

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## UTC2SD1802 NPN EPITAXIAL PLANAR SILICON TRANSISTOR

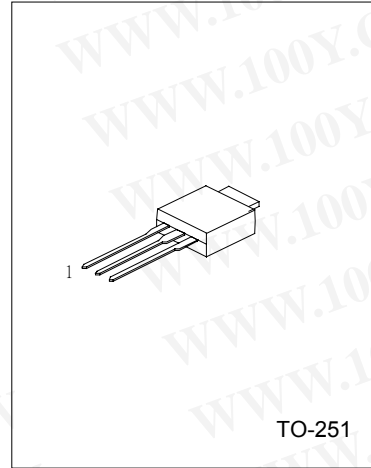
### HIGH CURRENT SWITCHING APPLICATION

#### DESCRIPTION

The UTC 2SD1802 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



1: BASE 2: COLLECTOR 3: EMITTER

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

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Power Dissipation	P <sub>c</sub>	1	W
T <sub>c</sub> =25°C		15	W
Collector Current(DC)	I <sub>c</sub>	3	A
Collector Current(PULSE)	I <sub>cp</sub>	6	A
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =40V, I <sub>E</sub> =0			1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			1	μA
DC Current Gain (note)	h <sub>FE1</sub> h <sub>FE2</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA V <sub>CE</sub> =2V, I <sub>C</sub> =3A	100 35		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA		150		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		25		pF
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =100mA		0.19	0.5	V
B-E Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =100mA		0.94	1.2	V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0	60			V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	50			V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6			V
Turn-on Time	t <sub>on</sub>	See test circuit		70		ns
Storage Time	t <sub>stg</sub>	See test circuit		650		ns
Fall Time	t <sub>f</sub>	See test circuit		35		ns

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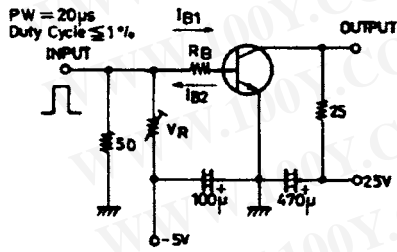
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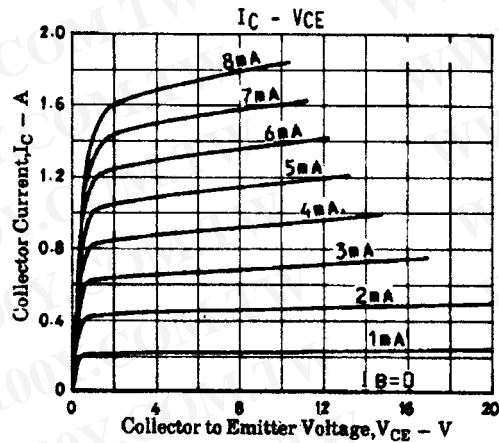
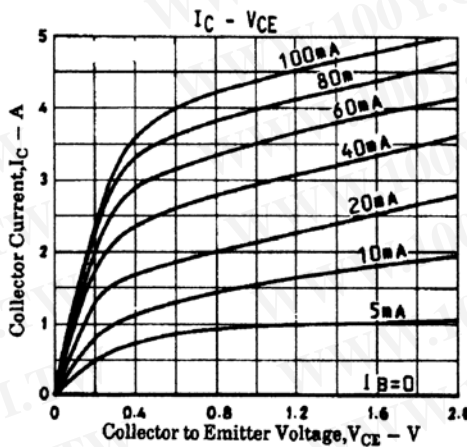
### CLASSIFICATION OF $h_{FE1}$

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

TEST CIRCUIT (Unit : resistance :  $\Omega$ , capacitance : F)



$$I_C = 10 \text{ mA} \quad I_{B1} = -10 \text{ mA} \quad I_{B2} = 1 \text{ mA}$$



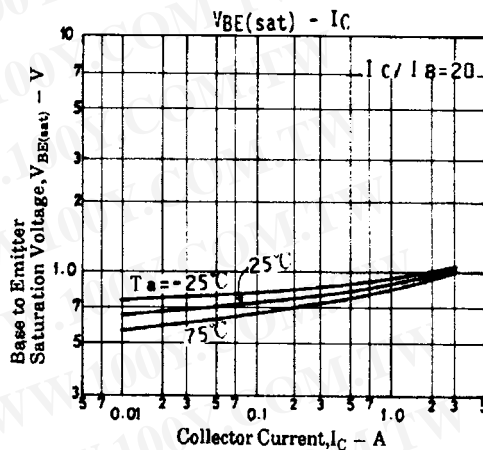
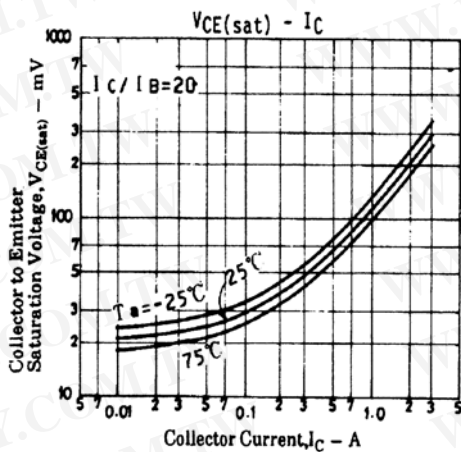
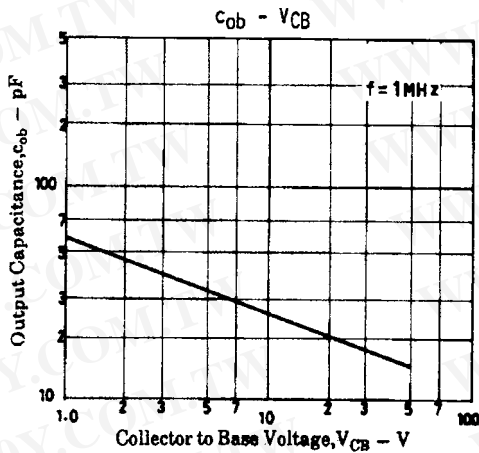
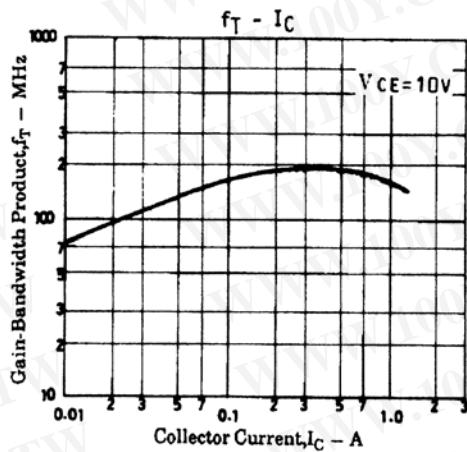
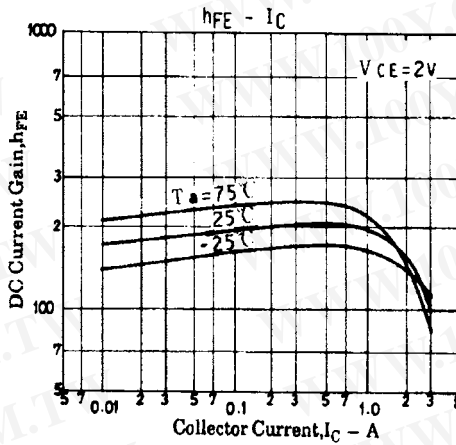
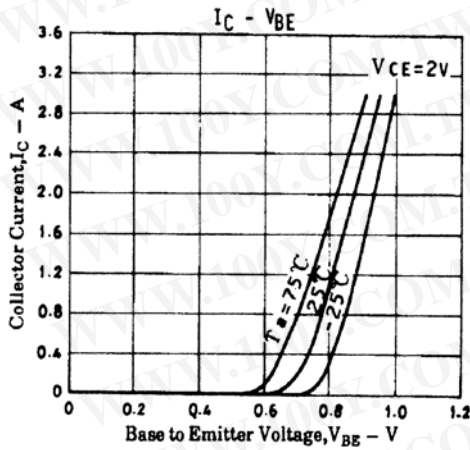
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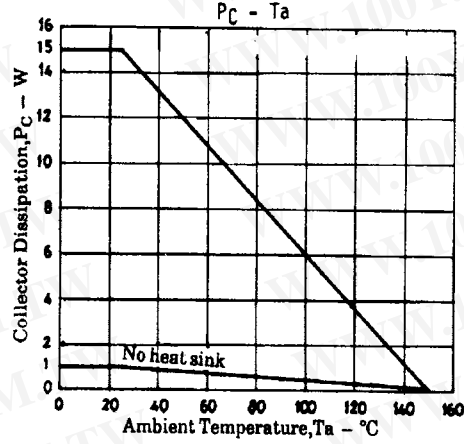
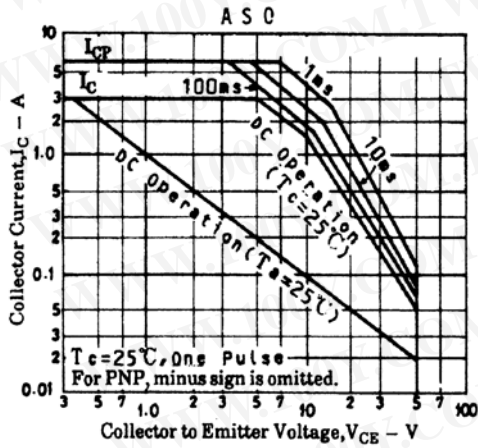
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