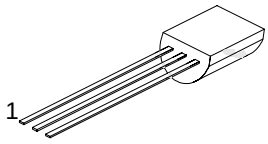
HE8051

NPN SILICON TRANSISTOR

LOW VOLTAGE HIGH CURRENT SMALL SIGNAL NPN TRANSISTOR



TO-92

*Pb-free plating product number: HE8051L

■ DESCRIPTION

The UTC **HE8051** 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 25 V
* complimentary to UTC **HE8551**

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
HE8051-x-T92-B	HE8051L-x-T92-B	TO-92	E	B	C	Tape Box
HE8051-x-T92-K	HE8051L-x-T92-K	TO-92	E	B	C	Bulk

HE8051L-x-T92-B

(1)Packing Type
(2)Package Type
(3)Rank
(4)Lead Plating

(1) B: Tape Box, K: Bulk
(2) T92: TO-92
(3) x: refer to Classification of h_{FE2}
(4) L: Lead Free Plating, Blank: Pb/Sn

■ ABSOLUTE MAXIMUM RATINGS (Ta=25℃, 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 (Ta=25℃C)	P_C	1	W
Collector Current	I_C	1.5	A
Junction Temperature	T_J	+150	℃
Storage Temperature	T_{STG}	-40 ~ +150	℃

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.

■ ELECTRICAL CHARACTERISTICS (Ta=25℃, 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 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

Fig. 1 Static Characteristics

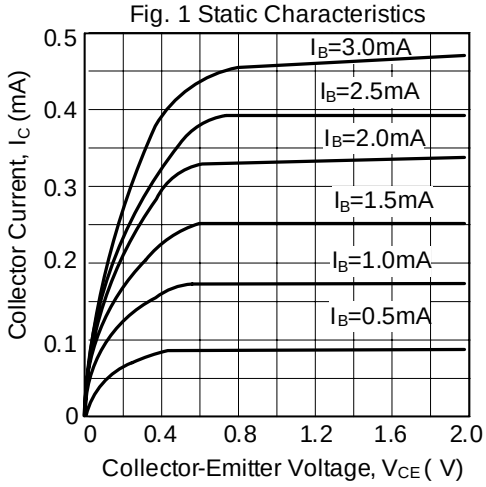


Fig. 2 DC Current Gain

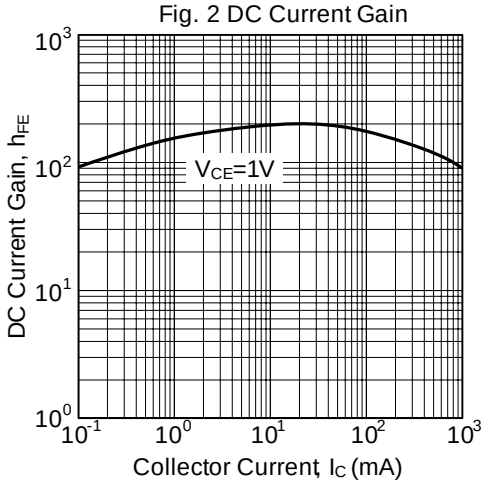


Fig. 3 Base-Emitter On Voltage

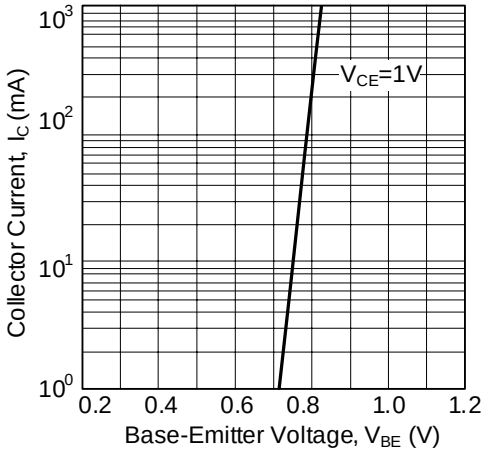


Fig. 4 Saturation Voltage

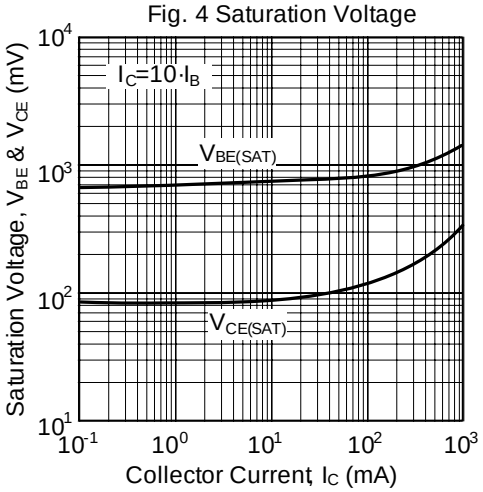


Fig. 5 Current Gain-Bandwidth Product

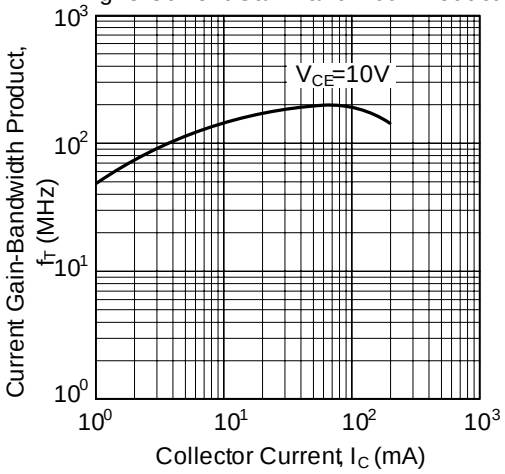


Fig. 6 Collector Output Capacitance