



2SB1202

PNP PLANAR TRANSISTOR

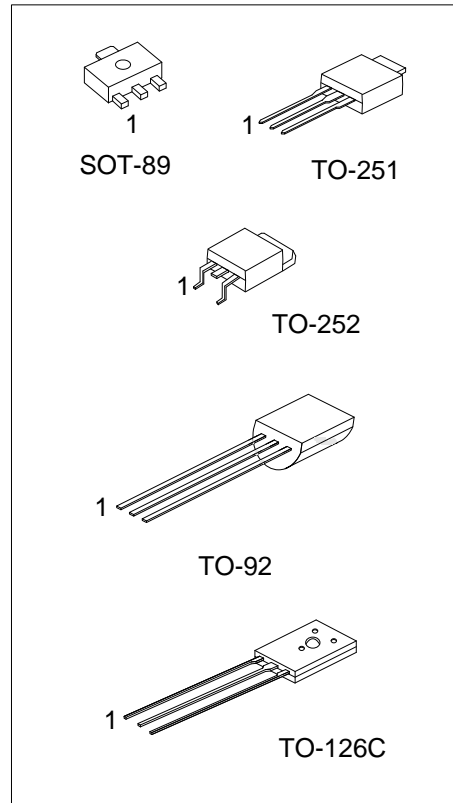
HIGH CURRENT SWITCHING APPLICATION

DESCRIPTION

The UTC **2SB1202** applies to voltage regulators, relay drivers, lamp drivers, and electrical equipment.

FEATURES

- * Adoption of FBET, MBIT processes
- * Large current capacity and wide ASO
- * Low collector-to-emitter saturation voltage
- * Fast switching speed



ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SB1202L-x-AB3-R	2SB1202G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SB1202L-x-TM3-T	2SB1202G-x-TM3-T	TO-251	B	C	E	Tube
2SB1202L-x-TN3-R	2SB1202G-x-TN3-R	TO-252	B	C	E	Tape Reel
2SB1202L-x-T6C-K	2SB1202G-x-T6C-K	TO-126C	E	C	B	Bulk
2SB1202L-x-T92-B	2SB1202G-x-T92-B	TO-92	E	C	B	Tape Box
2SB1202L-x-T92-K	2SB1202G-x-T92-K	TO-92	E	C	B	Bulk

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

<p>2SB1202G-x-AB3-R</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p>	<p>(1) K: Bulk, T: Tube, R: Tape Reel (2) AB3: SOT-89, TM3: TO-251, TN3: TO-252 T6C: TO-126C, T92: TO-92 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free and Lead Free, L: Lead Free</p>
---	---

MARKING

SOT-89	TO-251/TO-252
<p> □□□□ → Date Code 2SB1202 → L: Lead Free → G: Halogen Free 1 </p>	<p> UTC 2SB1202 → L: Lead Free → G: Halogen Free □□□□□□ → Date Code Lot Code ← 1 </p>
TO-126C	TO-92
<p> UTC □□□□ → Date Code 2SB1202 → L: Lead Free → G: Halogen Free 1 </p>	<p> UTC 2SB1202 → L: Lead Free → G: Halogen Free □□□ → Date Code 1 </p>

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-60	V
Collector-Emitter Voltage		V_{CEO}	-50	V
Emitter-Base Voltage		V_{EBO}	-6	V
Collector Power Dissipation	$T_C=25^\circ\text{C}$	SOT-89	3.5	W
		TO-251	28	W
		TO-252	28	W
		TO-126C	20	W
		TO-92	1.5	W
Collector Current	DC	I_C	-3	A
	PULSE	I_{CP}	-6	A
Junction Temperature		T_J	+150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^\circ\text{C}$

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 DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case	SOT-89	θ_{JC}	35.7	$^\circ\text{C/W}$
	TO-251		4.53	$^\circ\text{C/W}$
	TO-252		4.53	$^\circ\text{C/W}$
	TO-126C		6.25	$^\circ\text{C/W}$
	TO-92		83.3	$^\circ\text{C/W}$

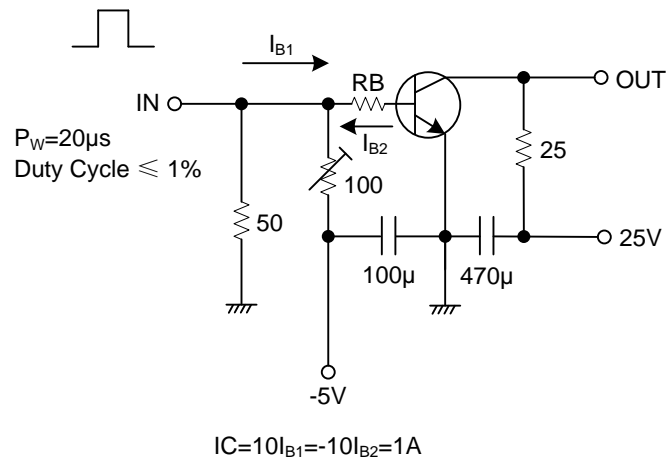
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
C-B Breakdown Voltage	BV_{CBO}	$I_C=-10\mu\text{A}, I_E=0$	-60			V
C-E Breakdown Voltage	BV_{CEO}	$I_C=-1\text{mA}, R_{BE}=\infty$	-50			V
E-B Breakdown Voltage	BV_{EBO}	$I_E=-10\mu\text{A}, I_C=0$	-6			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=-40\text{V}, I_E=0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0$			-1	μA
C-E Saturation Voltage	$V_{CE(SAT)}$	$I_C=-2\text{A}, I_B=-100\text{mA}$		-0.35	-0.7	V
B-E Saturation Voltage	$V_{BE(SAT)}$	$I_C=-2\text{A}, I_B=-100\text{mA}$		-0.94	-1.2	V
DC Current Gain	h_{FE1}	$V_{CE}=-2\text{V}, I_C=-100\text{mA}$	100		560	
	h_{FE2}	$V_{CE}=-2\text{V}, I_C=-3\text{A}$	35			
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-50\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$		39		pF
Turn-on Time	t_{ON}	See test circuit		70		ns
Storage Time	t_{STG}	See test circuit		450		ns
Fall Time	t_F	See test circuit		35		ns

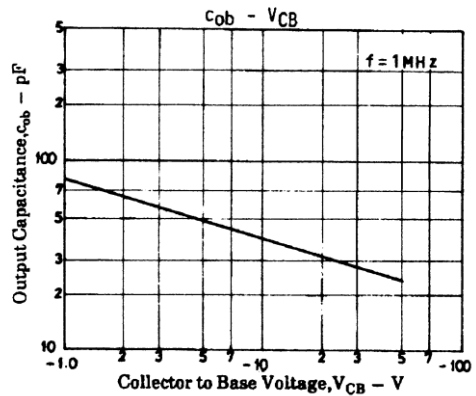
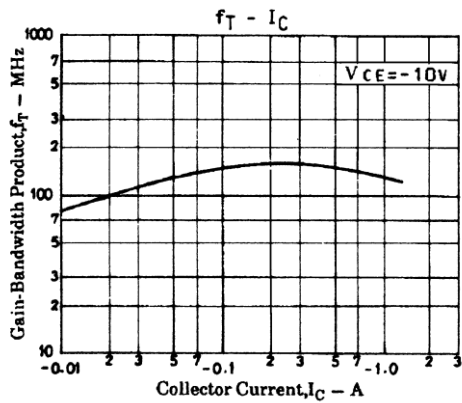
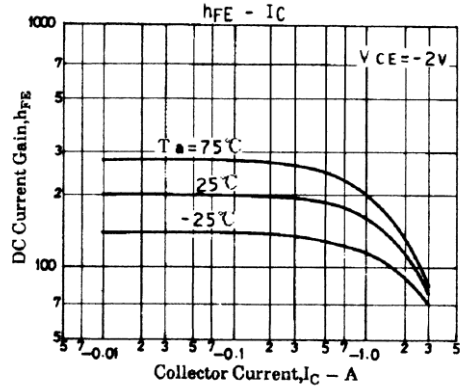
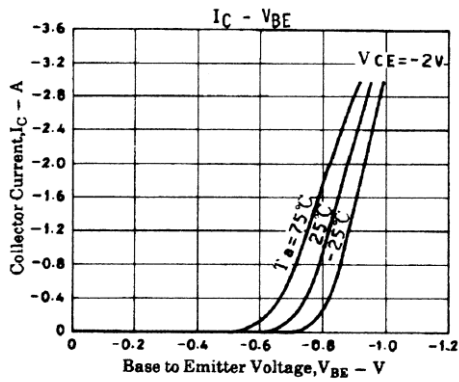
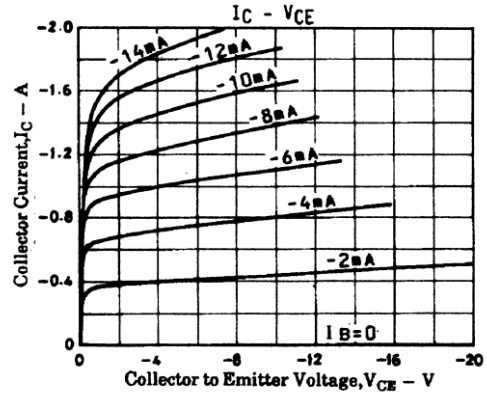
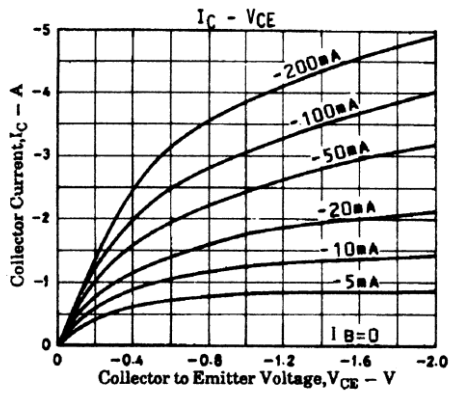
■ CLASSIFICATION OF h_{FE1}

RANK	R	S	T	U
RANGE	100-200	140-280	200-400	280-560

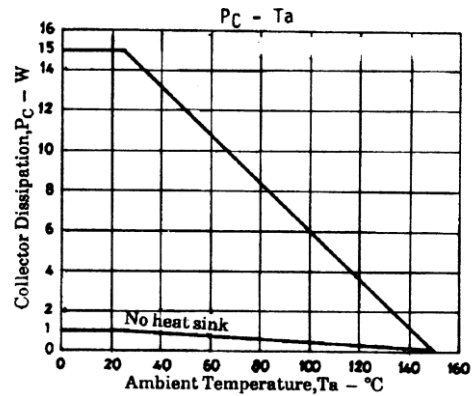
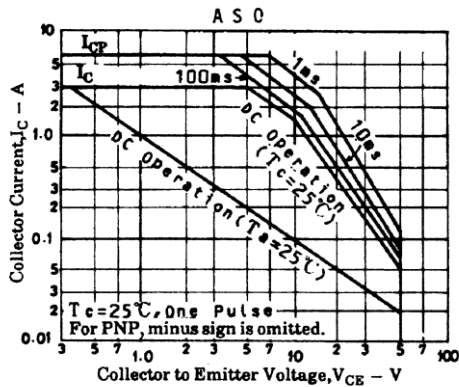
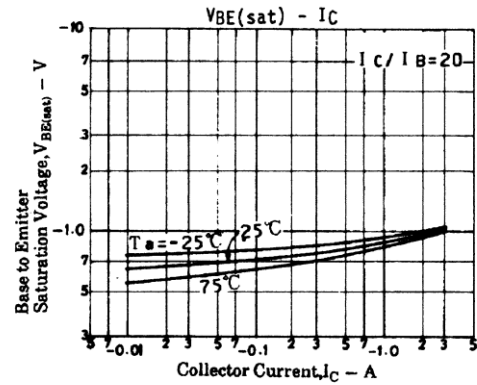
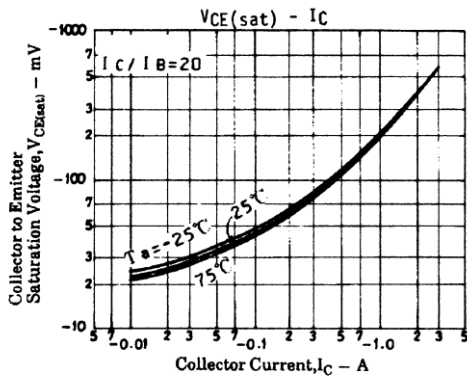
■ TEST CIRCUIT



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.