



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 ICM
- * 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

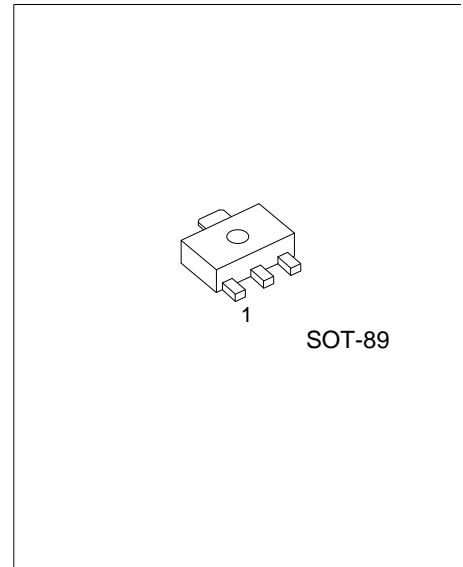
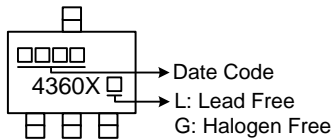
ORDERING INFORMATION

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



■ ABSOLUTE MAXIMUM RATINGS (T_A= 25°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	°C
Storage Temperature	T _{STG}	-55 ~ +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. Single pulse, P_W=10ms.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	132	°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	80			V
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C =1mA	60			V
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E =100μA	7			V
Collector Cutoff Current	I _{CBO}	V _{CB} =48V, I _E =0A			100	nA
Collector-Emitter Cut-off Current	I _{CES}	V _{CE} =48V			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =5V, I _C =0A			100	nA
Base Emitter On Voltage (Note)	V _{BE(ON)}	V _{CE} =5V, I _C =1A			1.1	V
Base-Emitter Saturation Voltage (Note)	V _{BE(SAT)}	I _C =1A, I _B =100mA			1.2	V
Collector-Emitter Saturation Voltage (Note)	V _{CE(SAT)}	I _C =500mA, I _B =50mA			75	mV
		I _C =1A, I _B =100mA			150	mV
		I _C =2A, I _B =200mA			275	mV
		I _C =3A, I _B =300mA			400	mV
DC Current Transfer Ratio (Note)	h _{FE}	I _C =50mA, V _{CE} =5V	200			
		I _C =500mA, V _{CE} =5V	200			
		I _C =1A, V _{CE} =5V	200			
		I _C =2A, V _{CE} =5V	120			
		I _C =3A, V _{CE} =5V	75			
Transition Frequency	f _T	I _C =50mA, V _{CE} =10V, f=100MHz	75	145		MHz
Collector Capacitance	C _{OB}	V _{CB} =10V, I _E =I _C =0A, f=1MHz		11	14	pF

Note : Measured under pulsed conditions. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

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