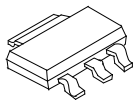
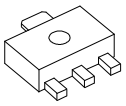
USSN660 **Preliminary** ***NPN EPITAXIAL SILICON TRANSISTOR***

60V, 6.0A NPN LOW $V_{CE(SAT)}$ TRANSISTOR



SOT-223



SOT-89

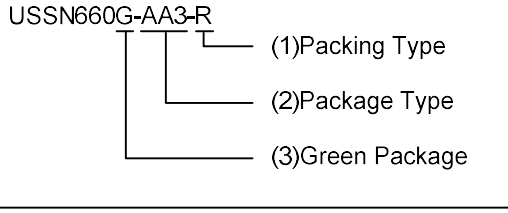
■ FEATURES

* 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: USSP660

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USSN660L-AA3-R	USSN660G-AA3-R	SOT-223	B	C	E	Tape Reel
USSN660L-AB3-R	USSN660G-AB3-R	SOT-89	B	E	C	Tape Reel

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

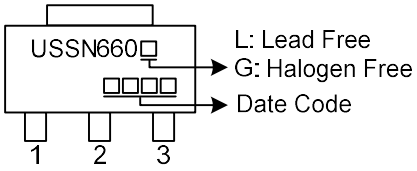
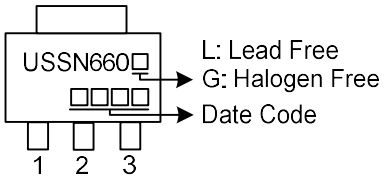


(1) R: Tape Reel

(2) AA3: SOT-223, AB3: SOT-89

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

■ MARKING

SOT-223	SOT-89
	

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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}	60	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	6	A
	Peak	I_{CM}	12	A
Power Dissipation ($T_A \le 25°C$)	SOT-223	P_D	0.83	W
	SOT-89		0.5	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}	150	°C/W
	SOT-89		250	°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 to Base Breakdown Voltage	BV_{CBO}	I_C=100μA, I_E=0	100			V
Collector to Emitter Breakdown Voltage	BV_{CEO}	I_C=10mA, I_B=0	60			V
Emitter to Base Breakdown Voltage	BV_{EBO}	I_E=100μA, I_C=0	6			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=60V, I_E=0			100	nA
Collector Emitter Cut-Off Current	I_{CEO}	V_{CE}=60V, I_B=0			10	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=6V, I_C=0			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=100mA, I_B=2mA			40	mV
		I_C=1A, I_B=100mA			60	mV
		I_C=2A, I_B=200mA			100	mV
		I_C=3A, I_B=60mA			220	mV
		I_C=6A, I_B=600mA			300	mV
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	I_C=1A, I_B=100mA			0.9	V
Dc Current Gain	h_{FE}	V_{CE}=2V, I_C=500mA	150			
		V_{CE}=2V, I_C=1A	120		360	
		V_{CE}=2V, I_C=2A	100			
		V_{CE}=2V, I_C=6A	50			
Transition Frequency	f_T	V_{CE}=10V, I_C=500mA, f=1MHZ	100			MHz

Note: Pulse test: $t_P \le 300\mu s$, Duty cycle ≤ 2%.

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