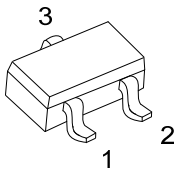
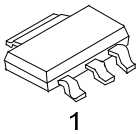
USSP4330

Preliminary ***PNP EPITAXIAL SILICON TRANSISTOR***

-30V, -3.0A PNP LOW $V_{CE(SAT)}$ TRANSISTOR



SOT-23
(EIAJ SC-59)



SOT-223

■ FEATURES

* Low collector-emitter saturation voltage $V_{CE(SAT)}$
* High collector current capability: I_C and I_{CM}
* Higher efficiency leading to less heat generation
* Reduced printed-circuit board requirements
* Complement: USSN4330

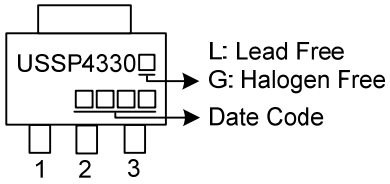
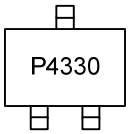
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USSP4330L-AA3-R	USSP4330G-AA3-R	SOT-223	B	C	E	Tape Reel
USSP4330L-AE3-R	USSP4330G-AE3-R	SOT-23	B	E	C	Tape Reel

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

USSP4330G-AA3-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AA3: SOT-223. AE3: SOT-23 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

SOT-223	SOT-23
	

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-30	V
Collector-Emitter Voltage		V_{CEO}	-30	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current	DC	I_C	-3	A
	Peak	I_{CM}	-6	A
Power Dissipation ($T_A \leq 25°C$)	SOT-223	P_D	1	W
	SOT-23		0.35	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-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 a FR4 printed-circuit board, single-sided copper; tin-plated, mounting pad for collector 1 cm^2.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	125	°C/W
	SOT-23		357	°C/W
Junction to Case	SOT-223	θ_{JC}	30	°C/W
	SOT-23		260	°C/W

Note: Device mounted on a FR4 printed-circuit board, single-sided copper; tin-plated, mounting pad for collector 1 cm^2.

■ 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=0	-30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=-1mA, I_B=0	-30			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=-100μA, I_C=0	-5			V
Collector-Base Cut-Off Current	I_{CBO}	V_{CB}=-30V, I_E=0			-100	nA
		V_{CB}=-30V, I_E=0, T_J=150°C			-50	μA
Collector-Emitter Cut-Off Current	I_{CES}	V_{CE}=-30V, V_{BE}=0			-100	nA
Emitter-Base Cut-Off Current	I_{EBO}	V_{EB}=-5V, I_C=0			-100	nA
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	I_C=-500mA, I_B=-50mA			-100	mV
		I_C=-1A, I_B=-50mA			-230	mV
		I_C=-1A, I_B=-100mA			-180	mV
		I_C=-2A, I_B=-100mA			-700	mV
		I_C=-2A, I_B=-200mA			-400	mV
		I_C=-3A, I_B=-300mA			-750	mV
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	I_C=-500mA, I_B=-50mA			-1	V
		I_C=-1A, I_B=-50mA			-1.1	V
		I_C=-2A, I_B=-100mA			-1.15	V
		I_C=-2A, I_B=-200mA			-1.25	V
		I_C=-3A, I_B=-300mA			-1.3	V
Base-Emitter Turn-On Voltage(Note)	$V_{BE(ON)}$	V_{CE}=-2V, I_C=-0.5A			-0.95	V
Dc Current Gain (Note)	h_{FE}	V_{CE}=-2V, I_C=-100mA	300			
		V_{CE}=-2V, I_C=-500mA	240			
		V_{CE}=-2V, I_C=-1A	200			
		V_{CE}=-2V, I_C=-2A	100			
		V_{CE}=-2V, I_C=-3A	20			
Transition Frequency	f_T	V_{CE}=-10V, I_C=-100mA, f=100MHz	100			MHz

Note: Pulse test: $t_P \leq$ 300μs, Duty cycle ≤ 2%.