



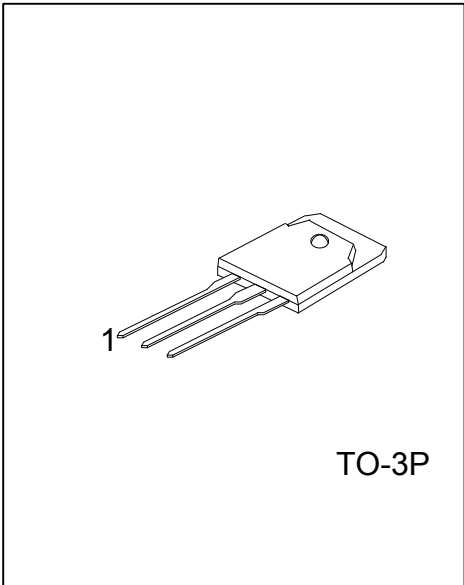
# 2SC3320

## NPN EPITAXIAL SILICON TRANSISTOR

### HIGH VOLTAGE HIGH SPEED SWITCHING

■ FEATURES

- \* High voltage, high speed switching
- \* High reliability



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SC3320L-x-T3P-T	2SC3320L-x-T3P-T	TO-3P	B	C	E	Tube

<p>2SC3320L-x-T3P-T</p>	<p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Rank</p> <p>(4)Lead Free</p>	<p>(1) T: Tube</p> <p>(2) T3P: TO-3P</p> <p>(3) x: refer to Classification of <math>h_{FE1}</math></p> <p>(4) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS ( $T_c = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector Base Voltage	$V_{CBO}$	500	V
Collector Emitter Voltage	$V_{CEO}$	400	V
	$V_{CEO(SUS)}$	400	V
Emitter Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	15	A
Base Current	$I_B$	5	A
Power Dissipation	$P_D$	80	W
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

Note 1. 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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	$\theta_{JC}$	1.55	$^\circ\text{C}/\text{W}$

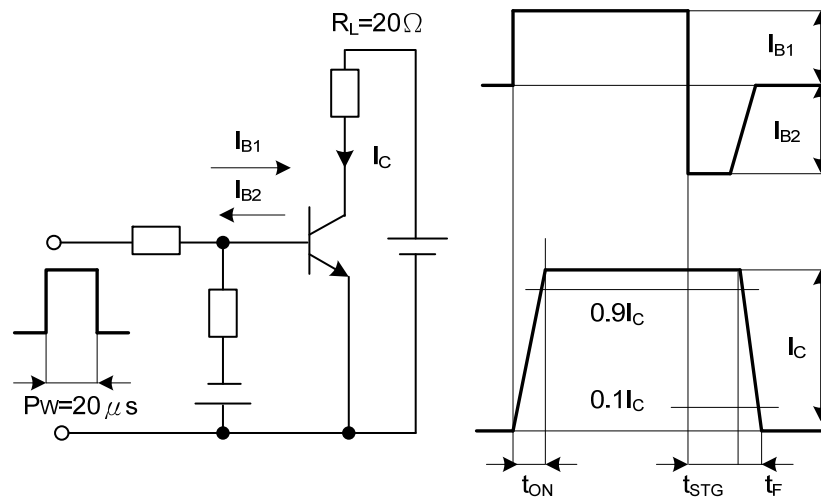
■ ELECTRICAL SPECIFICATIONS ( $T_c=25^\circ\text{C}$ , Unless Otherwise Specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Voltage	$V_{CBO}$	$I_{CBO}=1\text{mA}$	500			V
Collector Emitter Voltage	$V_{CEO}$	$I_{CEO}=10\text{mA}$	400			V
	$V_{CEO(SUS)}$	$I_C=0.2\text{A}$	400			V
Emitter Base Voltage	$V_{EBO}$	$I_{EBO}=1\text{mA}$	7			V
Collector Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=6\text{A}, I_B=1.2\text{A}$			1	V
Base Emitter Saturation Voltage	$V_{BE(SAT)}$				1.5	V
Collector Cut-off Current	$I_{CBO}$	$V_{CBO}=500\text{V}$			1	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{EBO}=7\text{V}$			1	mA
DC Current Gain	$h_{FE}$	$I_C=6\text{A}, V_{CE}=5\text{V}$	10		45	
Switching Time	$t_{ON}$	$I_C=7.5\text{A}, I_{B1}=1.5\text{A}, I_{B2}=-3\text{A}$ $R_L=20\Omega, P_w=20\mu\text{s}, \text{Duty} \leq 2\%$			0.5	$\mu\text{s}$
	$t_{STG}$				1.5	$\mu\text{s}$
	$t_F$				0.15	$\mu\text{s}$

■ CLASSIFICATION OF  $h_{FE}$

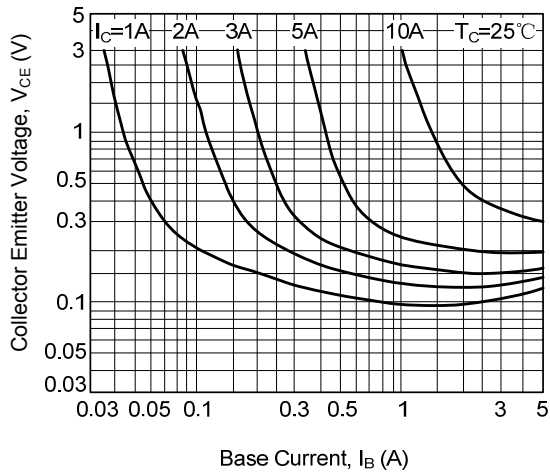
RANK	A	B	C	D	E	F
RANGE	10~15	15~20	20~25	25~30	30~35	35~45

■ SWITCHING TIME TEST CIRCUIT

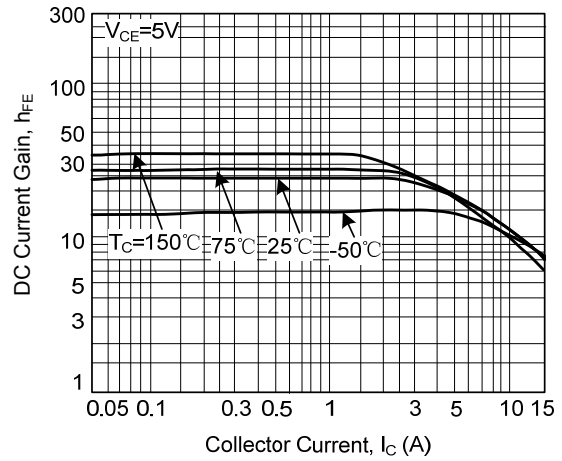


## TYPICAL CHARACTERISTICS

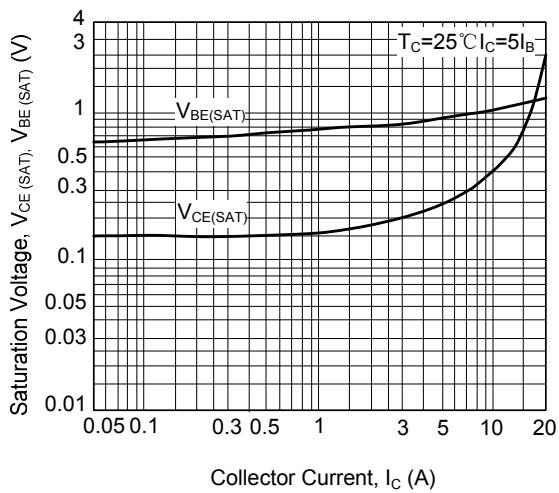
Collector Output Characteristics



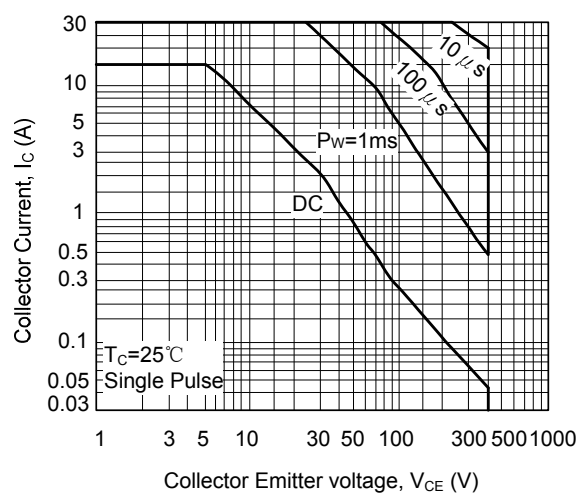
DC Current Gain



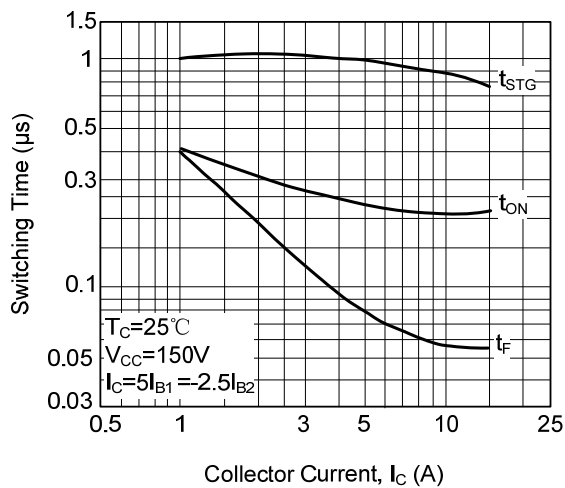
Base and Collector Saturation Voltage



Safe Operating Area



Switching Time



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