



## USS5480X

Preliminary

PNP SILICON TRANSISTOR

### -4.0A, -80V PNO LOW $V_{CE(SAT)}$ TRANSISTOR

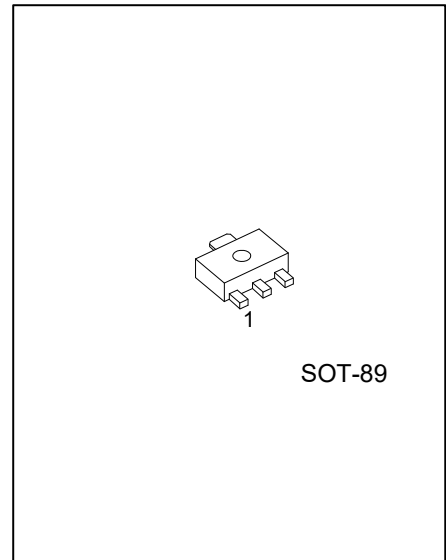
#### DESCRIPTION

The UTC **USS5480X** is PNP low  $V_{CE(SAT)}$  transistor in a medium power and flat lead SOT-89 Surface-Mounted Device (SMD) plastic package.

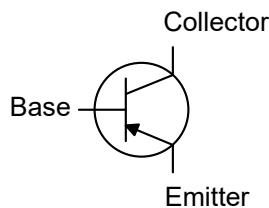
NPN complement: USS4480X.

#### 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  $I_C$
- \* High energy efficiency due to less heat generation



#### EQUIVALENT CIRCUIT



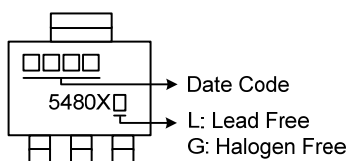
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS5480XL-AB3-R	USS5480XG-AB3-R	SOT-89	B	E	C	Tube

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

USS5480XG-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 RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-80	V
Collector-Emitter Voltage	$V_{CEO}$	-80	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-4	A
Peak Collector Current	$I_{CM}$	-10	A
Power Dissipation	$P_C$	550	mW
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

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	$\theta_{JA}$	225	$^{\circ}\text{C}/\text{W}$

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	$BV_{CBO}$	$I_C=-100\mu\text{A}, I_E=0$	-80			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=-1\text{mA}, I_B=0$	-80			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=-100\mu\text{A}, I_C=0$	-5			V
Collector-Base Cut-off Current	$I_{CBO}$	$V_{CB}=-80\text{V}, I_E=0$			-100	nA
Collector-Emitter Cut-off Current	$I_{CBO}$	$V_{CE}=-60\text{V}, V_{BE}=0$			-100	nA
Emitter-Base Cut-off Current	$I_{EBO}$	$V_{EB}=-5\text{V}, I_C=0$			-100	nA
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-0.5\text{A}, I_B=-50\text{mA}$			-55	V
		$I_C=-1\text{A}, I_B=-50\text{mA}$			-105	V
		$I_C=-1\text{A}, I_B=-100\text{mA}$			-250	V
		$I_C=-4\text{A}, I_B=-400\text{mA}$			-340	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$V_{CE}=-2\text{V}, I_C=-2\text{A}$			-850	mV
DC Current Gain	$h_{FE}$	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$	200			
		$V_{CE}=-2\text{V}, I_C=-1\text{A}$	180			
		$V_{CE}=-2\text{V}, I_C=-2\text{A}$	150			
		$V_{CE}=-2\text{V}, I_C=-4\text{A}$	80			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-50	mV
		$I_C=-1\text{A}, I_B=-50\text{mA}$			-100	mV
		$I_C=-1\text{A}, I_B=-10\text{mA}$			-250	mV
		$I_C=-2\text{A}, I_B=-40\text{mA}$			-280	mV
		$I_C=-4\text{A}, I_B=-200\text{mA}$			-330	mV
		$I_C=-4\text{A}, I_B=-400\text{mA}$			-240	mV
		$I_C=-4.7\text{A}, I_B=-235\text{mA}$			-420	mV

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