



## USS4041PX

PNP EPITAXIAL SILICON TRANSISTOR

5A, 60V PNP LOW  $V_{CE(SAT)}$  TRANSISTOR

### DESCRIPTION

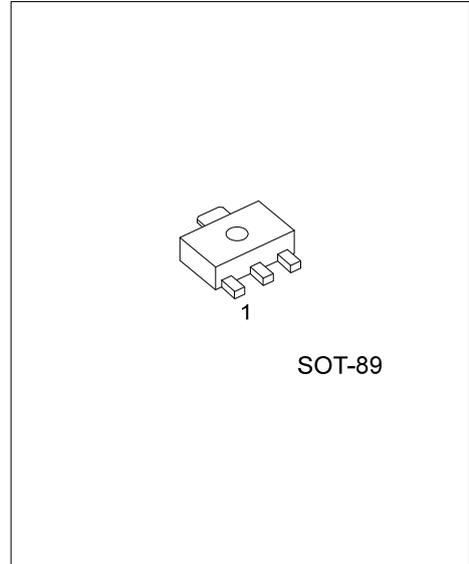
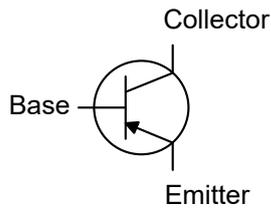
The **USS4041PX** is PNP low  $V_{CE(SAT)}$  transistor in a medium power and flat lead SOT-89 Surface-Mounted Device (SMD) plastic package.

NPN complement: USS4041NX.

### FEATURES

- \* Very low collector-emitter saturation voltage  $V_{CE(SAT)}$
- \* High collector current capability  $I_C$  and  $I_{CM}$
- \* High collector current gain ( $h_{FE}$ ) at high  $I_C$
- \* High energy efficiency due to less heat generation

### EQUIVALENT CIRCUIT



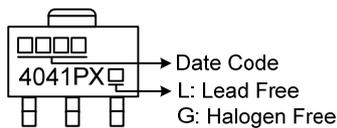
### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS4041PXL-AB3-R	USS4041PXG-AB3-R	SOT-89	B	C	E	Tape Reel

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

<p>USS4041PXG-AB3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) AB3: SOT-89 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V <sub>CB0</sub>	-60	V
Collector to Emitter Voltage	V <sub>CE0</sub>	-60	V
Emitter to Base Voltage	V <sub>EBO</sub>	-5	V
Base Current	I <sub>B</sub>	-1	A
Collector Current	I <sub>C</sub>	-5	A
Peak Collector Current (t <sub>p</sub> ≤ 1ms)	I <sub>CM</sub>	-15	A
Collector Dissipation	P <sub>C</sub>	1.5 (Note 2)	W
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°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. Device mounted on an FR4 PCB, 4-layer, tin-plated, mounting pad for collector 1 cm<sup>2</sup>.

■ THERMAL DATA

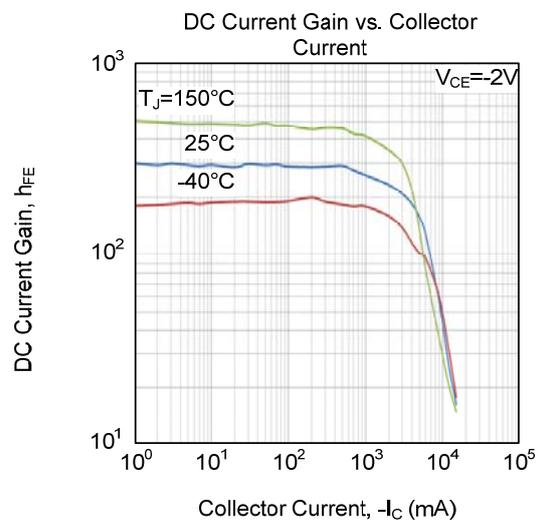
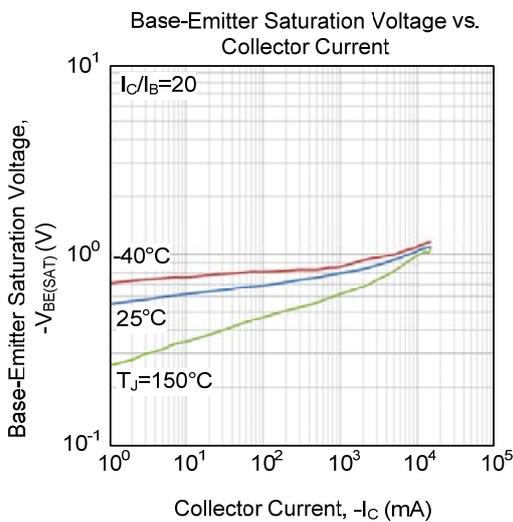
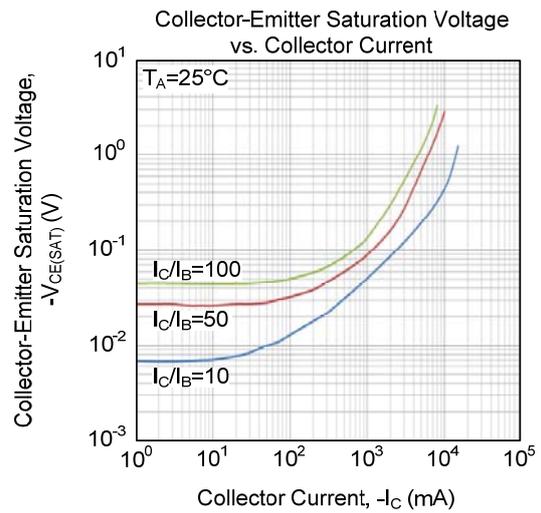
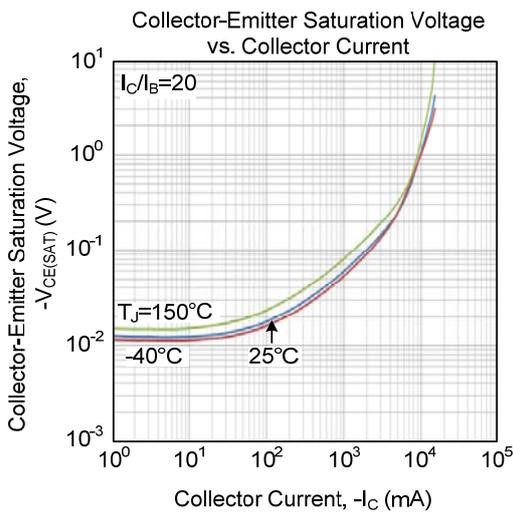
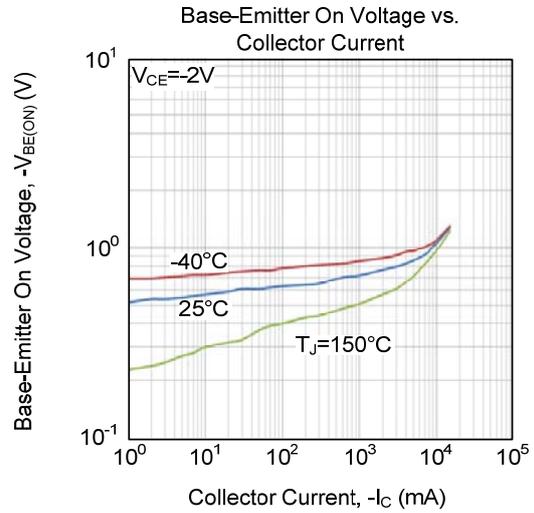
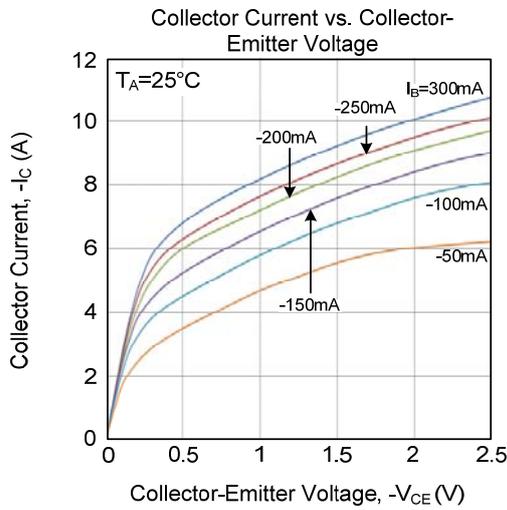
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ <sub>JA</sub>	83 (Note)	°C/W

Note: Device mounted on an FR4 PCB, 4-layer, tin-plated, mounting pad for collector 1 cm<sup>2</sup>.

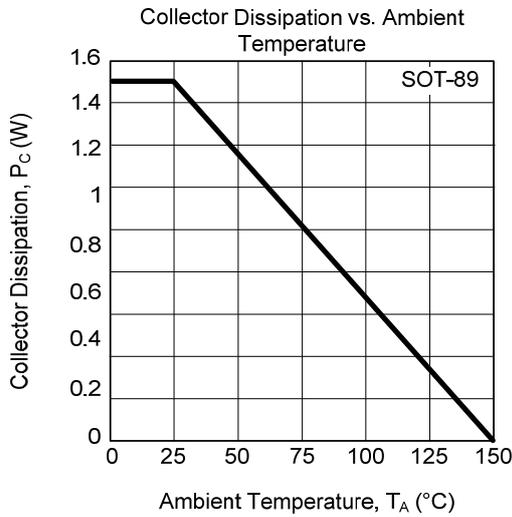
■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	I <sub>C</sub> =-100μA, I <sub>E</sub> =0A	-60			V
Collector-Emitter Breakdown Voltage	BV <sub>CE0</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0A	-60			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =-100μA, I <sub>C</sub> =0A	-5			V
Collector-Base Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-60V, I <sub>E</sub> =0A, T <sub>A</sub> =25°C			-100	nA
Collector-Emitter Cut-off Current	I <sub>CES</sub>	V <sub>CE</sub> =-48V, V <sub>BE</sub> =0V			-100	nA
Emitter-Base Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0A			-100	nA
Base-Emitter On Voltage (Note)	V <sub>BE(ON)</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-2A			-0.85	V
Base-Emitter Saturation Voltage (Note)	V <sub>BE(SAT)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA			-0.9	V
		I <sub>C</sub> =-4A, I <sub>B</sub> =-400mA			-1.05	V
DC Current Transfer Ratio (Note)	h <sub>FE</sub>	I <sub>C</sub> =-0.5A, V <sub>CE</sub> =-2V	200			
		I <sub>C</sub> =-1A, V <sub>CE</sub> =-2V	180			
		I <sub>C</sub> =-1A, V <sub>CE</sub> =-2V	150			
		I <sub>C</sub> =-4A, V <sub>CE</sub> =-2V	120			
		I <sub>C</sub> =-6A, V <sub>CE</sub> =-2V	80			
Collector-Emitter Saturation Voltage (Note)	V <sub>CE(SAT)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-10mA			-180	mV
		I <sub>C</sub> =-1A, I <sub>B</sub> =-50mA			-90	mV
		I <sub>C</sub> =-2A, I <sub>B</sub> =-40mA			-210	mV
		I <sub>C</sub> =-4A, I <sub>B</sub> =-200mA			-300	mV
		I <sub>C</sub> =-4A, I <sub>B</sub> =-400mA			-240	mV
		I <sub>C</sub> =-5A, I <sub>B</sub> =-500mA			-300	mV
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-100mA, f=100MHz		103		MHz

## TYPICAL CHARACTERISTICS



### ■ TYPICAL CHARACTERISTICS(cont.)



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