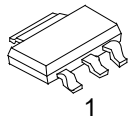
USS306PZ **Preliminary** ***PNP SILICON TRANSISTOR***

-4.1A, -100V PNP LOW $V_{CE(SAT)}$ TRANSISTOR



SOT-223

■ DESCRIPTION

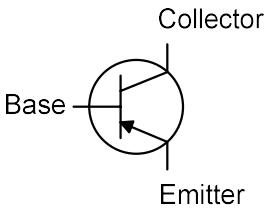
The UTC **USS306PZ** is PNP low $V_{CE(SAT)}$ transistor in a medium power and flat lead SOT-223 Surface-Mounted Device (SMD) plastic package.

NPN complement: USS306NZ.

■ 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 IC
* High energy efficiency due to less heat generation

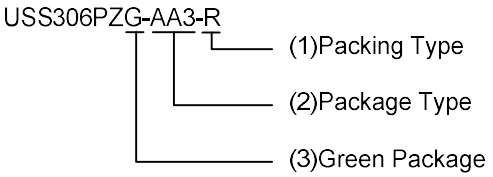
■ EQUIVALENT CIRCUIT



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS306PZL-AA3-R	USS306PZG-AA3-R	SOT-223	B	C	E	Tape Reel

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

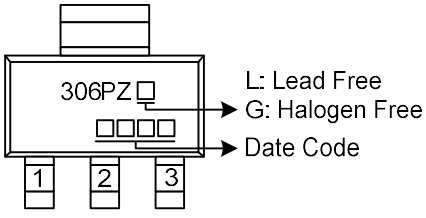


(1) R: Tape Reel

(2) AA3: SOT-223

(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



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■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-100	V
Collector-Emitter Voltage	V_{CEO}	-100	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-4.1	A
Peak Collector Current	I_{CM}	-8.2	A
Power Dissipation	P_C	700	mW
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°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	°C/W

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

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=-100μA, I_E=0A	-100			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=-10mA, I_B=0A	-100			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=-100μA, I_C=0A	-5			V
Collector-Base Cut-off Current	I_{CBO}	V_{CB}=-80V, I_E=0A			-100	nA
Collector-Emitter Cut-off Current	I_{CEO}	V_{CE}=-48V, V_{BE}=0V			-100	nA
Emitter-Base Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0A			-100	nA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=-1A, I_B=-100mA			-0.9	V
		I_C=-4A, I_B=-400mA			-1.05	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	V_{CE}=-2V, I_C=-2A			-0.85	V
DC Current Gain	h_{FE}	V_{CE}=-2V, I_C=-500mA	200			
		V_{CE}=-2V, I_C=-1A	150			
		V_{CE}=-2V, I_C=-2A	100			
		V_{CE}=-2V, I_C=-4A	25			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-500mA,I_B=-50mA			-65	mV
		I_C=-1A,I_B=-50mA			-130	mV
		I_C=-4A,I_B=-400mA			-320	mV
		I_C=-4.1A,I_B=-410mA			-325	mV

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