



## 2SB1202

## PNP PLANAR TRANSISTOR

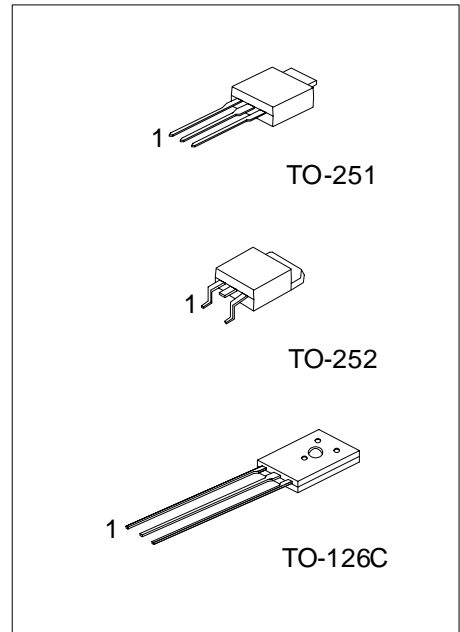
### HIGH CURRENT SWITCHING APPLICATION

#### 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



\*Pb-free plating product number: 2SB1202L

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SB1202-x-T6C-K	2SB1202L-x-T6C-K	TO-126C	E	C	B	Bulk
2SB1202-x-TM3-T	2SB1202L-x-TM3-T	TO-251	B	C	E	Tube
2SB1202-x-TN3-R	2SB1202L-x-TN3-R	TO-252	B	C	E	Tape Reel
2SB1202-x-TN3-T	2SB1202L-x-TN3-T	TO-252	B	C	E	Tube

<p>2SB1202L-x-T6C-K</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Rank</p> <p>(4)Lead Plating</p>	<p>(1) K: Bulk, T: Tube, R: Tape Reel</p> <p>(2) T6C: TO-126C, TM3: TO-251, TN3: TO-252</p> <p>(3) x: refer to Classification of <math>h_{FE1}</math></p> <p>(4) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS (Ta=25°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	Ta=25°C	1	W
	Tc=25°C	15	W
Collector Current	DC	$I_C$	-3
	PULSE	$I_{CP}$	-6
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55 ~ +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.

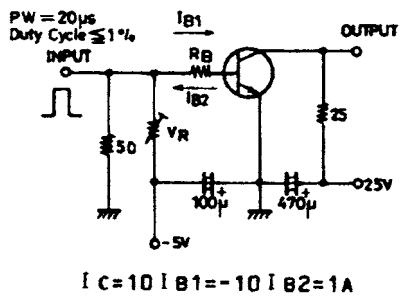
■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

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

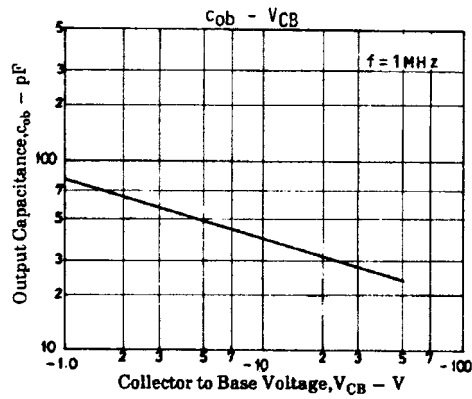
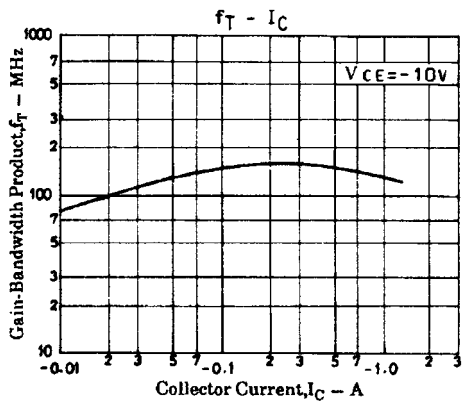
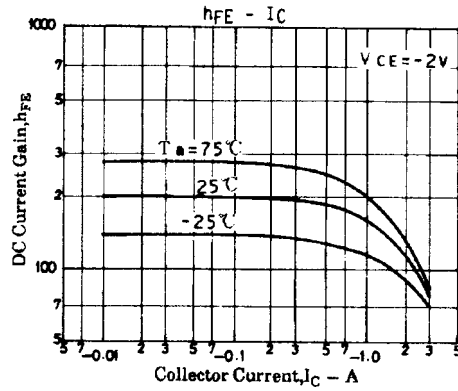
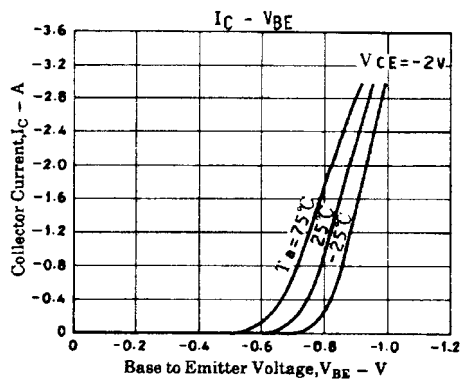
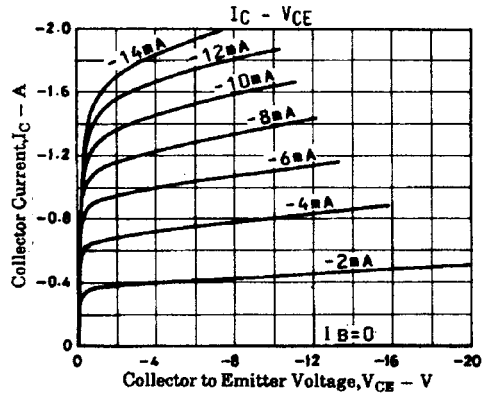
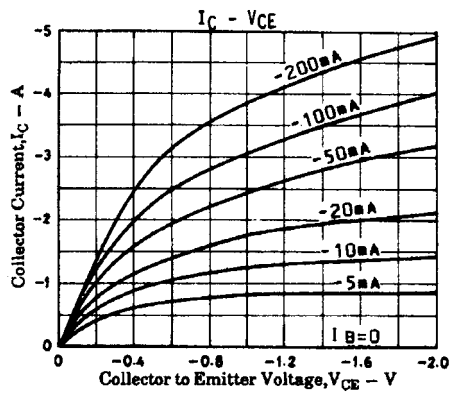
■ CLASSIFICATION OF  $h_{FE1}$

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

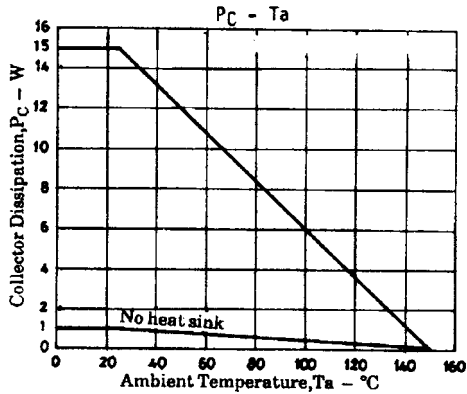
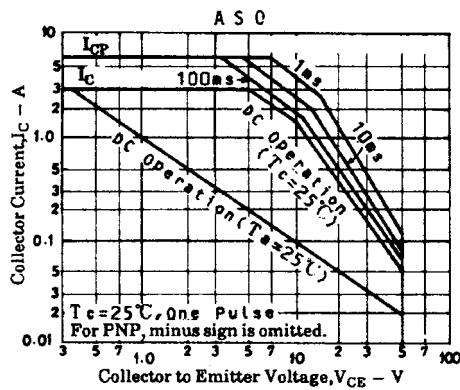
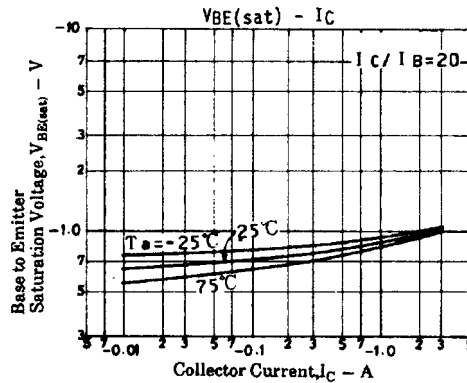
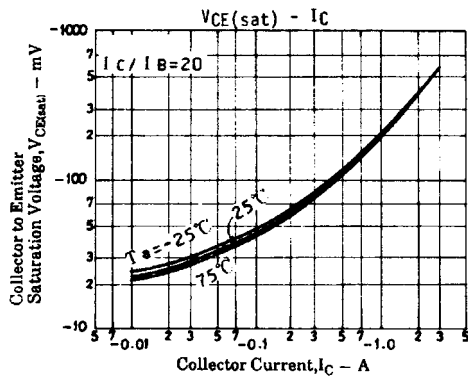
- TEST CIRCUIT FOR NPN (PNP: the polarity is reversed; Unit: resistance:  $\Omega$ , capacitance: F)



## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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