

**HE8050****NPN SILICON TRANSISTOR**

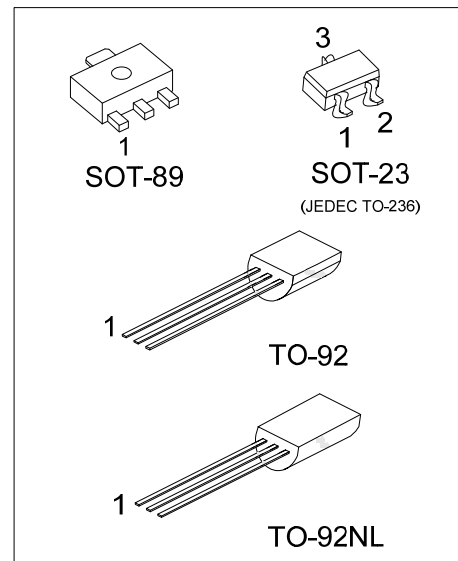
LOW VOLTAGE HIGH CURRENT SMALL SIGNAL NPN TRANSISTOR

DESCRIPTION

The UTC **HE8050** is a low voltage high current small signal NPN transistor, designed for Class B push-pull 2W audio amplifier for portable radio and general purpose applications.

FEATURES

- *Collector current up to 1.5A
- *Collector-Emitter voltage up to 25V
- *Complimentary to UTC HE8550



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
HE8050L-x-AB3-R	HE8050G-x-AB3-R	SOT-89	B	C	E	Tape Reel
HE8050L-x-AE3-R	HE8050G-x-AE3-R	SOT-23	B	E	C	Tape Reel
HE8050L-x-T92-B	HE8050G-x-T92-B	TO-92	E	C	B	Tape Box
HE8050L-x-T92-K	HE8050G-x-T92-K	TO-92	E	C	B	Bulk
HE8050L-x-T9N-B	HE8050G-x-T9N-B	TO-92NL	E	C	B	Tape Box
HE8050L-x-T9N-K	HE8050G-x-T9N-K	TO-92NL	E	C	B	Bulk

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

HE8050G-x-AB3-R (1) Packing Type (2) Package Type (3) Rank (4) Green Package	(1) R: Tape Reel, B: Tape Box, K: Bulk (2) AB3: SOT-89, AE3: SOT-23, T92: TO-92, T9N: TO-92NL (3) x: refer to Classification of h_{FE2} (4) G: Halogen Free and Lead Free, L: Lead Free
--	---

MARKING

SOT-89	SOT-23
HE8050 1 → Date Code → L: Lead Free → G: Halogen Free	DA 1 → L: Lead Free → G: Halogen Free
TO-92	TO-92NL
UTC HE8050 1 → L: Lead Free → G: Halogen Free → Date Code	UTC HE8050 1 → L: Lead Free → G: Halogen Free → Date Code

■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V _{CBO}	40	V
Collector-Emitter Voltage		V _{CEO}	25	V
Emitter-Base Voltage		V _{EBO}	6	V
Collector Dissipation	SOT-23	P _C	350	mW
	SOT-89		500	mW
	TO-92		1	W
	TO-92NL			
Collector Current		I _C	1.5	A
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-65 ~ +150	°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 CHARACTERISTICS

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case	SOT-23	θ _{JC}	110	°C/W
	SOT-89		40	
	TO-92		80	
	TO-92NL		78	

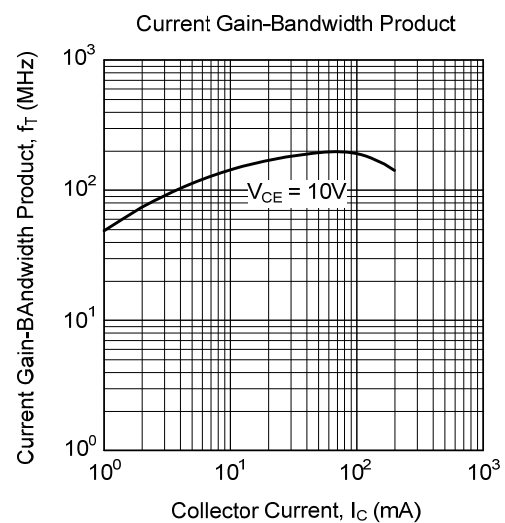
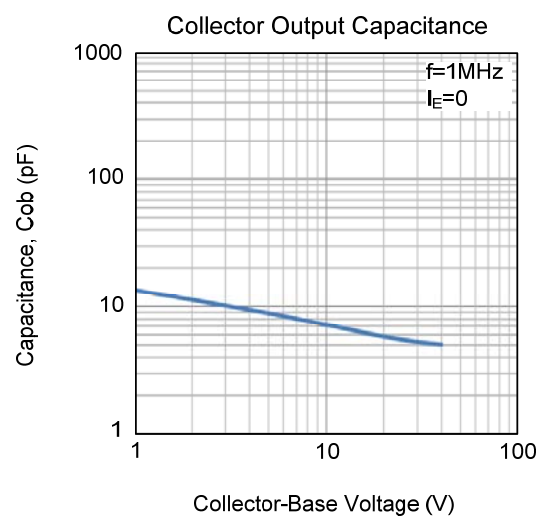
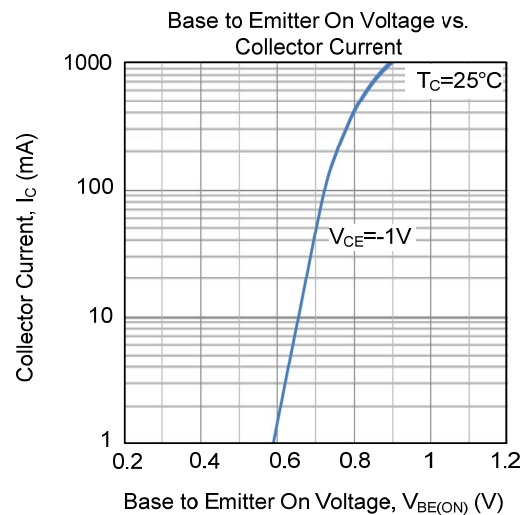
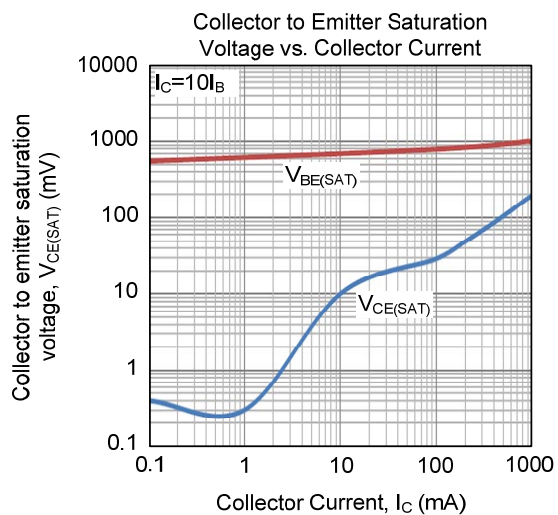
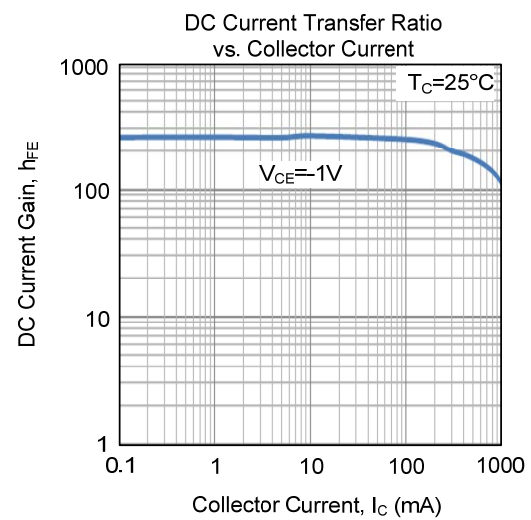
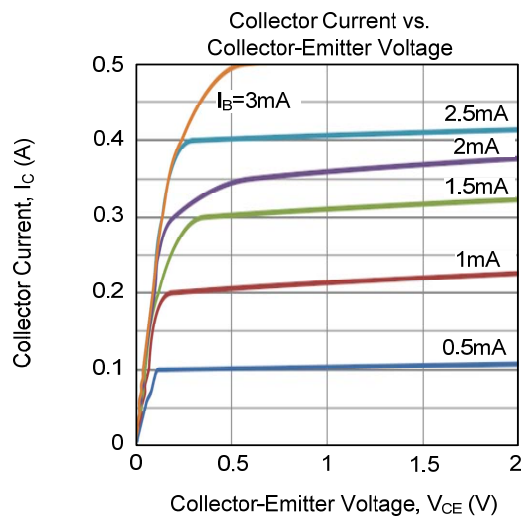
■ ELECTRICAL CHARACTERISTICS (T_A = 25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV _{CBO}	I _C =100μA, I _E =0	40			V
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C =2mA, I _B =0	25			V
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E =100μA, I _C =0	6			V
Collector Cut-Off Current	I _{CBO}	V _{CB} =35V, I _E =0			100	nA
Emitter Cut-Off Current	I _{EBO}	V _{EB} =6V, I _C =0			100	nA
DC Current Gain	h _{FE1}	V _{CE} =1V, I _C =5mA	45	135		
	h _{FE2}	V _{CE} =1V, I _C =100mA	85	160	500	
	h _{FE3}	V _{CE} =1V, I _C =800mA	40	110		
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =800mA, I _B =80mA			0.5	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C =800mA, I _B =80mA			1.2	V
Base-Emitter Saturation Voltage	V _{BE}	V _{CE} =1V, I _C =10mA			1.0	V
Current Gain Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA	100			MHz
Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz		9.0		pF

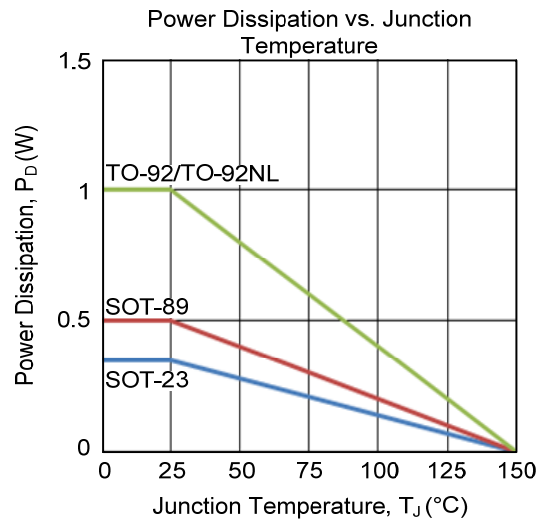
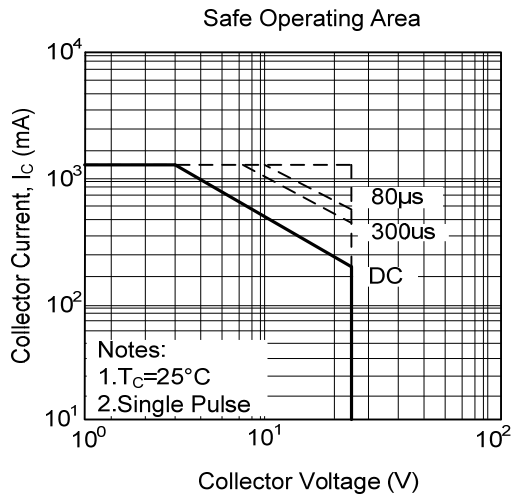
■ CLASSIFICATION of h_{FE2}

RANK	C	D	E
RANGE	120-200	160-300	250-500

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.