



# 2SD1664

## NPN SILICON TRANSISTOR

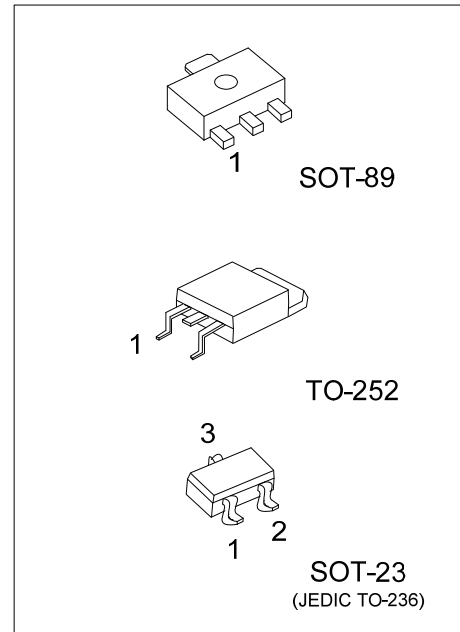
### MEDIUM POWER NPN TRANSISTOR

■ DESCRIPTION

The UTC **2SD1664** is an epitaxial planar type NPN silicon transistor.

■ FEATURES

- \*Low  $V_{CE(SAT)}$ :  $V_{CE(SAT)} = 0.15V(Typ.)$   
( $I_C/I_B = 500mA/50mA$ )
- \* Complement the 2SB1132.



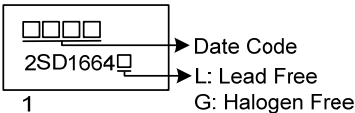
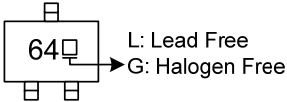
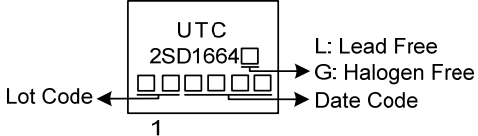
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD1664L-x-AB3-R	2SD1664G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD1664L-x-AE3-R	2SD1664G-x-AE3-R	SOT-23	B	E	C	Tape Reel
2SD1664L-x-TN3-R	2SD1664G-x-TN3-R	TO-252	B	C	E	Tape Reel

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

<p>2SD1664G-x-AB3-R</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p>	<p>(1) R: Tape Reel (2) AB3: SOT-89, AE3: SOT-23, TN3: TO-252 (3) x: refer to Classification of <math>h_{FE}</math> (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING

PACKAGE	MARKING
SOT-89	 <p> <span style="margin-left: 100px;">→</span> Date Code  <span style="margin-left: 100px;">→</span> L: Lead Free  <span style="margin-left: 100px;">→</span> G: Halogen Free                 </p>
SOT-23	 <p> <span style="margin-left: 100px;">→</span> L: Lead Free  <span style="margin-left: 100px;">→</span> G: Halogen Free                 </p>
TO-252	 <p> <span style="margin-left: 100px;">→</span> L: Lead Free  <span style="margin-left: 100px;">→</span> G: Halogen Free  <span style="margin-left: 100px;">→</span> Date Code  <span style="margin-left: 10px;">←</span> Lot Code                 </p>

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

PARAMETER		SYMBOL	RATING	UNIT
Collector-Base Voltage		V <sub>CB0</sub>	40	V
Collector-Emitter Voltage		V <sub>CEO</sub>	32	V
Emitter-Base Voltage		V <sub>EBO</sub>	5	V
Collector Current	DC	I <sub>C</sub>	1	A
Collector Current (Duty=1/2, P <sub>W</sub> =20ms)	Pulse		2	A
Collector Power Dissipation	SOT-89	P <sub>C</sub>	0.5	W
	SOT-23		0.3	W
	TO-252		1.9	W
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.

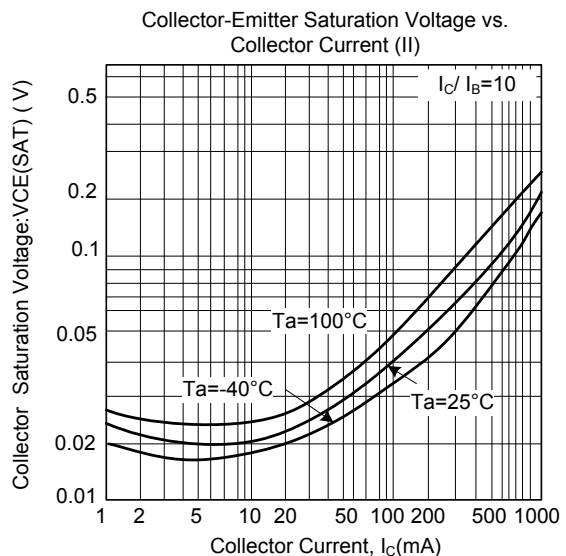
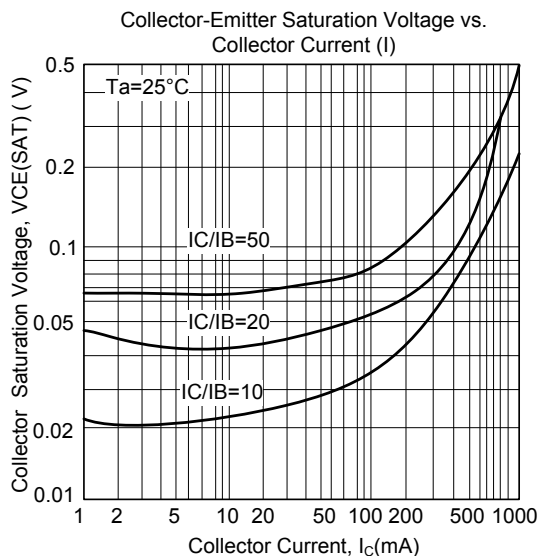
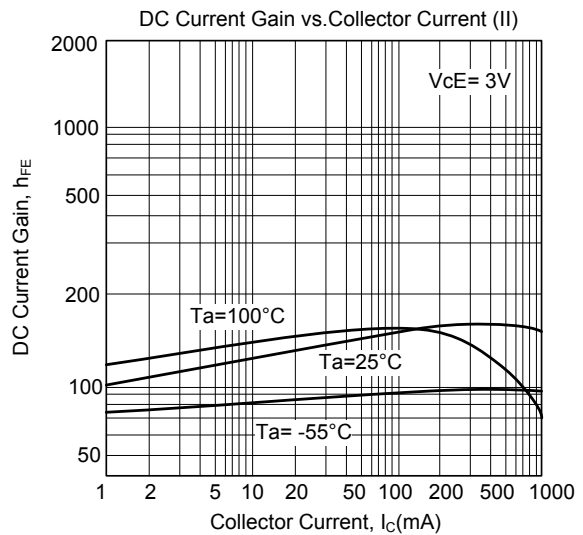
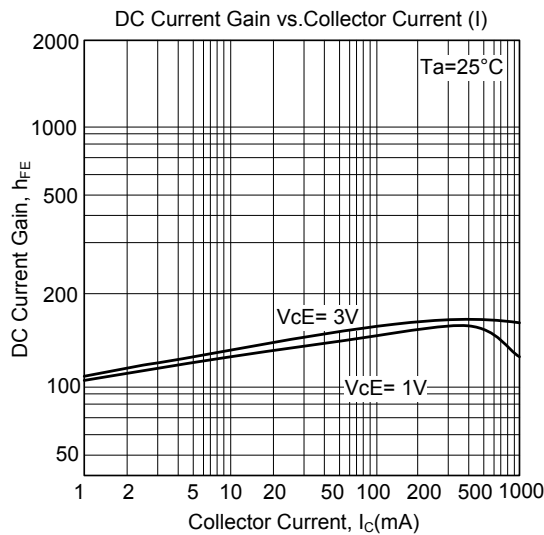
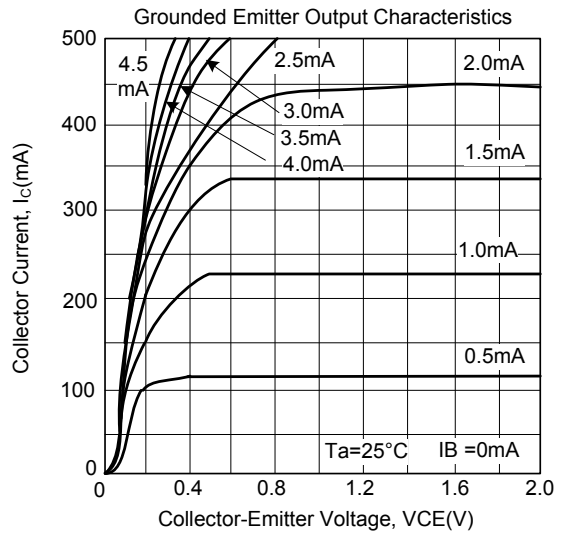
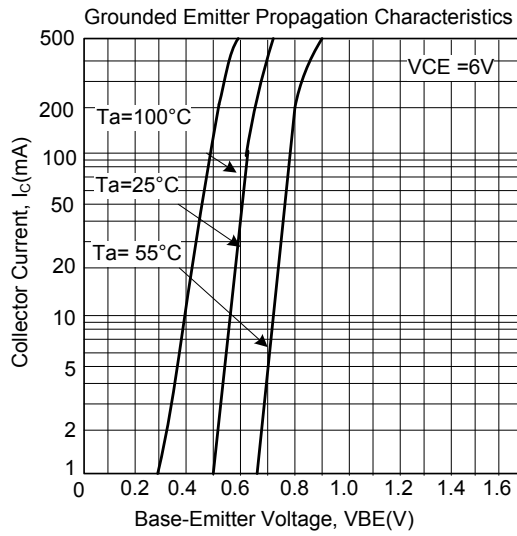
■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Breakdown Voltage	BV <sub>CB0</sub>	I <sub>C</sub> = 50μA	40			V
Collector Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 1mA	32			V
Emitter Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =50μA	5			V
Collector Cut-Off Current	I <sub>CB0</sub>	V <sub>CB</sub> =20V			0.5	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 4V			0.5	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 100mA	82		390	
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> /I <sub>B</sub> =500mA /50mA		0.15	0.4	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>E</sub> =-50mA, f=100MHz		150		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0A, f=1MHz		15		pF

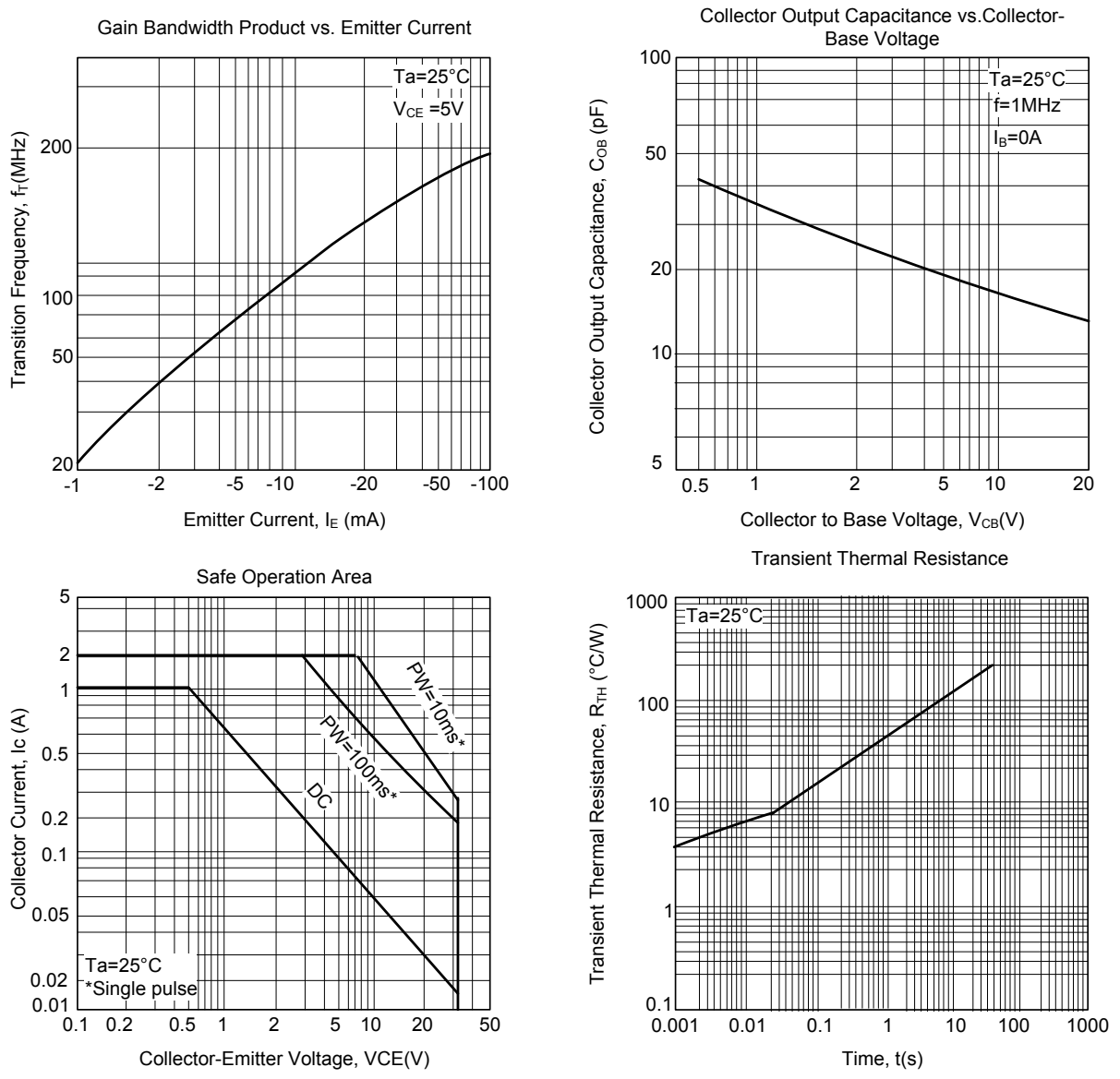
■ CLASSIFICATION OF h<sub>FE</sub>

RANK	P	Q	R
RANGE	82-180	120-270	180-390

## TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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