



2SD1664

NPN SILICON TRANSISTOR

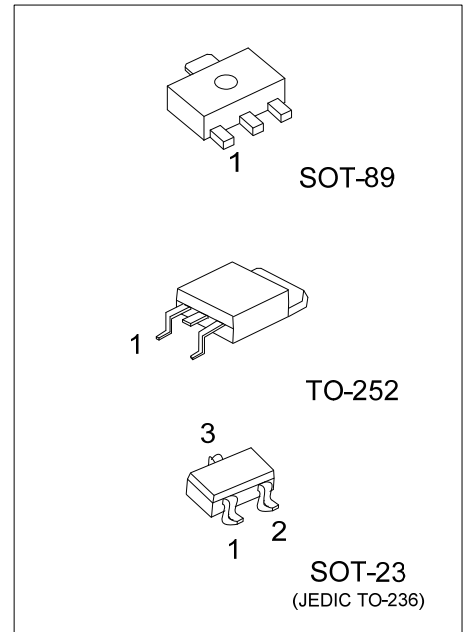
MEDIUM POWER NPN TRANSISTOR

■ 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

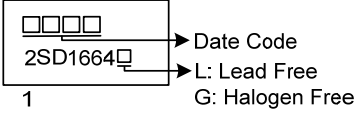
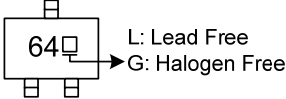
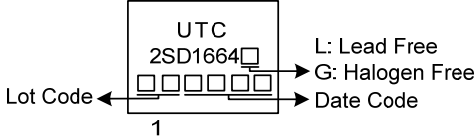
<p>2SD1664G-x-AB3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Rank (4) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AB3: SOT-89, AE3: SOT-23, TN3: TO-252 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

PACKAGE	MARKING
SOT-89	 <p> Date Code L: Lead Free G: Halogen Free </p>
SOT-23	 <p> L: Lead Free G: Halogen Free </p>
TO-252	 <p> Lot Code UTC 2SD1664 L: Lead Free G: Halogen Free Date Code </p>

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

PARAMETER		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	40	V
Collector-Emitter Voltage		V_{CEO}	32	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	1	A
Collector Current (Duty=1/2, $P_W=20\text{ms}$)	Pulse		2	A
Collector Power Dissipation	SOT-89	P_C	0.5	W
	SOT-23		0.3	W
	TO-252		1.9	W
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.

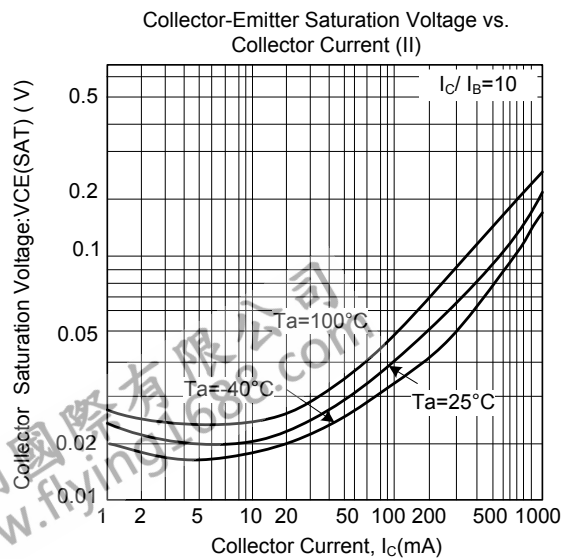
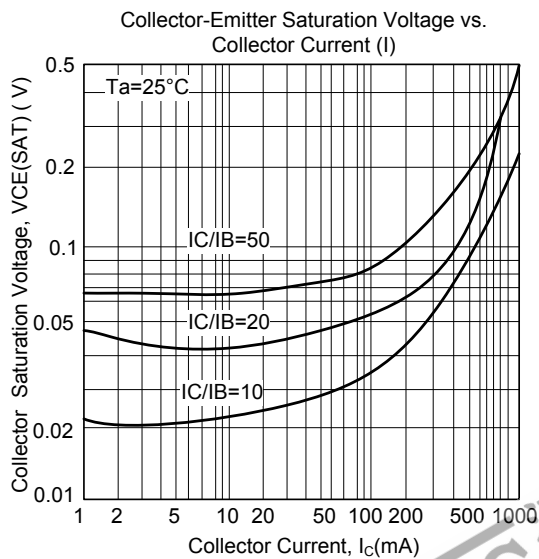
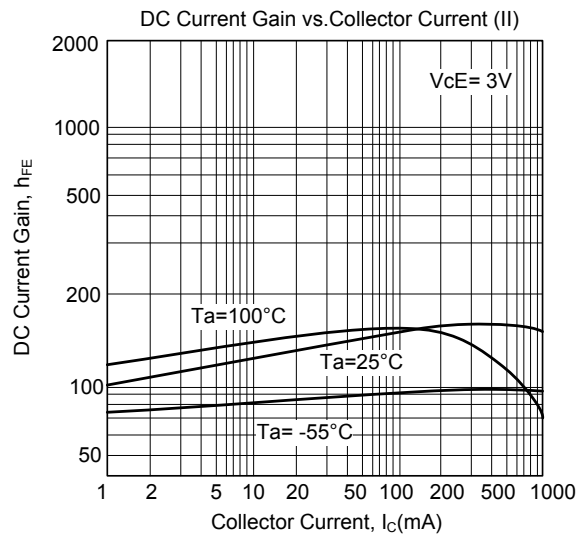
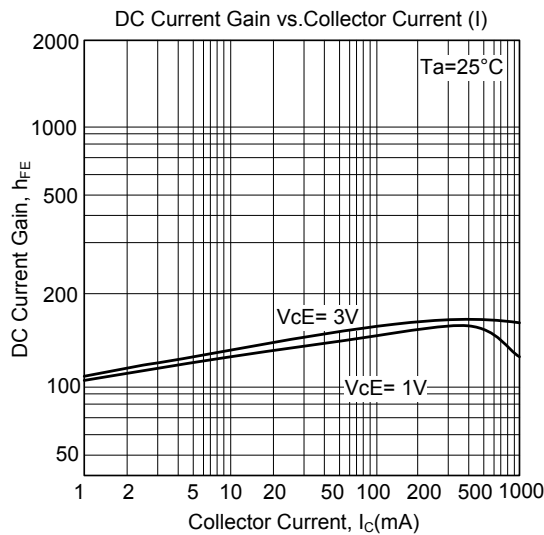
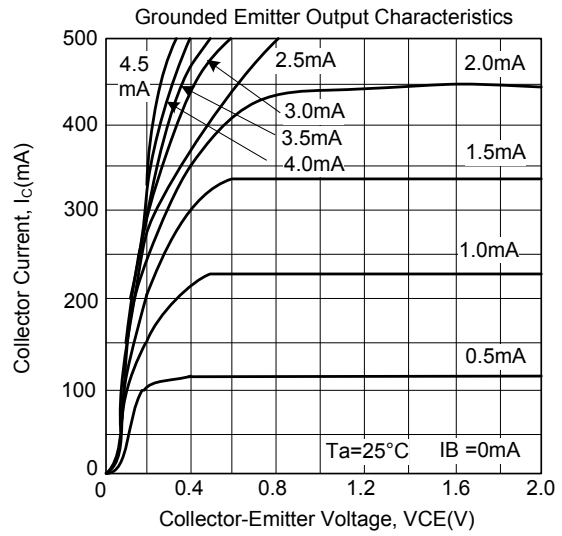
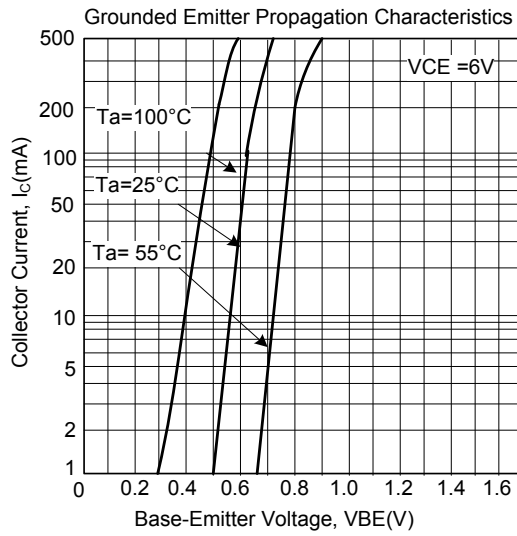
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Breakdown Voltage	BV_{CBO}	$I_C=50\mu\text{A}$	40			V
Collector Emitter Breakdown Voltage	BV_{CEO}	$I_C=1\text{mA}$	32			V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E=50\mu\text{A}$	5			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=20\text{V}$			0.5	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4\text{V}$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=3\text{V}, I_C=100\text{mA}$	82		390	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C/I_B=500\text{mA}/50\text{mA}$		0.15	0.4	V
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_E=-50\text{mA}, f=100\text{MHz}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0\text{A}, f=1\text{MHz}$		15		pF

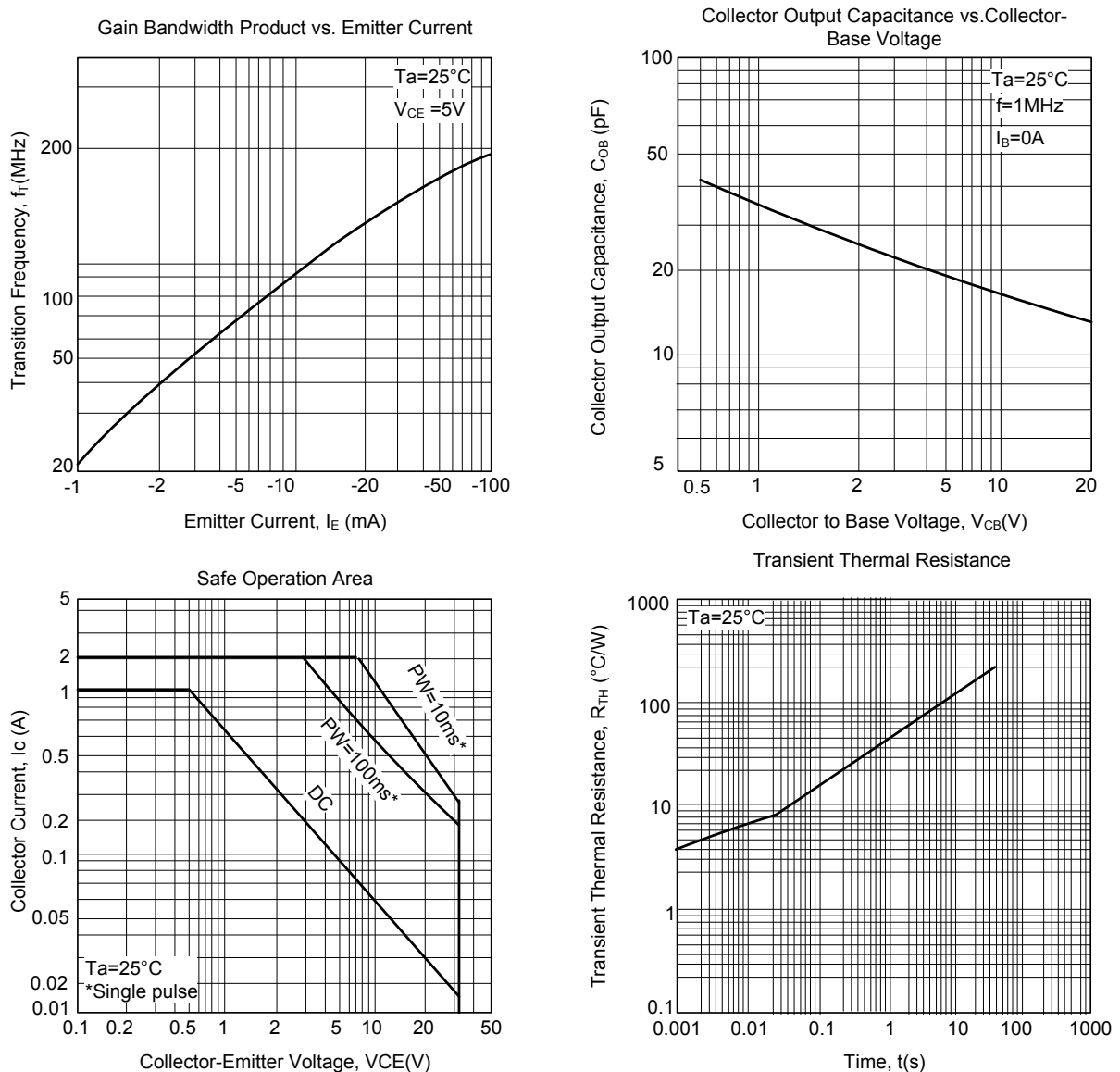
■ CLASSIFICATION OF h_{FE}

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

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



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