



USS305PZ

Preliminary

PNP SILICON TRANSISTOR

-4.5A, -80V PNP LOW $V_{CE(SAT)}$ TRANSISTOR

DESCRIPTION

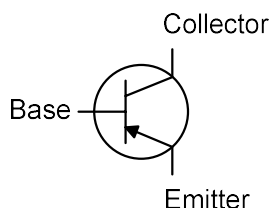
The UTC **USS305PZ** is PNP low $V_{CE(SAT)}$ transistor in a medium power and flat lead SOT-223 Surface-Mounted Device (SMD) plastic package.

NPN complement: USS305NZ.

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



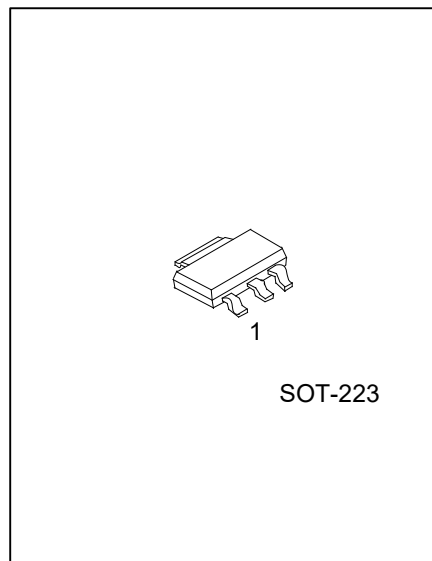
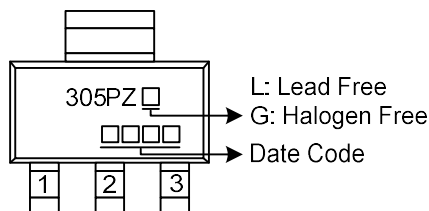
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS305PZL-AA3-R	USS305PZG-AA3-R	SOT-223	B	C	E	Tape Reel

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

USS305PZG-AA3-R	(1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AA3: SOT-223 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-80	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-4.5	A
Peak Collector Current	I_{CM}	-9	A
Power Dissipation	P_C	700	mW
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.

■ **THERMAL DATA**

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	179	$^{\circ}\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ **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}	$I_C=-100\mu\text{A}$, $I_E=0$	-80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=-1\text{mA}$, $I_B=0$	-80			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=-100\mu\text{A}$, $I_C=0$	-5			V
Collector-Base Cut-off Current	I_{CBO}	$V_{CB}=-80\text{V}$, $I_E=0$			-100	nA
Emitter-Base Cut-off Current	I_{EBO}	$V_{EB}=-5\text{V}$, $I_C=0$			-100	nA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-1\text{A}$, $I_B=-100\text{mA}$			-0.9	V
		$I_C=-4\text{A}$, $I_B=-400\text{mA}$			-1.05	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$V_{CE}=-2\text{V}$, $I_C=-2\text{A}$			-0.85	V
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}$, $I_C=-500\text{mA}$	200			
		$V_{CE}=-2\text{V}$, $I_C=-1\text{A}$	150			
		$V_{CE}=-2\text{V}$, $I_C=-2\text{A}$	120			
		$V_{CE}=-2\text{V}$, $I_C=-4\text{A}$	60			
		$V_{CE}=-2\text{V}$, $I_C=-6\text{A}$	30			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-500\text{mA}$, $I_B=-50\text{mA}$			-50	mV
		$I_C=-1\text{A}$, $I_B=-50\text{mA}$			-100	mV
		$I_C=-1\text{A}$, $I_B=-10\text{mA}$			-260	mV
		$I_C=-2\text{A}$, $I_B=-40\text{mA}$			-280	mV
		$I_C=-4\text{A}$, $I_B=-200\text{mA}$			-345	mV
		$I_C=-4\text{A}$, $I_B=-400\text{mA}$			-245	mV
		$I_C=-4.5\text{A}$, $I_B=-225\text{mA}$			-450	mV

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