



## 2SD2136

## NPN SILICON TRANSISTOR

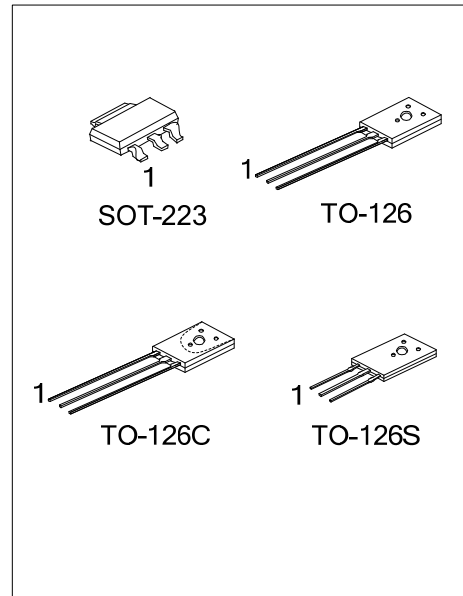
### POWER TRANSISTOR

#### DESCRIPTION

The UTC **2SD2136** is designed for power application.

#### FEATURES

- \* High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity.
- \* Low collector to emitter saturation voltage  $V_{CE(SAT)}$ .
- \* Allowing supply with the radial taping.



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	2SD2136G-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SD2136L-x-T60-K	2SD2136G-x-T60-K	TO-126	B	C	E	Bulk
2SD2136L-x-T6C-K	2SD2136G-x-T6C-K	TO-126C	B	C	E	Bulk
2SD2136L-x-T6S-K	2SD2136G-x-T6S-K	TO-126S	B	C	E	Bulk

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

<p>2SD2136G-x-AA3-R</p>	<p>(1) K: Bulk  (2) AA3: SOT-223T60: TO-126, T6C: TO-126C  T6S: TO-126S  (3) x: Refer to Classification of <math>h_{FE1}</math>  (4) L: Lead Free, G: Halogen Free</p>
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#### MARKING

SOT-223	TO-126 / TO-126C / TO-126S



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified )

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V <sub>CBO</sub>	60	V
Collector-Emitter Voltage		V <sub>CEO</sub>	60	V
Emitter-Base Voltage		V <sub>EBO</sub>	6	V
Collector Current		I <sub>C</sub>	3	A
Peak Collector Current		I <sub>CP</sub>	5	A
Collector Dissipation	SOT-223	P <sub>C</sub>	1	W
	TO-126/TO-126C		1.5	W
	TO-126S			
Junction Temperature		T <sub>J</sub>	150	°C
Storage Temperature		T <sub>STG</sub>	-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.

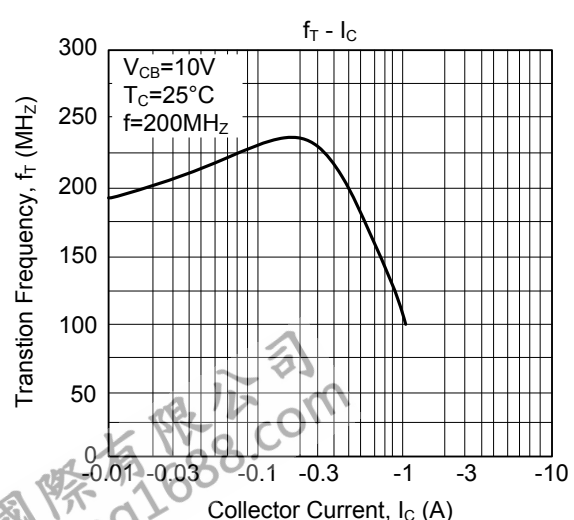
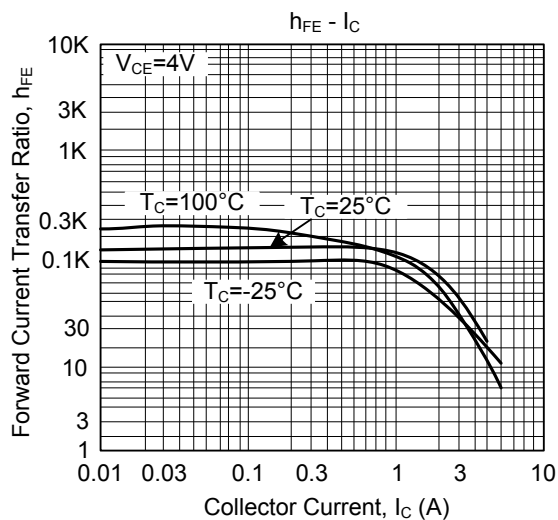
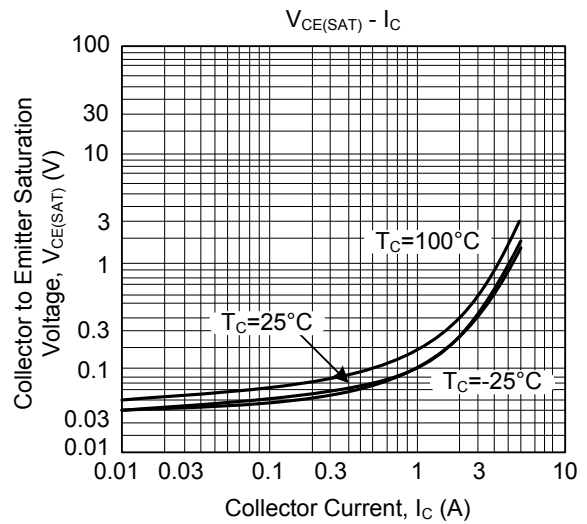
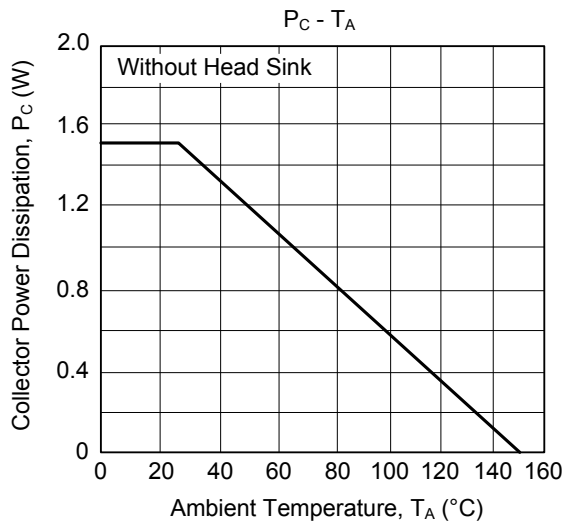
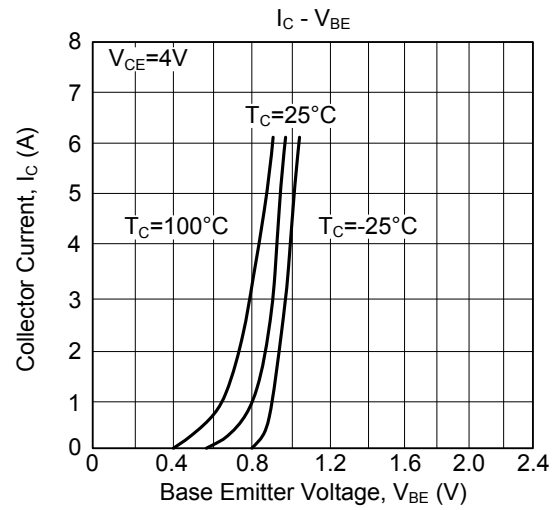
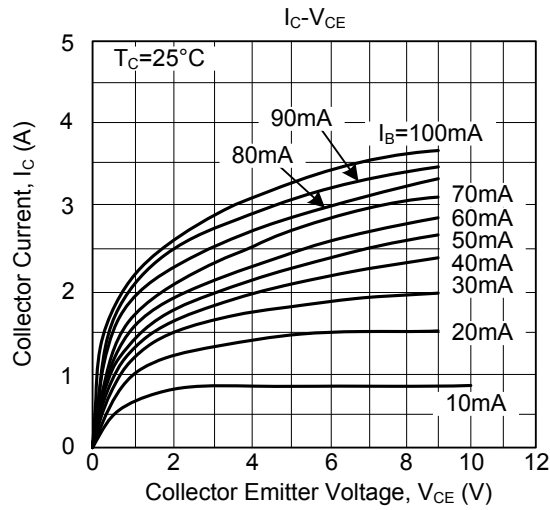
■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =30mA, I <sub>B</sub> =0	60			V
Collect Cutoff Current	I <sub>CEO</sub>	V <sub>CE</sub> =60V, I <sub>B</sub> =0			300	μA
Collect Cutoff Current	I <sub>CES</sub>	V <sub>CE</sub> =60 V, V <sub>BE</sub> =0			200	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =6 V, I <sub>C</sub> =0			1	mA
DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =1A	40		250	
	h <sub>FE2</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =3A	10			
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =0.375A			1.2	V
Base-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =3A			1.8	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =15V, I <sub>E</sub> =0.1A, f =200MHz		220		MHz
Turn On Time	t <sub>ON</sub>	I <sub>C</sub> = 1A, I <sub>B1</sub> =0.1A, I <sub>B2</sub> =0.1A		0.5		μS
Storage Time	t <sub>S</sub>			2.5		μS
Fall Time	t <sub>F</sub>			0.4		μS

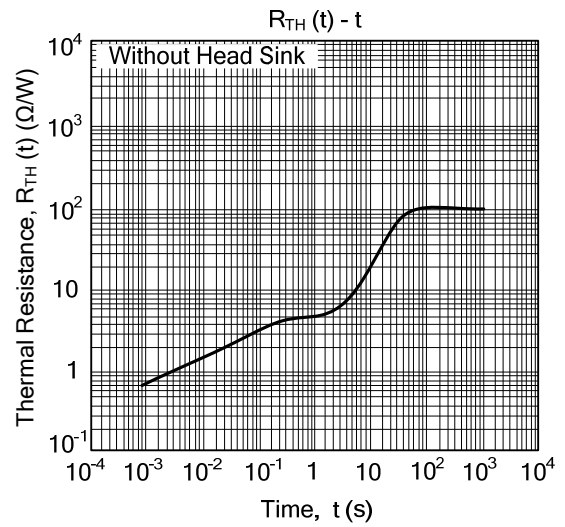
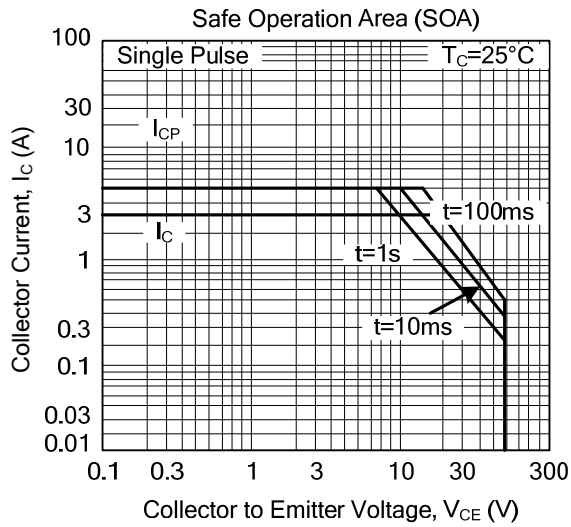
■ CLASSIFICATION OF h<sub>FE1</sub>

RANK	P	Q	R
RANGE	40-90	70-150	120-250

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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