



USS4360X

Preliminary

NPN EPITAXIAL SILICON TRANSISTOR

60V NPN LOW SATURATION MEDIUM POWER TRANSISTOR

DESCRIPTION

The **USS4360X** is an new low saturation 60V NPN transistor offers extremely low on state losses making it ideal for use in DC-DC circuits and various driving and power management functions.

PNP complement: USS5360Z.

FEATURES

- * 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 efficiency due to less heat generation
- * Smaller required Printed-Circuit Board (PCB) area than for conventional transistors

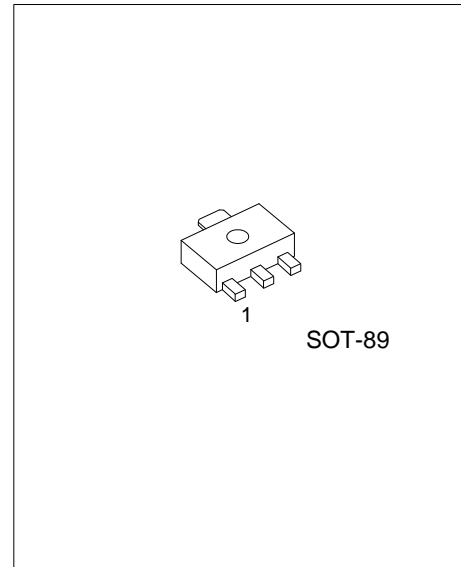
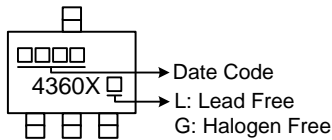
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS4360XL-AB3-R	USS4360XG-AB3-R	SOT-89	B	C	E	Tape Reel

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

USS4360XG-AB3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AB3: SOT-89
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING



FLYING 汎翔國際有限公司
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■ **ABSOLUTE MAXIMUM RATINGS** ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	60	V
Emitter to Base Voltage	V_{EBO}	7	V
Base Current	I_B	500	mA
Collector Current	I_C	3	A
Peak Collector Current	I_{CM}	6	A
Collector Dissipation	P_C	0.95	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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. Single pulse, $P_W=10\text{ms}$.

■ **THERMAL DATA**

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	132	$^\circ\text{C/W}$

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}	$I_C=100\mu\text{A}$	80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}$	60			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}$	7			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=48\text{V}, I_E=0\text{A}$			100	nA
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=48\text{V}$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0\text{A}$			100	nA
Base Emitter On Voltage (Note)	$V_{BE(ON)}$	$V_{CE}=5\text{V}, I_C=1\text{A}$			1.1	V
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=1\text{A}, I_B=100\text{mA}$			1.2	V
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			75	mV
		$I_C=1\text{A}, I_B=100\text{mA}$			150	mV
		$I_C=2\text{A}, I_B=200\text{mA}$			275	mV
		$I_C=3\text{A}, I_B=300\text{mA}$			400	mV
DC Current Transfer Ratio (Note)	h_{FE}	$I_C=50\text{mA}, V_{CE}=5\text{V}$	200			
		$I_C=500\text{mA}, V_{CE}=5\text{V}$	200			
		$I_C=1\text{A}, V_{CE}=5\text{V}$	200			
		$I_C=2\text{A}, V_{CE}=5\text{V}$	120			
		$I_C=3\text{A}, V_{CE}=5\text{V}$	75			
Transition Frequency	f_T	$I_C=50\text{mA}, V_{CE}=10\text{V}, f=100\text{MHz}$	75	145		MHz
Collector Capacitance	C_{OB}	$V_{CB}=10\text{V}, I_E=I_C=0\text{A}, f=1\text{MHz}$		11	14	pF

Note : Measured under pulsed conditions. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycles $\leq 2\%$.

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