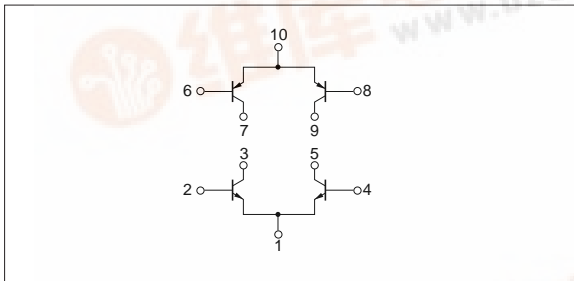


## Absolute maximum ratings

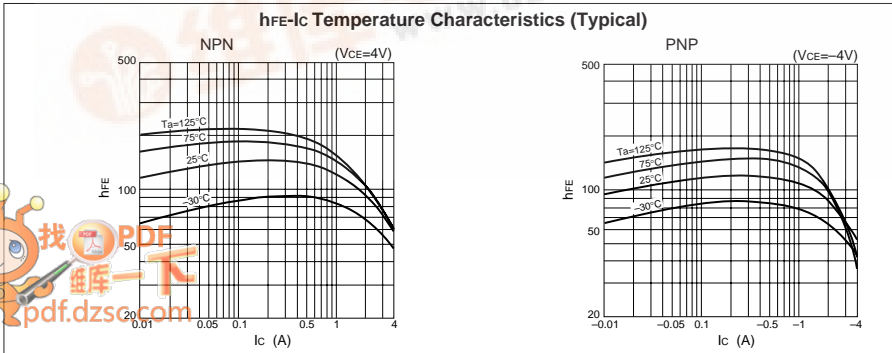
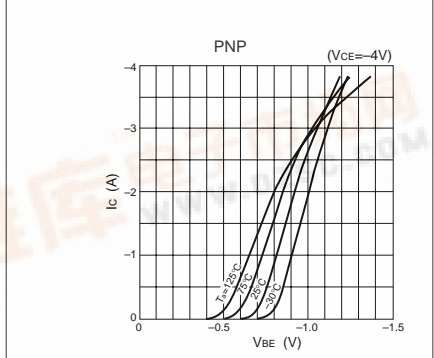
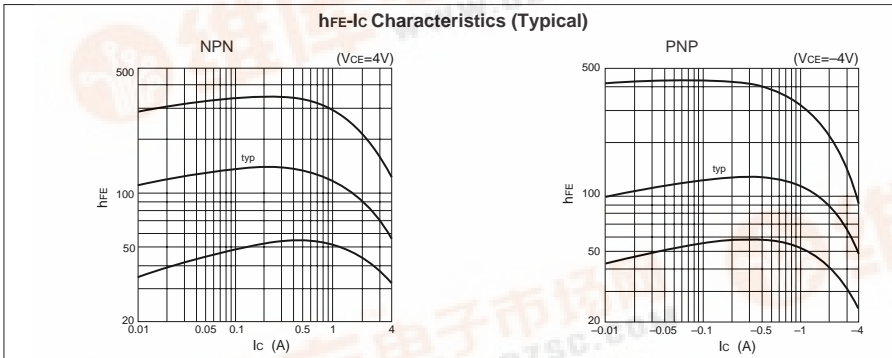
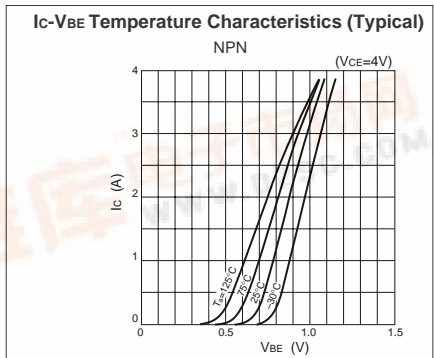
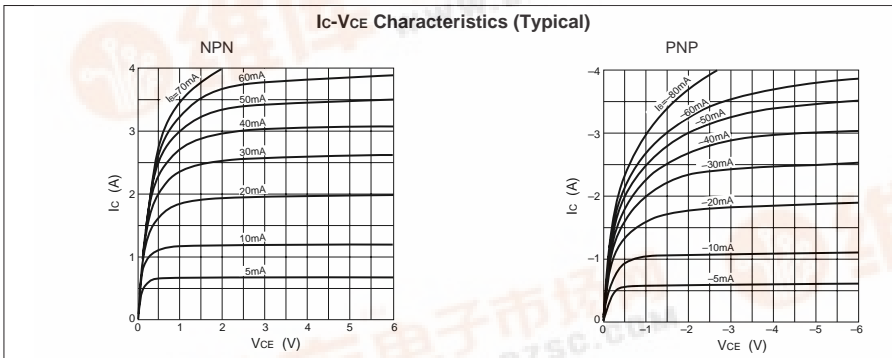
( $T_a=25^\circ\text{C}$ )

Symbol	Ratings		Unit
	NPN	PNP	
$V_{CBO}$	60	-60	V
$V_{CEO}$	60	-60	V
$V_{EBO}$	6	-6	V
$I_c$	3	-3	A
$I_{CP}$	6 (PW $\leq$ 10ms, Du $\leq$ 50%)	-6 (PW $\leq$ 10ms, Du $\leq$ 50%)	A
$P_T$	4 ( $T_a=25^\circ\text{C}$ )		W
	20 ( $T_c=25^\circ\text{C}$ )		
$T_j$	150		$^\circ\text{C}$
$T_{stg}$	-40 to +150		$^\circ\text{C}$

## Equivalent circuit diagram



## Characteristic curves



# STA431A

## Electrical characteristics

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

Symbol	NPN					PNP				
	Specification			Unit	Conditions	Specification			Unit	Conditions
	min	typ	max			min	typ	max		
$I_{CBO}$			100	$\mu\text{A}$	$V_{CB}=60\text{V}$			-100	$\mu\text{A}$	$V_{CB}=-60\text{V}$
$I_{EBO}$			100	$\mu\text{A}$	$V_{EB}=6\text{V}$			-100	$\mu\text{A}$	$V_{EB}=-6\text{V}$
$V_{CEO}$	60			V	$I_C=25\text{mA}$	-60			V	$I_C=-25\text{mA}$
$h_{FE}$	40				$V_{CE}=4\text{V}, I_C=1\text{A}$	40				$V_{CE}=-4\text{V}, I_C=-1\text{A}$
$V_{CE(sat)}$			1.0	V	$I_C=2\text{A}, I_B=0.2\text{A}$			-1.0	V	$I_C=-2\text{A}, I_B=-0.2\text{A}$
$t_{on}$		0.2		$\mu\text{s}$	$V_{CC}\doteq 12\text{V},$		0.25		$\mu\text{s}$	$V_{CC}\doteq -12\text{V},$
$t_{stg}$		1.0		$\mu\text{s}$	$I_C=2\text{A},$		0.75		$\mu\text{s}$	$I_C=-2\text{A},$
$t_f$		0.3		$\mu\text{s}$	$I_{B1}=-I_{B2}=0.2\text{A}$		0.25		$\mu\text{s}$	$I_{B1}=-I_{B2}=-0.2\text{A}$

## Characteristic curves

