



## USS5550

## NPN SILICON TRANSISTOR

### NPN HIGH-VOLTAGE TRANSISTORS

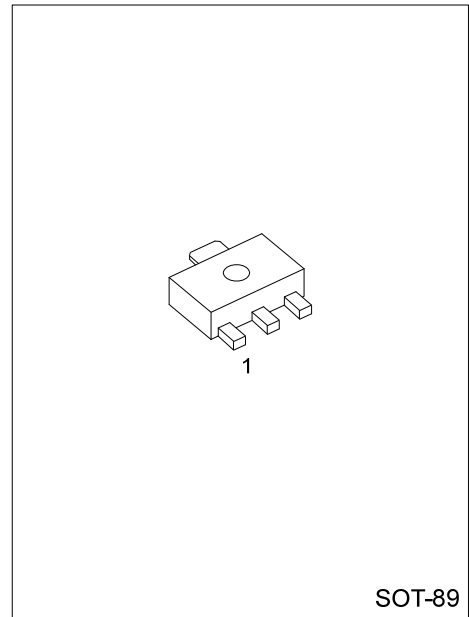
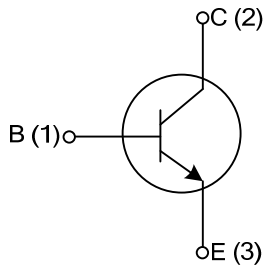
#### DESCRIPTION

The UTC **USS5550** is a NPN transistor which features low current and high voltage. It is generally suitable for switching and amplification in high voltage applications such as telephone.

#### FEATURES

- \* Low Current: 300mA (MAX.)
- \* High Voltage: 160V (MAX.)

#### SYMBOL



SOT-89

#### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
USS5550G-AB3-R	SOT-89	B	C	E	Tape Reel

USS5550G-AB3-R (1) Packing Type (2) Package Type (3) Halogen Free	(1) R: Tape Reel (2) AB3: SOT-89 (3) G: Halogen Free
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### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector- Base Voltage	$V_{CBO}$	160	V
Collector-Emitter Voltage	$V_{CEO}$	140	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current (DC)	$I_C$	300	mA
Peak Collector Current	$I_{CM}$	600	mA
Peak Base Current	$I_{BM}$	100	mA
Total Power Dissipation(Note 2)	$T_A \leq 25^\circ\text{C}$ $P_D$	550	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Ambient Operating Temperature	$T_{OPR}$	-40 ~ +150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-65 ~ +150	$^\circ\text{C}$

Notes:1. 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.

2. Transistor mounted on an FR4 printed-circuit board.

### ■ THERMAL DATA

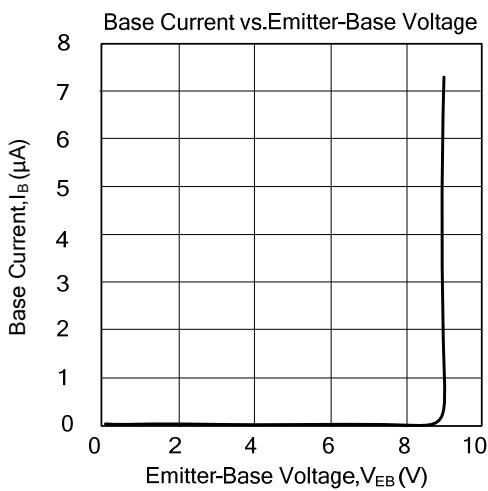
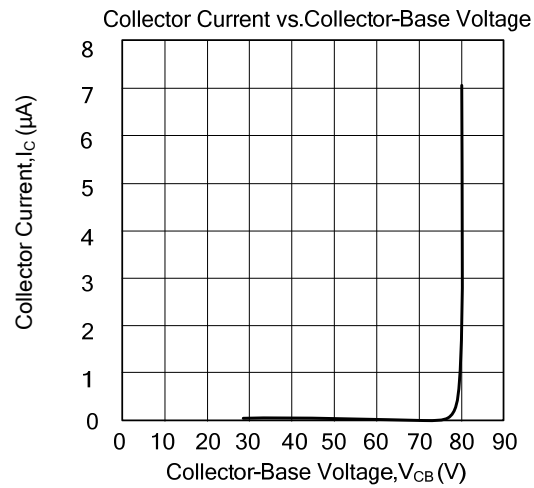
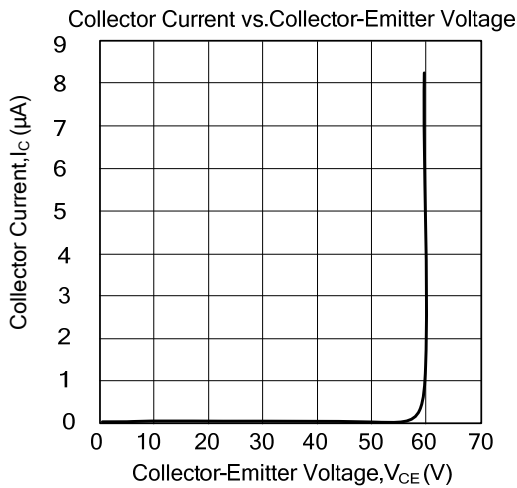
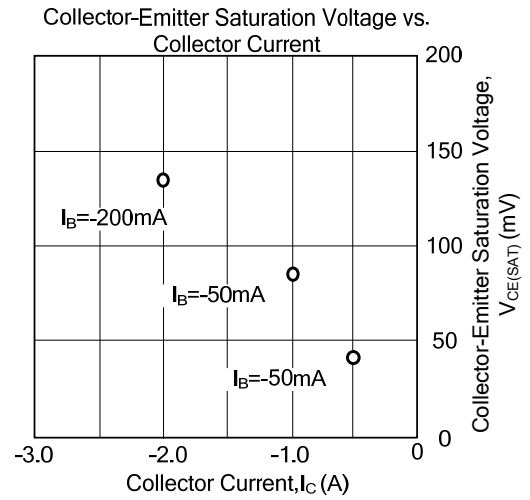
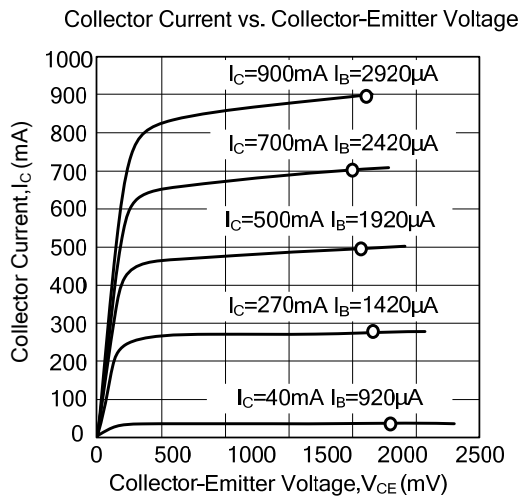
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	180	K/W

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collect - Base Cut-off Current	$I_{CBO}$	$V_{CB}=100\text{V}, I_E=0$			100	nA
		$V_{CB}=100\text{V}, I_E=0, T_A=100^\circ\text{C}$			100	$\mu\text{A}$
Emitter - Base Cut-off Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			50	nA
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}$	$I_C=1\text{mA}$	60		
			$I_C=10\text{mA}$	60		250
			$I_C=50\text{mA}$ (Note)	20		
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			150	mV
	$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5\text{mA}$			250	mV
Base -Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			1	V
	$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5\text{mA}$			1.2	V
Collector Capacitance	$C_C$	$I_E=i_e=0; V_{CB}=10\text{V}; f=1\text{MHz}$			6	pF
Emitter Capacitance	$C_E$	$I_C=i_c=0; V_{EB}=0.5\text{V}; f=1\text{MHz}$			30	pF
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100		300	MHz

Note: Pulse test:  $t_p \leq 300 \mu\text{s}; \delta \leq 0.02$ .

### TYPICAL CHARACTERISTICS



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