

## Silicon NPN Power Transistors

## 2SD1406

## DESCRIPTION

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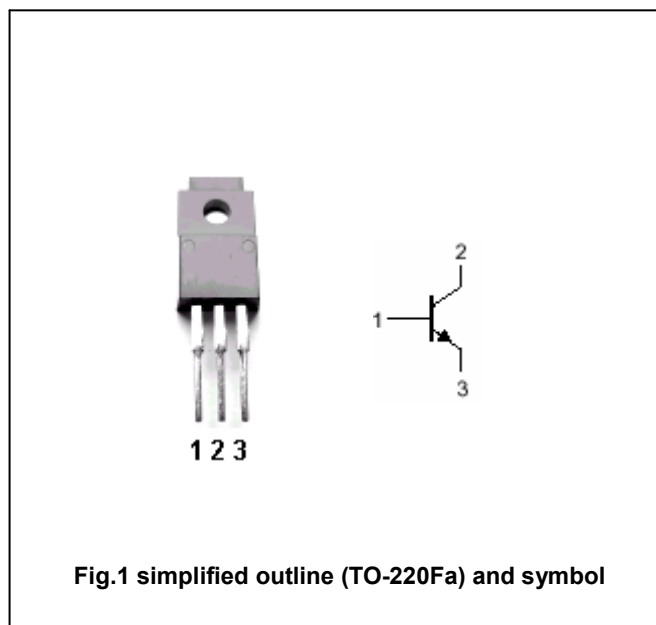
- With TO-220Fa package
- Collector power dissipation  
:  $P_C=25W@T_C=25^\circ$
- Low collector saturation voltage
- Complement to type 2SB1015

## APPLICATIONS

- For audio frequency power amplifier applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings( $T_a=25^\circ$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	60	V
$V_{CEO}$	Collector -emitter voltage	Open base	60	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		3	A
$I_B$	Base current		0.5	A
$P_C$	Collector power dissipation	$T_a=25^\circ$	2.0	W
		$T_C=25^\circ$	25	
$T_j$	Junction temperature		150	$^\circ$
$T_{stg}$	Storage temperature		-55~150	$^\circ$

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=50mA; I_B=0$	60			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=3A; I_B=0.3A$		0.25	1.0	V
$V_{BE}$	Base-emitter voltage	$I_C=0.5A; V_{CE}=5V$		0.7	1.0	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=60V; I_E=0$			100	$\mu A$
$I_{EBO}$	Emitter cut-off current	$V_{EB}=7V; I_C=0$			100	$\mu A$
$h_{FE-1}$	DC current gain	$I_C=0.5A; V_{CE}=5V$	60		300	
$h_{FE-2}$	DC current gain	$I_C=3A; V_{CE}=5V$	20			
$f_T$	Transition frequency	$I_C=0.5A; V_{CE}=5V$		3		MHz
$C_{OB}$	Collector output capacitance	$I_E=0; f=1MHz; V_{CB}=10V$		70		pF

## Switching times

$t_{on}$	Trun-on time	$R_L=15\Omega; V_{CC}=30V$ $I_{B1}=-I_{B2}=0.2A$		0.8		$\mu s$
$t_s$	Storage time			1.5		$\mu s$
$t_f$	Fall time			0.8		$\mu s$

◆  $h_{FE-1}$  Classifications

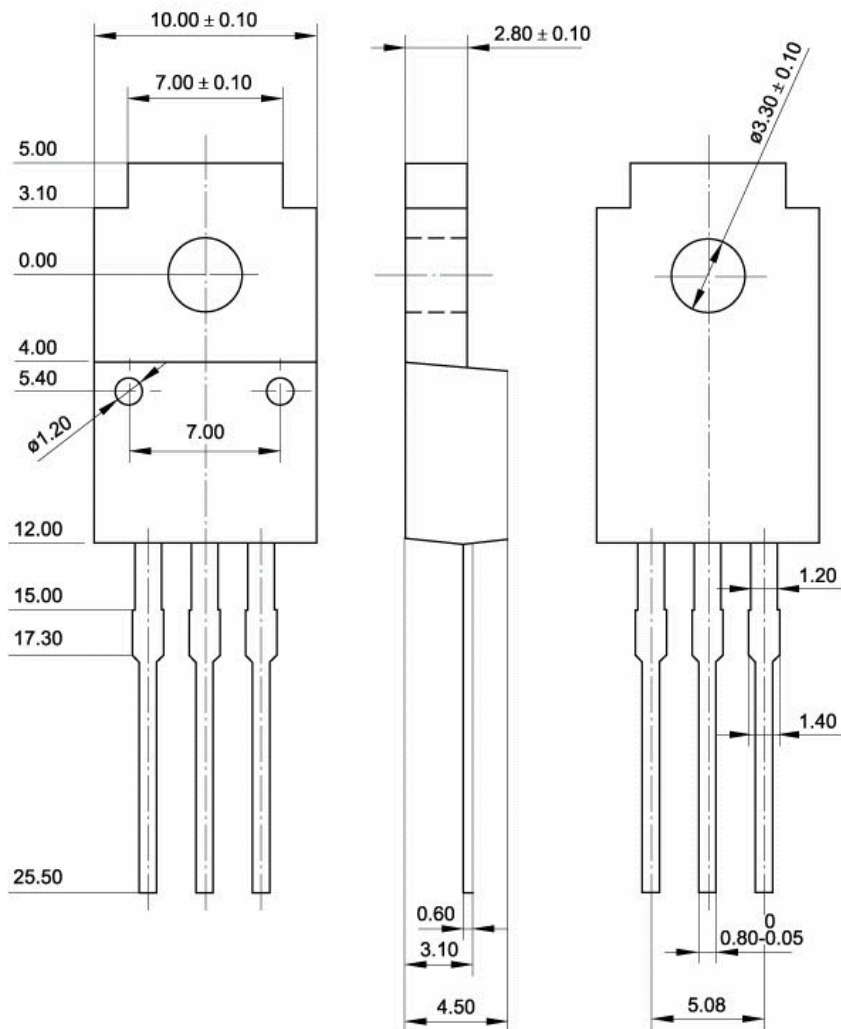
O	Y	GR
60-120	100-200	150-300

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## PACKAGE OUTLINE

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

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