



# 2N5551

## NPN SILICON TRANSISTOR

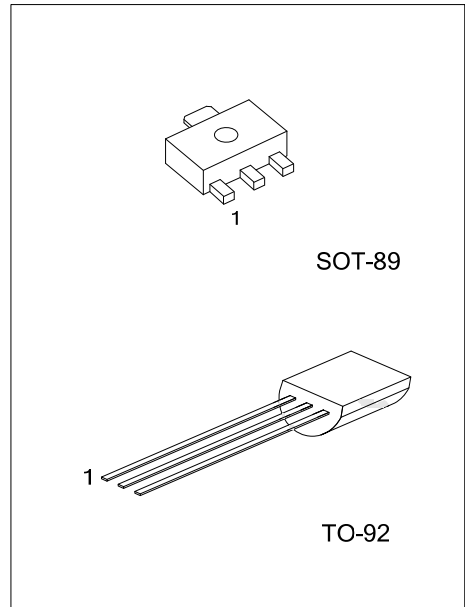
### HIGH VOLTAGE SWITCHING TRANSISTOR

■ FEATURES

- \* High collector-emitter voltage:  
V<sub>CEO</sub>=160V
- \* High current gain

■ APPLICATIONS

- \* Telephone switching circuit
- \* Amplifier



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	2N5551G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2N5551L-x-T92-B	2N5551G-x-T92-B	TO-92	E	B	C	Tape Box
2N5551L-x-T92-K	2N5551G-x-T92-K	TO-92	E	B	C	Bulk
2N5551L-x-T92-A-B	2N5551G-x-T92-A-B	TO-92	E	C	B	Tape Box
2N5551L-x-T92-A-K	2N5551G-x-T92-A-K	TO-92	E	C	B	Bulk

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>2N5551L-x-T92-A-B</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel          (2) refer to Pin Assignment          (3) AB3: SOT-89, T92: TO-92          (4) x: refer to Classification of h<sub>FE2</sub>          (5) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING

SOT-89	TO-92

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■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	180	V
Collector-Emitter Voltage	$V_{CEO}$	160	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Dissipation	TO-92	$P_C$	625
	SOT-89		500
Collector Current	$I_C$	600	mA
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	180			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1\text{mA}, I_B=0$	160			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=120\text{V}, I_E=0$			50	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{BE}=4\text{V}, I_C=0$			50	nA
DC Current Gain(Note)	$h_{FE1}$	$V_{CE}=5\text{V}, I_C=1\text{mA}$	80			
	$h_{FE2}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	80	160	400	
	$h_{FE3}$	$V_{CE}=5\text{V}, I_C=50\text{mA}$	80			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.15	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.2	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			1	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			1	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100		300	MHz
Output Capacitance	$C_{OB}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			6.0	pF
Noise Figure	NF	$I_C=0.25\text{mA}, V_{CE}=5\text{V}$ $R_S=1\text{k}\Omega, f=10\text{Hz} \sim 15.7\text{kHz}$			8	dB

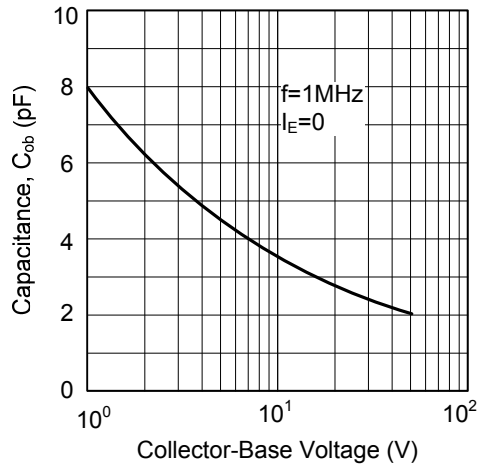
Note: Pulse test:  $PW < 300\mu\text{s}$ , Duty cycle  $< 2\%$

■ CLASSIFICATION OF  $h_{FE2}$

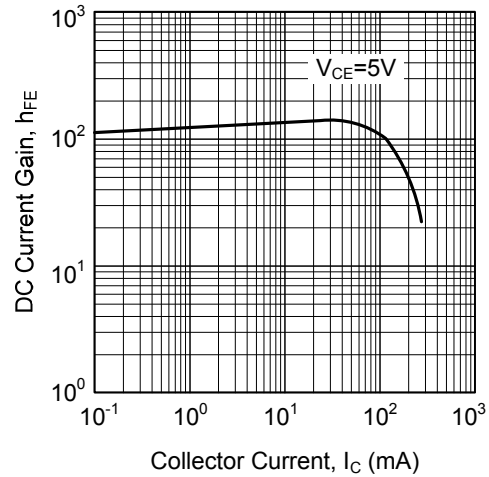
RANK	A	B	C
RANGE	80-170	150-240	200-400

### TYPICAL CHARACTERISTICS

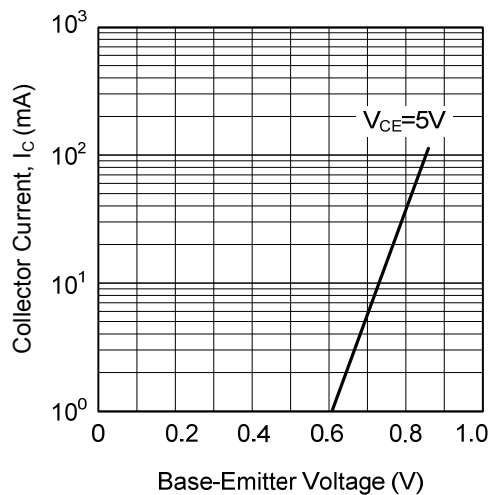
Collector Output Capacitance



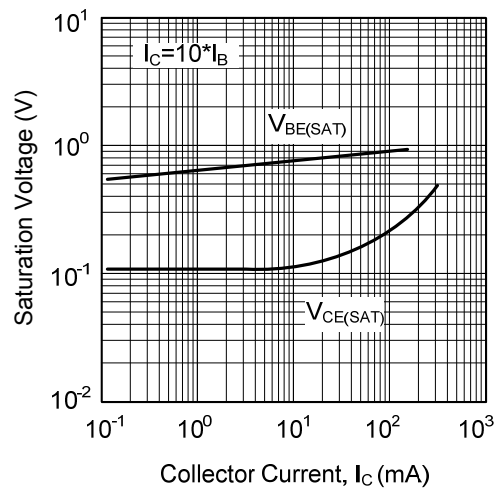
DC Current Gain



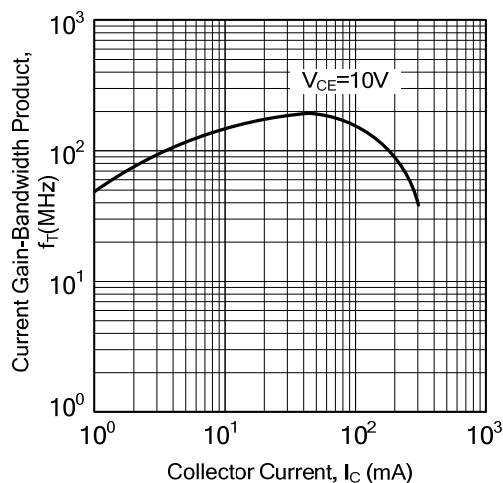
Base-Emitter on Voltage



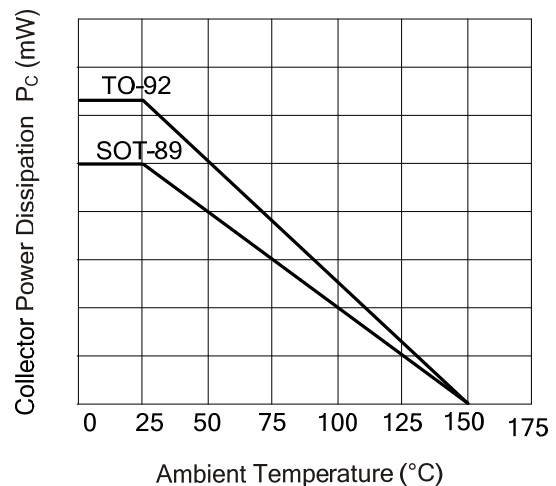
Saturation Voltage



Current Gain-Bandwidth Product



$P_C - T_A$



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