

## Silicon PNP Power Transistors

2SA1451

## DESCRIPTION

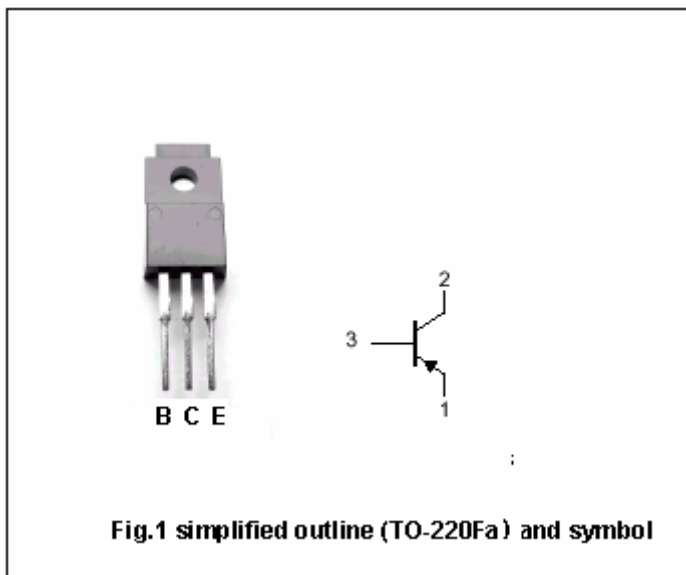
- With TO-220Fa package
- Low collector saturation voltage
- High speed switching time
- Complement to type 2SC3709

## APPLICATIONS

- High current switching applications

## PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base



## Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	-60	V
$V_{CEO}$	Collector-emitter voltage	Open base	-50	V
$V_{EBO}$	Emitter-base voltage	Open collector	-6	V
$I_C$	Collector current		-12	A
$I_B$	Base current		-2	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	30	W
$T_j$	Junction temperature		150	°C
$T_{stg}$	Storage temperature		-55~150	°C

Silicon PNP Power Transistors

2SA1451

**CHARACTERISTICS**

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=-50mA ; I_B=0$	-50			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=-6A ; I_B=-0.3A$		-0.15	-0.4	V
$V_{BEsat}$	Base-emitter saturation voltage	$I_C=-6A ; I_B=-0.3A$		-0.9	-1.2	V
$I_{CBO}$	Collector cut-off current	$V_{CB}=-60V ; I_E=0$			-10	$\mu A$
$I_{EBO}$	Emitter cut-off current	$V_{EB}=-6V ; I_C=0$			-10	$\mu A$
$h_{FE-1}$	DC current gain	$I_C=-1A ; V_{CE}=-1V$	70		240	
$h_{FE-2}$	DC current gain	$I_C=-6A ; V_{CE}=-1V$	40			
$f_T$	Transition frequency	$I_C=-1A ; V_{CE}=-5V$		70		MHz
$C_{ob}$	Collector output capacitance	$I_E=0 ; V_{CE}=-10V ; f=1MHz$		320		pF

Switching times

$t_{on}$	Turn-on time	$I_{B1}=-I_{B2}=-0.3A$ $V_{CC}\approx-30V ; R_L=5\Omega$		0.3		$\mu s$
$t_s$	Storage time			1.0		$\mu s$
$t_f$	Fall time			0.5		$\mu s$

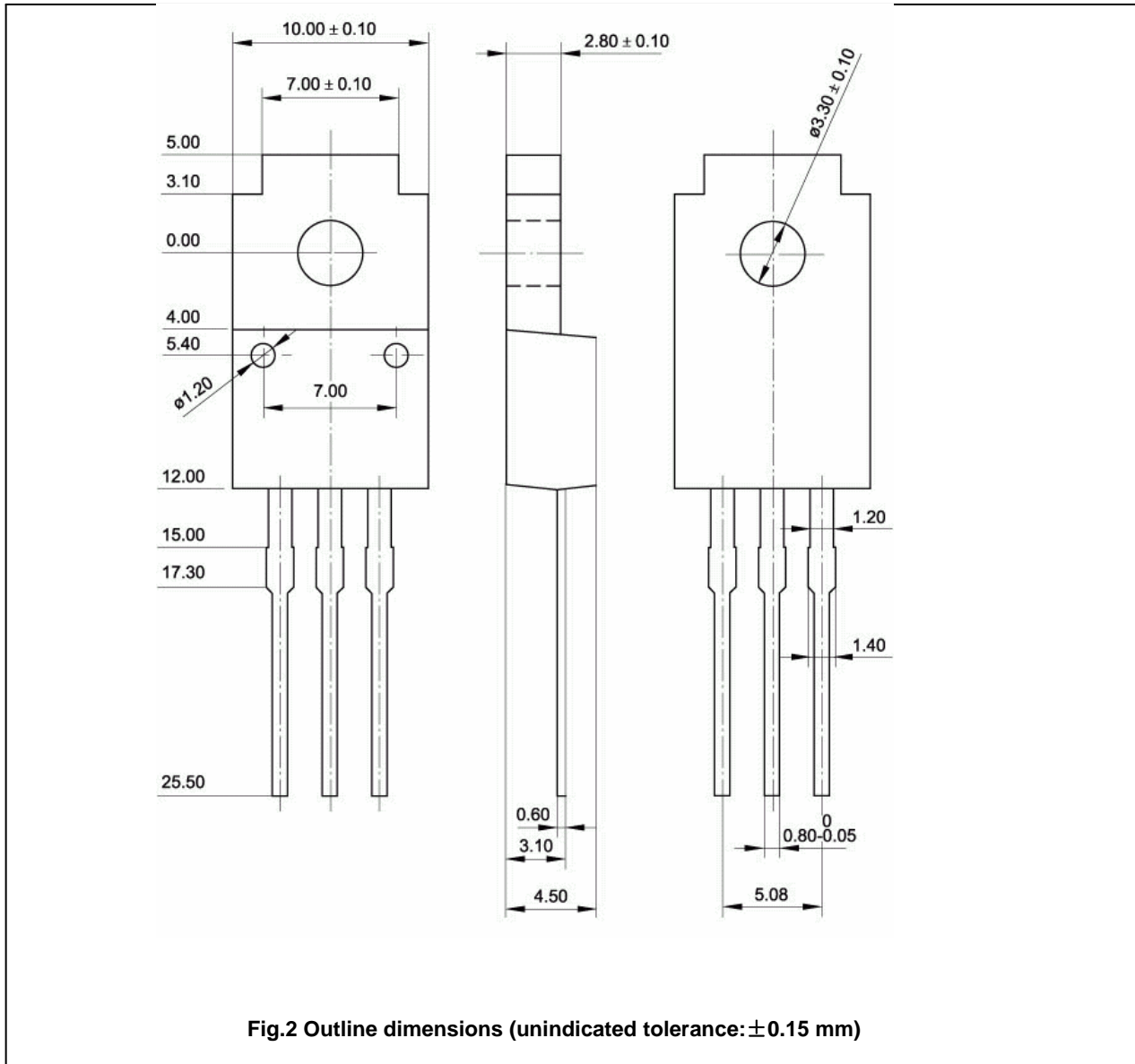
◆  **$h_{FE-1}$  Classifications**

O	Y
70-140	120-240

Silicon PNP Power Transistors

2SA1451

PACKAGE OUTLINE



Silicon PNP Power Transistors

2SA1451

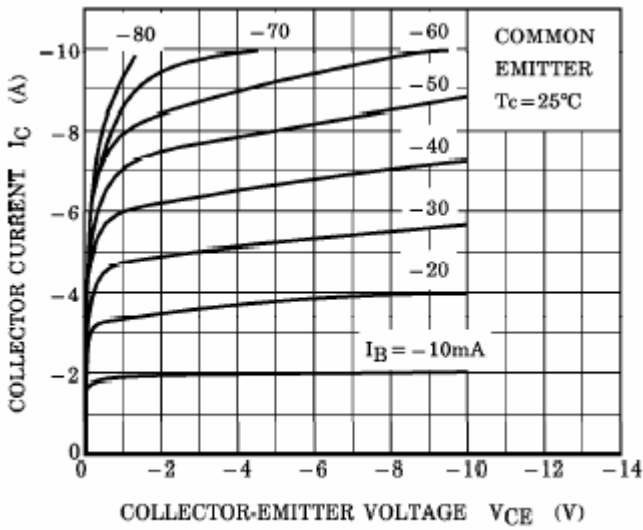


Fig.3 Static Characteristic

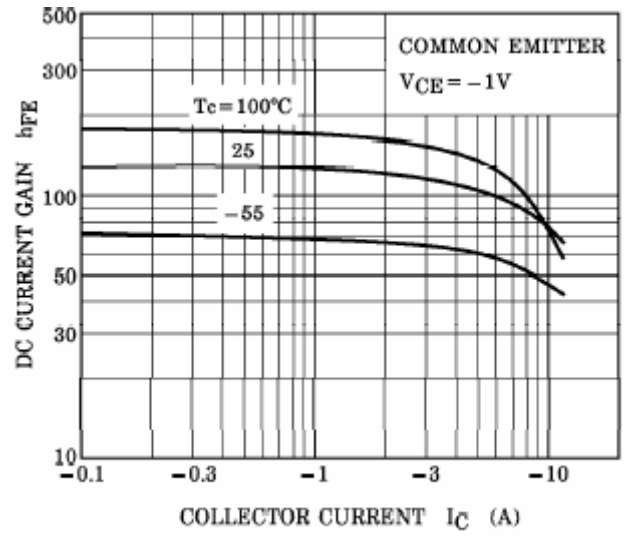


Fig.4 DC current Gain

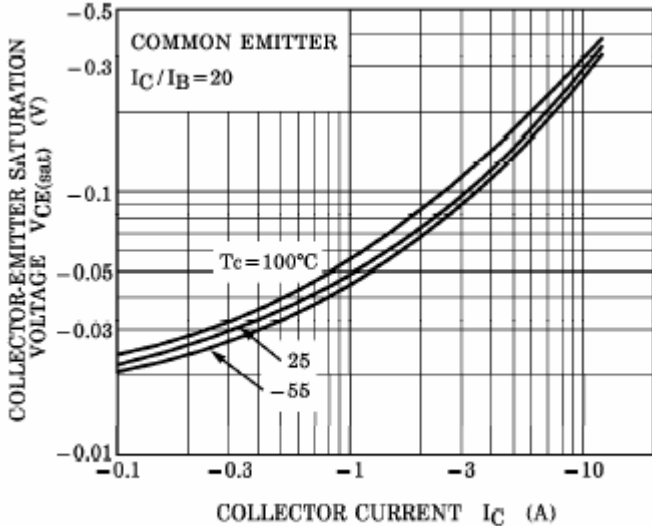


Fig.5 Collector-Emitter Saturation Voltage

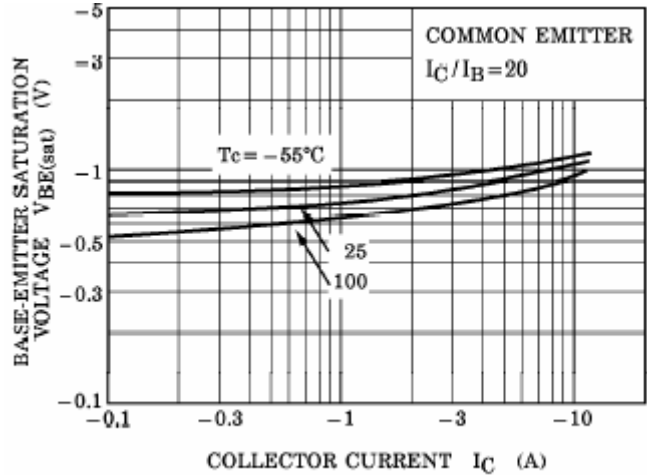


Fig.6 Base-Emitter Saturation Voltage

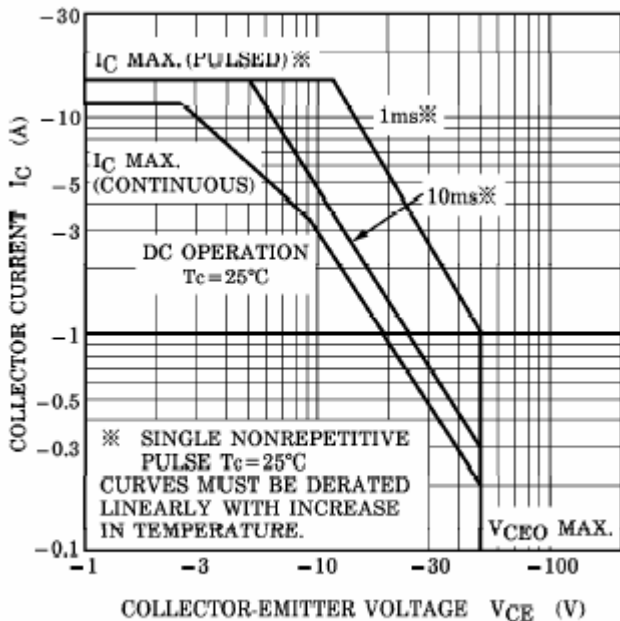


Fig.7 Safe Operating Area