	(Ta=25°C)	2	W
		(Tc=25°C)	15	W
T <sub>j</sub>	Junction temperature	+150	°C	
T <sub>stg</sub>	Storage temperature	-55 to +150	°C	

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>(BR)CBO</sub>	C to B break down voltage	I <sub>c</sub> = 100 μA	60			V
V <sub>(BR)EBO</sub>	E to B break down voltage	I <sub>E</sub> = 100 μA, I <sub>c</sub> = 0	7			V
V <sub>(BR)CEO</sub>	C to E break down voltage	I <sub>c</sub> = 1 mA, R <sub>BE</sub> = ∞	60			V
I <sub>CBO</sub>	Collector cut off current	V <sub>CB</sub> = 50V, I <sub>E</sub> = 0			1	μA
I <sub>EBO</sub>	Emitter cut off current	V <sub>EB</sub> = 6V, I <sub>c</sub> = 0			1	μA
h <sub>FE</sub> *	DC forward current gain	V <sub>CE</sub> = 5V, I <sub>c</sub> = 500mA	250		800	—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>c</sub> = 2A, I <sub>B</sub> = 0.2A			0.5	V
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> = 6V, I <sub>E</sub> = -10mA		100		MHz

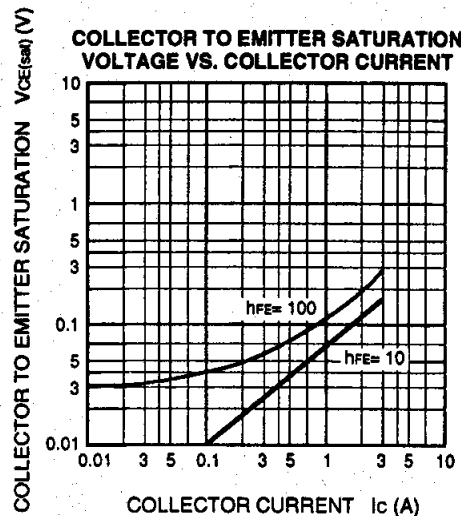
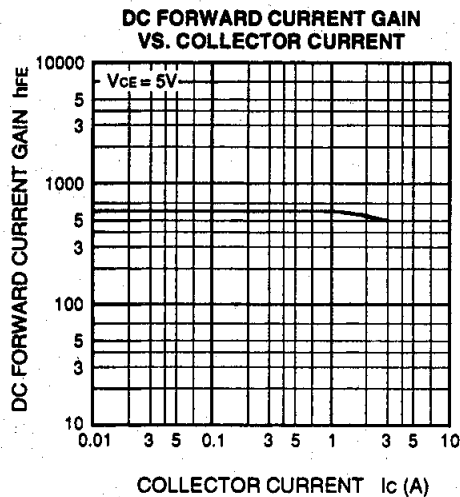
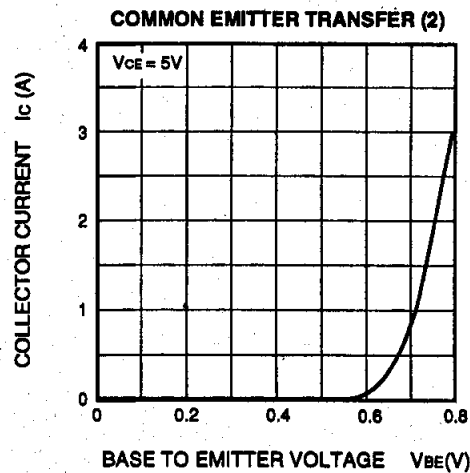
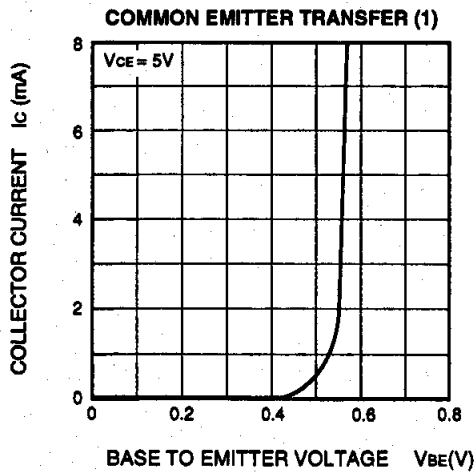
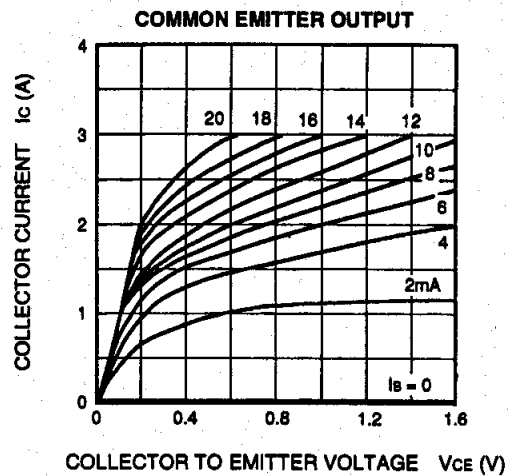
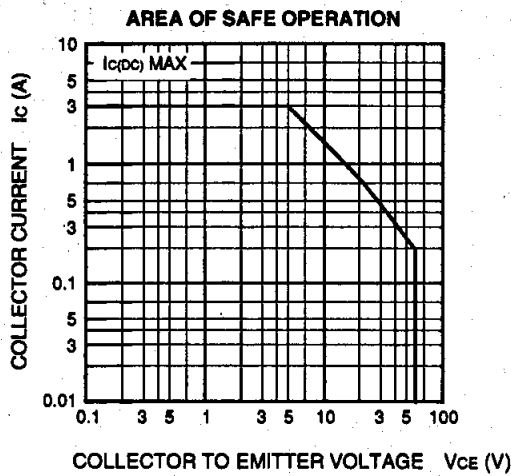
\* : It shows h<sub>FE</sub> classification in right table.

Item	F	G
h <sub>FE</sub>	250 to 500	400 to 800

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SILICON NPN EPITAXIAL PLANAR TYPE

TYPICAL CHARACTERISTICS



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 **ISAHAYA ELECTRONICS CORPORATION**

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