



**UBCX53**

Advance

**PNP EPITAXIAL SILICON TRANSISTOR**

**PNP MEDIUM POWER TRANSISTORS**

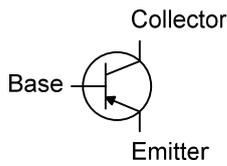
■ **DESCRIPTION**

The UTC **UBCX53** is an PNP epitaxial silicon transistor, it uses UTC's advanced technology to provide customers high DC current gain and high current capacity.

■ **FEATURES**

- \* High Current Capacity
- \* High DC Current Gain
- \* Complements the UBCX56

■ **EQUIVALENT CIRCUIT**



■ **ORDERING INFORMATION**

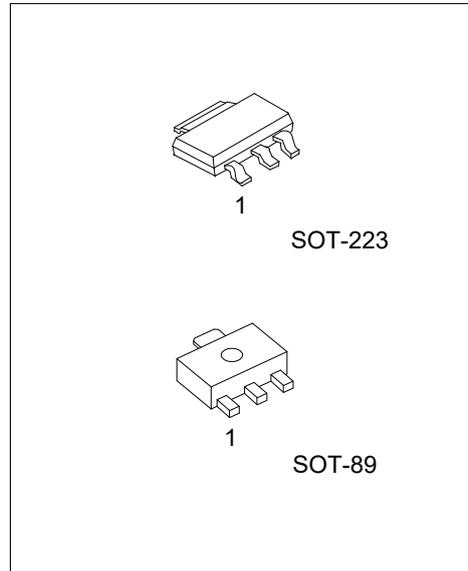
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UBCX53L-AA3-R	UBCX53G-AA3-R	SOT-223	B	C	E	Tape Reel
UBCX53L-AB3-R	UBCX53G-AB3-R	SOT-89	B	C	E	Tape Reel
UBCX53L-xx-AA3-R	UBCX53G-xx-AA3-R	SOT-223	B	C	E	Tape Reel
UBCX53L-xx-AB3-R	UBCX53G-xx-AB3-R	SOT-89	B	C	E	Tape Reel

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

<p>UBCX53G-xx-AA3-R</p>	<p>(1) R: Tape Reel                  (2) AA3: SOT-223, AB3: SOT-89                  (3) xx: refer to Classification of <math>h_{FE}</math>                  (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ **MARKING**

SOT-89	SOT-223



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage (Open Emitter)		$V_{CB0}$	-100	V
Collector-Emitter Voltage (Open Base)		$V_{CE0}$	-80	V
Emitter-Base Voltage (Open Collector)		$V_{EB0}$	-5	V
Collector Current (DC)		$I_C$	-1	A
Peak Collector Current		$I_{CM}$	-1.5	A
Peak Base Current		$I_{BM}$	-0.2	A
Total Power Dissipation ( $T_A \leq 25^\circ\text{C}$ , Note2)	SOT-223	$P_D$	1.3	W
	SOT-89		1.1	W
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-65 ~ +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. Device mounted on a printed-circuit board, single sided copper, tinplated, mounting pad for collector 6  $\text{cm}^2$ .

### ■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	$\theta_{JA}$	96	$^\circ\text{C/W}$
	SOT-89		114	$^\circ\text{C/W}$

Note: Device mounted on FR-4 substrate  $P_c$  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		$BV_{CB0}$	$I_C = -100\mu\text{A}$ , $I_E = 0$	-100			V
Collector-Emitter Breakdown Voltage		$BV_{CE0}$	$I_C = -2\text{mA}$ , $I_B = 0$	80			V
Emitter-Base Breakdown Voltage		$BV_{EB0}$	$I_E = -100\mu\text{A}$ , $I_C = 0$	-5			V
Collector-Base Cut-Off Current		$I_{CBO}$	$V_{CB} = -30\text{V}$ , $I_E = 0$			-100	nA
Emitter-Base Cut-Off Current		$I_{EBO}$	$V_{EB} = -5\text{V}$ , $I_C = 0$			-100	nA
DC Current Gain		$h_{FE}$	$V_{CE} = -2\text{V}$ , $I_C = -5\text{mA}$	63			
			$V_{CE} = -2\text{V}$ , $I_C = -500\text{mA}$	40			
	UBCX53		$V_{CE} = -2\text{V}$ , $I_C = -150\text{mA}$	63		250	
	UBCX53-10			63		160	
	UBCX53-16		100		250		
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C = -500\text{mA}$ , $I_B = -50\text{mA}$			-0.5	V
Base-Emitter Voltage		$V_{BE}$	$I_C = -500\text{mA}$ , $V_{CE} = -2\text{V}$			-1	V
Transition Frequency		$f_T$	$I_C = -50\text{mA}$ , $V_{CE} = -5\text{V}$ , $f = 100\text{MHz}$		140		MHz

Note : Pulse test:  $P_w \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

### ■ CLASSIFICATION OF $h_{FE}$

RANK	-	10	16
RANGE	63 ~ 250	63 ~ 160	100 ~ 250

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