

Silicon NPN Power Transistors

2SD553

DESCRIPTION

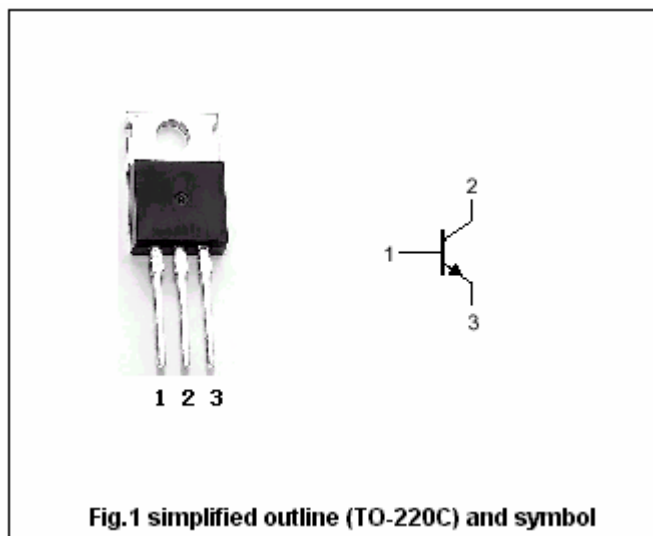
- With TO-220C package
- Complement to type 2SB553
- Low collector saturation voltage

APPLICATIONS

- High current switching applications
- Power amplifier applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	70	V
V_{CEO}	Collector-emitter voltage	Open base	50	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		7	A
I_B	Base current		1	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	40	W
		$T_a=25^\circ\text{C}$	1.5	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-50~150	$^\circ\text{C}$

Silicon NPN Power Transistors

2SD553

CHARACTERISTICS

Tj=25℃ 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	$I_C=4A; I_B=0.4A$		0.2	0.4	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=4A; I_B=0.4A$		0.9	1.2	V
I_{CBO}	Collector cut-off current	$V_{CB}=70V; I_E=0$			30	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V; I_C=0$			50	μA
h_{FE-1}	DC current gain	$I_C=1A; V_{CE}=1V$	70		240	
h_{FE-2}	DC current gain	$I_C=4A; V_{CE}=1V$	30			
C_{OB}	Output capacitance	$I_E=0; V_{CB}=10V; f=1MHz$		250		pF
f_T	Transition frequency	$I_C=1A; V_{CE}=4V$		10		MHz

Switching times

t_{on}	Turn-on time	$I_{B1}=-I_{B2}=0.3A$ $R_L=10\Omega; V_{CC}=30V$		0.2		μs
t_s	Storage time			2.5		μs
t_f	Fall time			0.5		μs

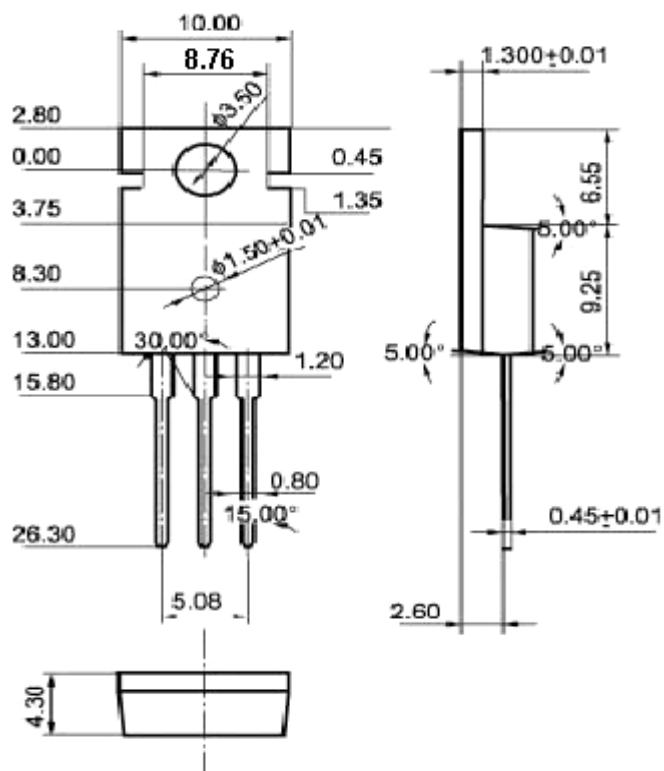
◆ h_{FE-1} Classifications

O	Y
70-140	120-240

Silicon NPN Power Transistors

2SD553

PACKAGE OUTLINE

Fig.2 Outline dimensions (unindicated tolerance: $\pm 0.10\text{mm}$)

Silicon NPN Power Transistors

2SD553

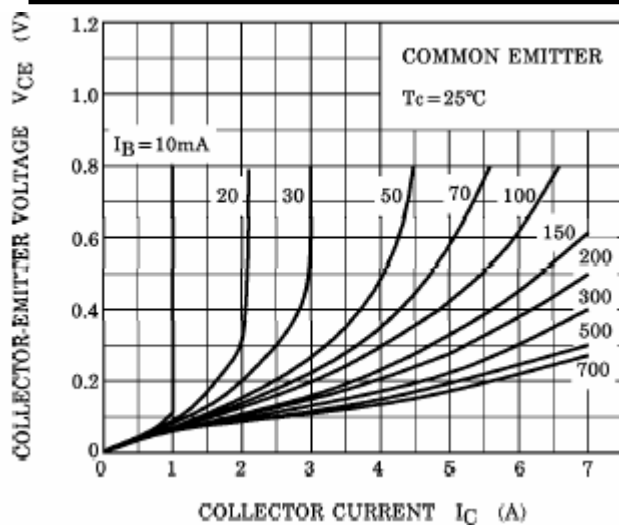


Fig.3 Static Characteristic

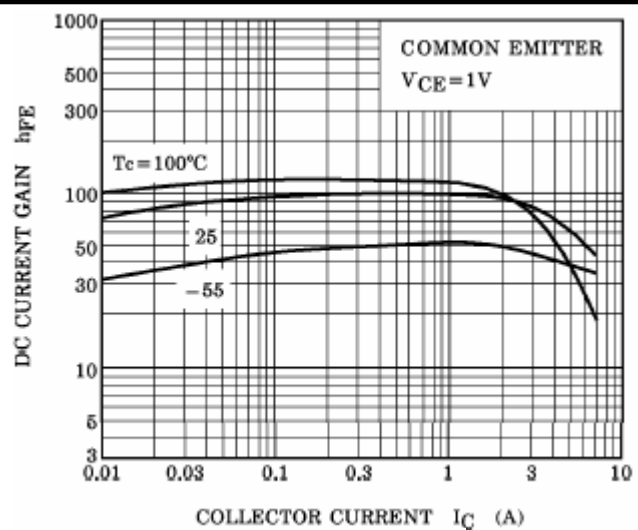


Fig.4 DC current Gain

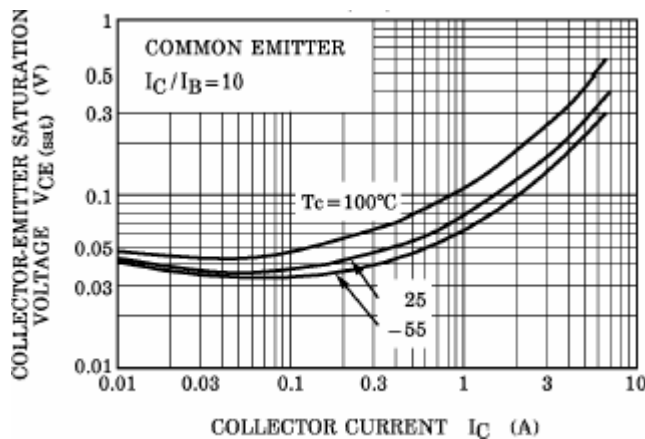


Fig.5 Collector-Emitter Saturation Voltage

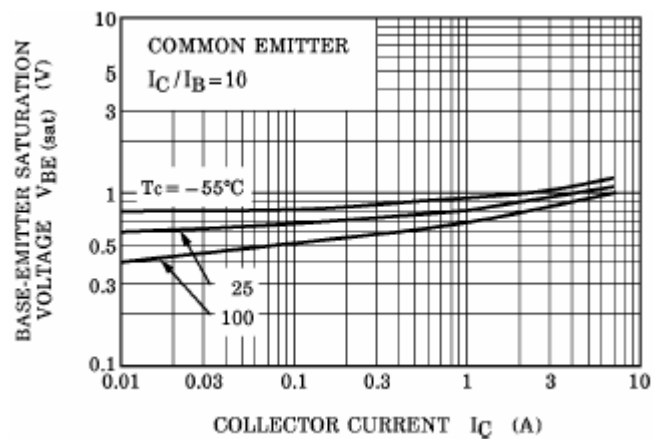


Fig.6 Base-Emitter Saturation Voltage

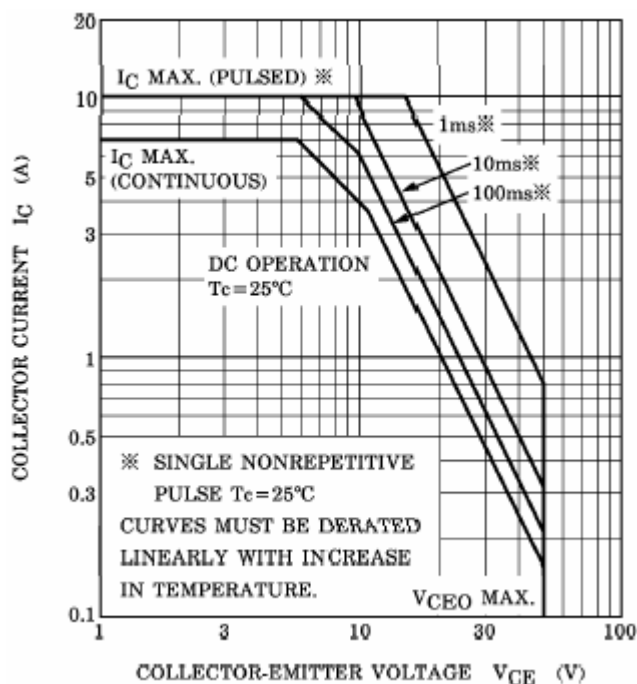


Fig.7 Safe Operating Area