

## Silicon NPN Power Transistors

## 2SD2089

## DESCRIPTION

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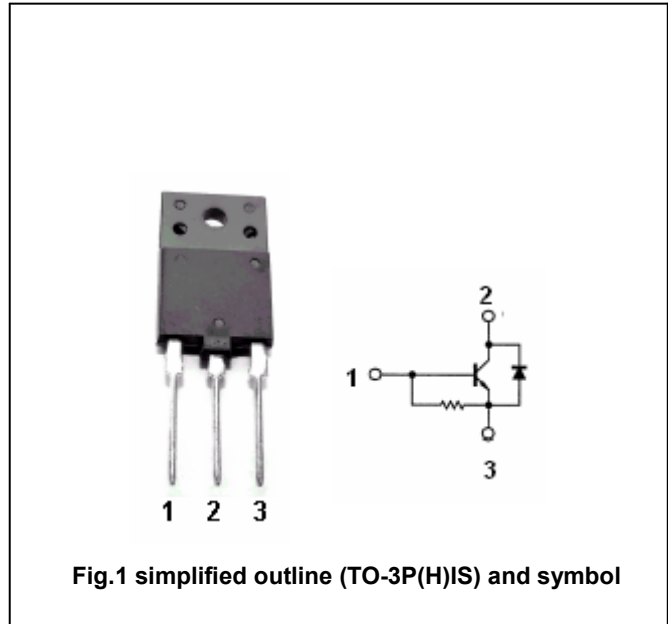
- With TO-3P(H)IS package
- Built-in damper diode
- High voltage ,high speed
- Low collector saturation voltage

## APPLICATIONS

- Small screen color TV horizontal output applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1500	V
$V_{CEO}$	Collector-emitter voltage	Open base	600	
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		3.5	A
$I_B$	Base current		1	A
$P_C$	Collector power dissipation	$T_a=25^\circ\text{C}$	3.5	W
		$T_c=25^\circ\text{C}$	40	
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =200mA, I <sub>C</sub> =0	5			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.2A; I <sub>B</sub> =0.7A		0.3	1.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2.2A; I <sub>B</sub> =0.7A		0.85	1.0	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =500V; I <sub>E</sub> =0			10	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V	9		18	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.1A; V <sub>CE</sub> =10V		3		MHz
C <sub>OB</sub>	Collector output capacitance	I <sub>E</sub> =0; V <sub>CB</sub> =10V; f=1MHz		95		pF
V <sub>F</sub>	Diode forward voltage	I <sub>F</sub> =2.2A		1.2	1.5	V
t <sub>f</sub>	Fall time	I <sub>CP</sub> =2.2A; I <sub>B1(end)</sub> =0.7A		0.2	0.5	μs

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PACKAGE OUTLINE

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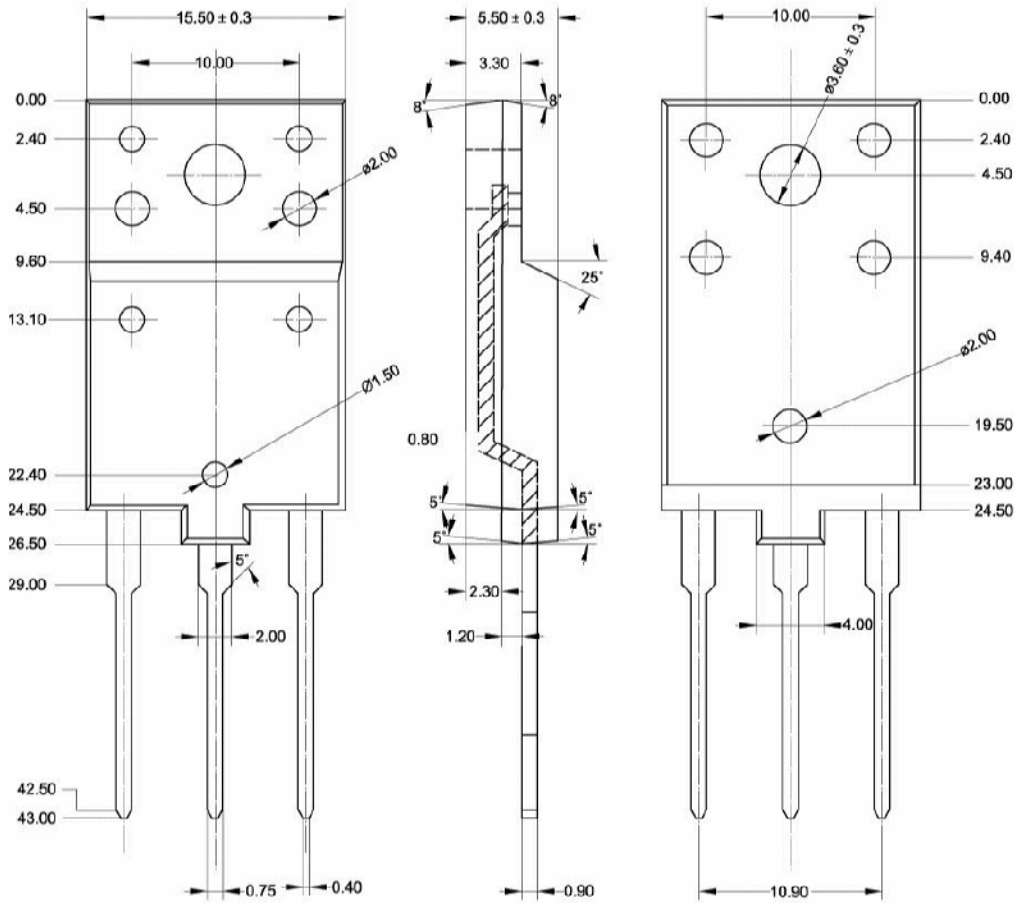


Fig.2 Outline dimensions (unindicated tolerance:  $\pm 0.15$  mm)