

# UTC S8050 NPN EPITAXIAL SILICON TRANSISTOR

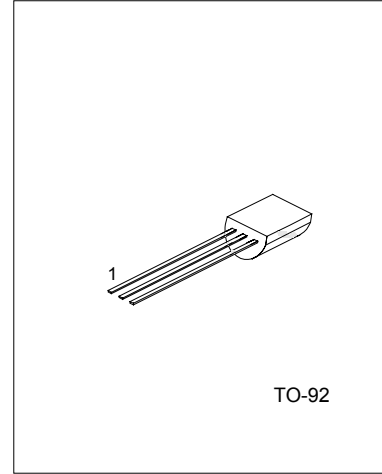
## LOW VOLTAGE HIGH CURRENT SMALL SIGNAL NPN TRANSISTOR

### DESCRIPTION

The UTC S8050 is a low voltage high current small signal NPN transistor, designed for Class B push-pull audio amplifier and general purpose applications.

### FEATURES

- \*Collector current up to 700mA
- \*Collector-Emitter voltage up to 20 V
- \*Complementary to S8550



1:EMITTER 2:BASE 3: COLLECTOR

### ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified )

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	20	V
Emitter-Base Voltage	V <sub>EB0</sub>	5	V
Collector Dissipation(Ta=25°C)	P <sub>c</sub>	1	W
Collector Current	I <sub>c</sub>	700	mA
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C

### ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	I <sub>c</sub> =100μA, I <sub>E</sub> =0	30			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>c</sub> =1mA, I <sub>B</sub> =0	20			V
Emitter-Base Breakdown Voltage	BV <sub>EB0</sub>	I <sub>E</sub> =100μA, I <sub>c</sub> =0	5			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =30V, I <sub>E</sub> =0			1	μA
Emitter Cut-Off Current	I <sub>EB0</sub>	V <sub>EB</sub> =5V, I <sub>c</sub> =0			100	nA
DC Current Gain(note)	hFE1	V <sub>CE</sub> =1V, I <sub>c</sub> =1mA	100	110	400	
	hFE2	V <sub>CE</sub> =1V, I <sub>c</sub> =150 mA	120			
	hFE3	V <sub>CE</sub> =1V, I <sub>c</sub> =500mA	40			
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> =500mA, I <sub>B</sub> =50mA			0.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>c</sub> =500mA, I <sub>B</sub> =50mA			1.2	V
Base-Emitter Saturation Voltage	V <sub>BE</sub>	V <sub>CE</sub> =1V, I <sub>c</sub> =10mA			1.0	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>c</sub> =50mA	100			MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0 f=1MHz		9.0		pF

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## CLASSIFICATION OF $h_{FE2}$

RANK	C	D	E
RANGE	120-200	160-300	280-400

## TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 Static characteristics

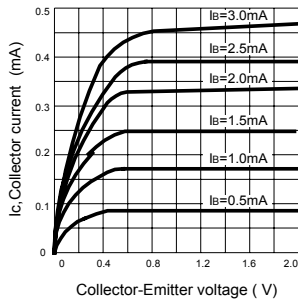


Fig.2 DC current Gain

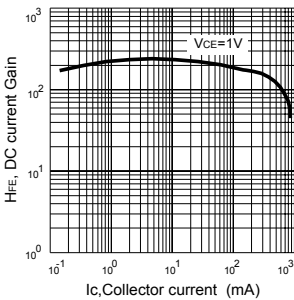


Fig.3 Base-Emitter on Voltage

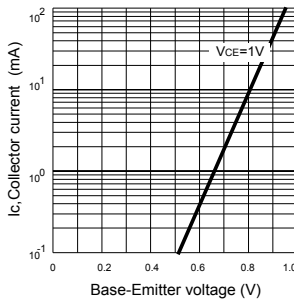


Fig.4 Saturation voltage

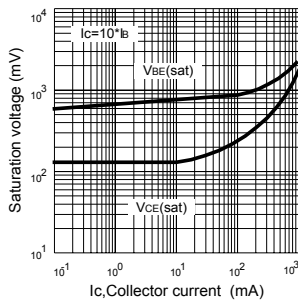


Fig.5 Current gain-bandwidth product

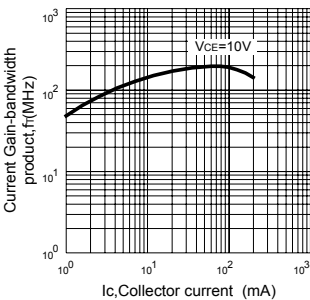


Fig.6 Collector output Capacitance

