

# 2SD2051 (Preliminary)

## Silicon NPN Epitaxial Planar Darlington Type

AF Amplifier

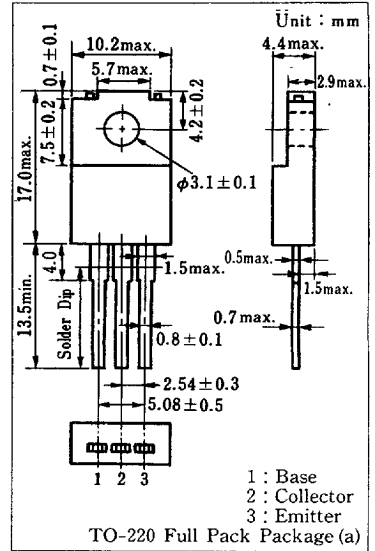
### Features

- High DC current gain ( $h_{FE}$ )
- Zener diode built-in

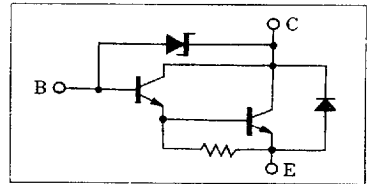
### Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Value	Unit	
Collector-base voltage	$V_{CBO}$	$60 \pm 10$	V	
Collector-emitter voltage	$V_{CEO}$	$60 \pm 10$	V	
Emitter-base voltage	$V_{EBO}$	5	V	
Collector current	$I_C$	1.6	A	
Peak collector current	$I_{CP}$	2.5	A	
Collector power dissipation	$P_C$	$T_c=25^\circ\text{C}$	12	W
		$T_a=25^\circ\text{C}$	2.0	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	$-55 \sim +150$	$^\circ\text{C}$	

### Package Dimensions



### Inner Circuit



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

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB}=25\text{V}, I_E=0$			1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			1	$\mu\text{A}$
Collector-base voltage	$V_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	50		70	V
Collector-emitter voltage	$V_{CEO}$	$I_C=1\text{mA}, I_B=0$	50		70	V
Emitter-base voltage	$V_{EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
DC current gain	$h_{FE}^*$	$V_{CE}=10\text{V}, I_C=1.0\text{A}$	4000		40000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1.0\text{A}, I_B=1.0\text{mA}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1.0\text{A}, I_B=1.0\text{mA}$			2.2	V

### \* $h_{FE}$ Classifications

Class	Q	R	S
$h_{FE}$	4000~10000	8000~20000	16000~40000

Panasonic

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