



## UBCX56

## NPN EPITAXIAL SILICON TRANSISTOR

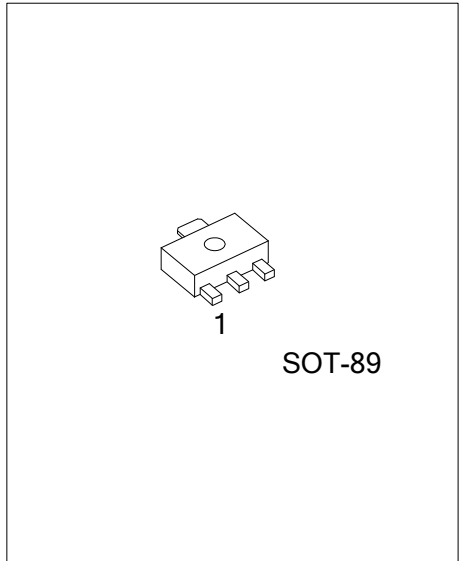
### NPN MEDIUM POWER TRANSISTORS

#### DESCRIPTION

The UTC **UBCX56** is an NPN 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



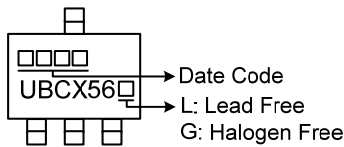
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UBCX56L-xx-AB3-R	UBCX56G-xx-AB3-R	SOT-89	B	C	E	Tape Reel

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

<p>UBCX56G-xx-AB3-R</p>	<p>(1) R: Tape Reel  (2) 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



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage (open emitter)	$V_{CBO}$	100	V
Collector-Emitter Voltage (open base)	$V_{CEO}$	80	V
Emitter-Base Voltage (open collector)	$V_{EBO}$	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)	$P_D$	1.3	W
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-65 ~ +150	$^\circ\text{C}$
Operating Ambient Temperature	$T_{OPR}$	-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	$\theta_{JA}$	94	$^\circ\text{C/W}$

### ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	100			V
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10\text{mA}$ , $I_B=0$	80			V
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu\text{A}$ , $I_C=0$	5			V
Collector Cut-Off Current	$I_{CBO}$	$I_E=0$ , $V_{CB}=30\text{V}$			100	nA
Emitter Cut-Off Current	$I_{EBO}$	$I_C=0$ , $V_{EB}=5\text{V}$			100	nA
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	$f_T$	$I_C=10\text{mA}$ , $V_{CE}=5\text{V}$ , $f=100\text{MHz}$		130		MHz
DC Current Gain	$h_{FE1}$	$V_{CE}=2\text{V}$ , $I_C=5\text{mA}$	40			
	$h_{FE2}$	$V_{CE}=2\text{V}$ , $I_C=150\text{mA}$	63		250	
	$h_{FE3}$	$V_{CE}=2\text{V}$ , $I_C=500\text{mA}$	25			
DC Current Gain Ratio of the Complementary Pairs	$\frac{h_{FE1}}{h_{FE2}}$	$ I_C =150\text{mA}$ , $ V_{CE} =2\text{V}$		1.3	1.6	

### ■ CLASSIFICATION OF $h_{FE2}$

RANK	10	16
RANGE	63 ~ 100	100 ~ 250

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