



USS4041PZ

Preliminary

PNP SILICON TRANSISTOR

-5.7A, -60V PNP LOW $V_{CE(SAT)}$ TRANSISTOR

DESCRIPTION

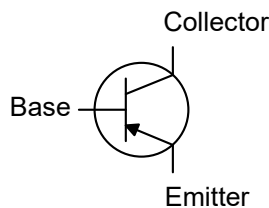
The UTC **USS4041PZ** is PNP low $V_{CE(SAT)}$ transistor in a medium power and flat lead SOT-223 Surface-Mounted Device (SMD) plastic package.

NPN complement: USS4041NZ.

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



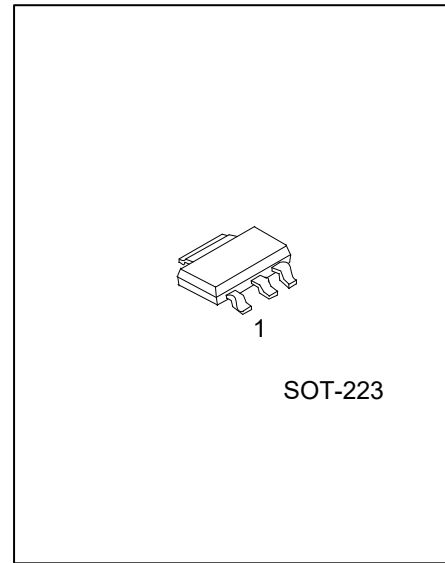
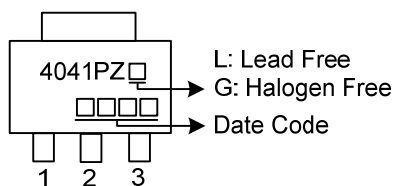
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS4041PZL-AA3-R	USS4041PZG-AA3-R	SOT-223	B	C	E	Tape Reel

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

USS4041PZG-AA3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AA3: SOT-223
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-5.7	A
Peak Collector Current	I_{CM}	-15	A
Base Current	I_B	-1	A
Power Dissipation	P_C	770	mW
Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-40 ~ +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}	160	$^\circ\text{C/W}$

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}	$I_C=-100\mu\text{A}, I_E=0$	-60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=-10\text{mA}, I_B=0$	-60			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}	$V_{CB}=-60\text{V}, I_E=0$			-100	nA
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=-48\text{V}, V_{BE}=0\text{V}$			-100	nA
Emitter-Base Cut-off Current	I_{EBO}	$V_{EB}=-5\text{V}, I_E=0$			-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			
		$V_{CE}=-2\text{V}, I_C=-1\text{A}$	200			
		$V_{CE}=-2\text{V}, I_C=-2\text{A}$	200			
		$V_{CE}=-2\text{V}, I_C=-4\text{A}$	150			
		$V_{CE}=-2\text{V}, I_C=-6\text{A}$	120			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-1\text{A}, I_B=-10\text{mA}$			-125	mV
		$I_C=-1\text{A}, I_B=-50\text{mA}$			-63	mV
		$I_C=-2\text{A}, I_B=-40\text{mA}$			-150	mV
		$I_C=-4\text{A}, I_B=-200\text{mA}$			-195	mV
		$I_C=-4\text{A}, I_B=-400\text{mA}$			-175	mV
		$I_C=-6\text{A}, I_B=-300\text{mA}$			-285	mV

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