



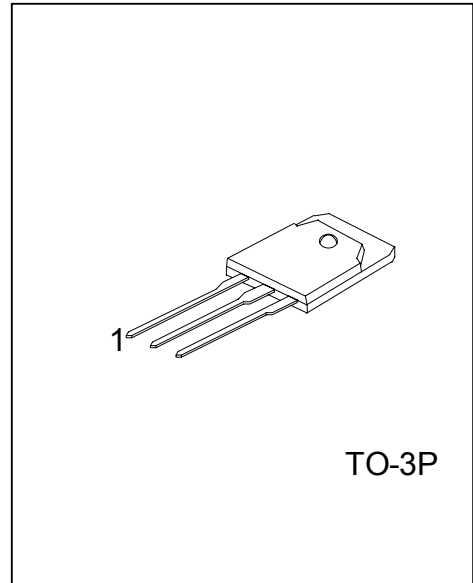
## 2SC3320

### NPN EPITAXIAL SILICON TRANSISTOR

## HIGH VOLTAGE HIGH SPEED SWITCHING

### ■ FEATURES

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



\*Pb-free plating product number:2SC3320L

### ■ ORDERING INFORMATION

Order Number		Pin Assignment			Package	Packing
Normal	Lead Free Plating	1	2	3		
2SC3320-T3P-F-T	2SC3320L-T3P-F-T	B	C	E	TO-3P	Tube

<p>2SC3320L-T3P-F-T</p>		<p>(1) Packing Type (2) Pin Assignment (3) Package Type (4) Lead Plating</p>	<p>(1) T: Tube (2) refer to Pin Assignment (3) T3P: TO-3P (4) L: Lead Free Plating, Blank: Pb/Sn</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	
Storage Temperature	$T_{STG}$	-40 ~ +150	

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.

2. The device is guaranteed to meet performance specification within  $0^\circ\text{C} \sim +70^\circ\text{C}$  operating temperature range and assured by design from  $-20^\circ\text{C} \sim +85^\circ\text{C}$ .

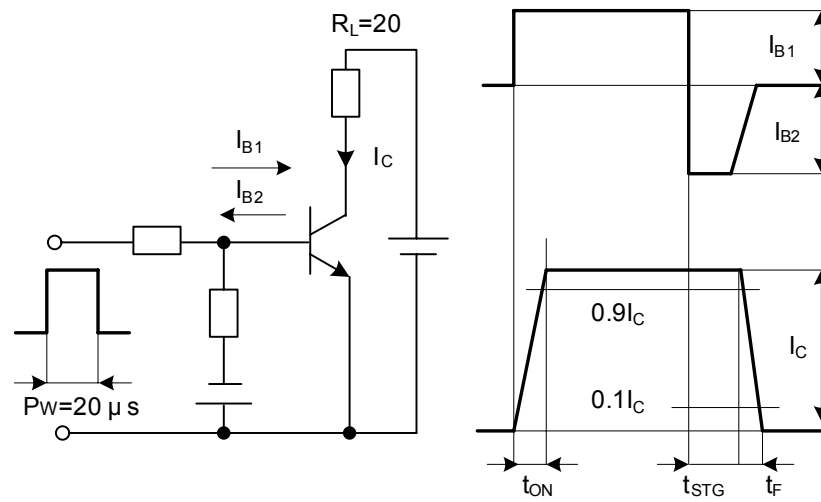
■ ELECTRICAL SPECIFICATIONS ( $T_c = 25^\circ\text{C}$ , Unless Otherwise Specified.)

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			
Switching Time	$t_{ON}$	$I_C = 7.5\text{A}$ , $I_{B1} = 1.5\text{A}$ , $I_{B2} = -3\text{A}$ $R_L = 20\Omega$ , $P_w = 20\mu\text{s}$ , Duty $\leq 2\%$			0.5	$\mu\text{s}$
	$t_{STG}$				1.5	$\mu\text{s}$
	$t_F$				0.15	$\mu\text{s}$

■ THERMAL CHARACTERISTICS

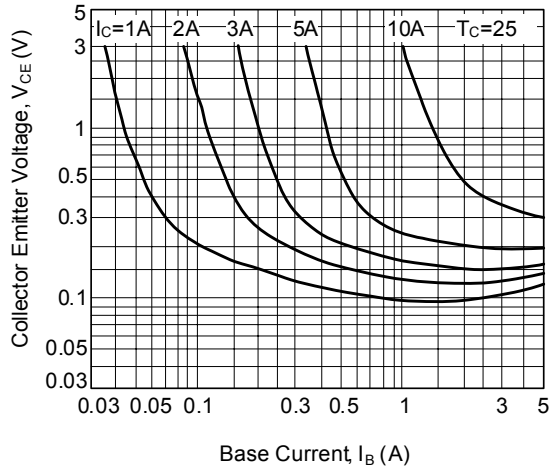
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction to Case	$\theta_{JC}$	1.55	/W

## ■ SWITCHING TIME TEST CIRCUIT

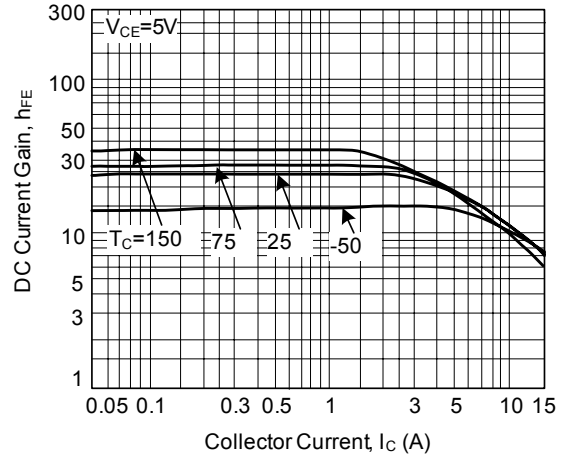


# ■ TYPICAL CHARACTERISTICS

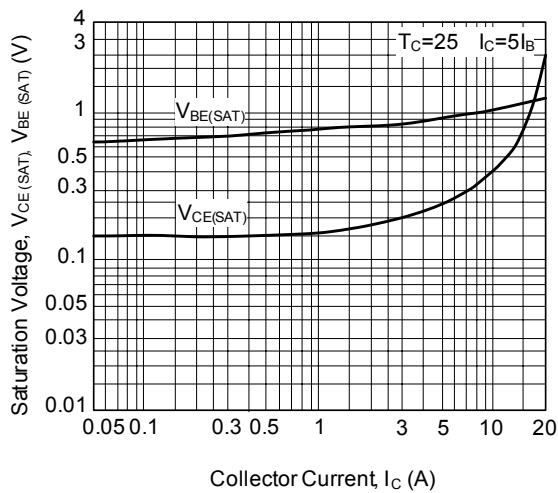
Collector Output Characteristics



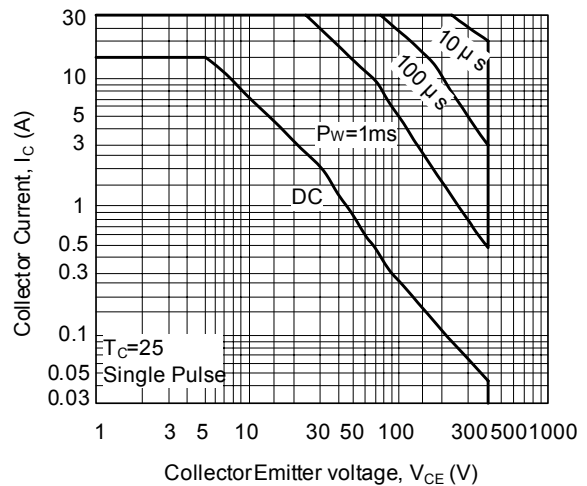
DC Current Gain



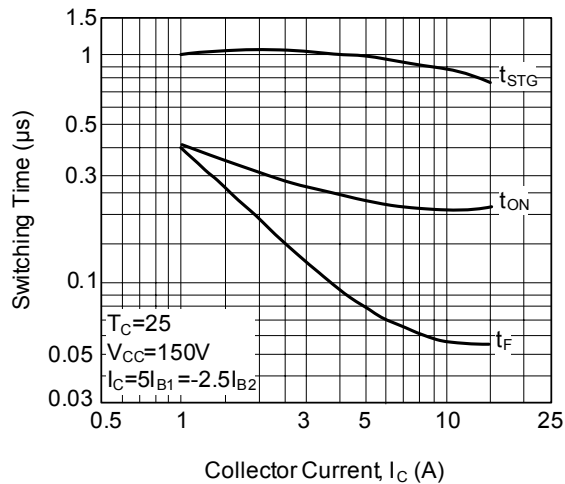
Base and Collector Saturation Voltage



Safe Operating Area



Switching Time



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