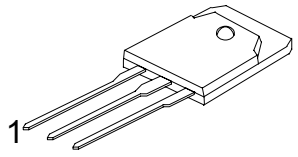
# 2SC3320

**NPN SILICON TRANSISTOR**

## HIGH VOLTAGE HIGH SPEED SWITCHING




TO-3P

*Pb-free plating product number:2SC3320L

### ■ FEATURES

* High voltage, high speed switching
* High reliability

### ■ ORDERING INFORMATION

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

| | |
|---|---|
| 2SC3320L-T3P-T<br>(1)Packing Type<br>(2)Package Type<br>(3)Lead Plating | (1) T: Tube<br>(2) T3P: TO-3P<br>(3) L: Lead Free Plating, Blank: Pb/Sn |

## ■ ABSOLUTE MAXIMUM RATINGS ($T_C$ = 25℃)

| 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 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.

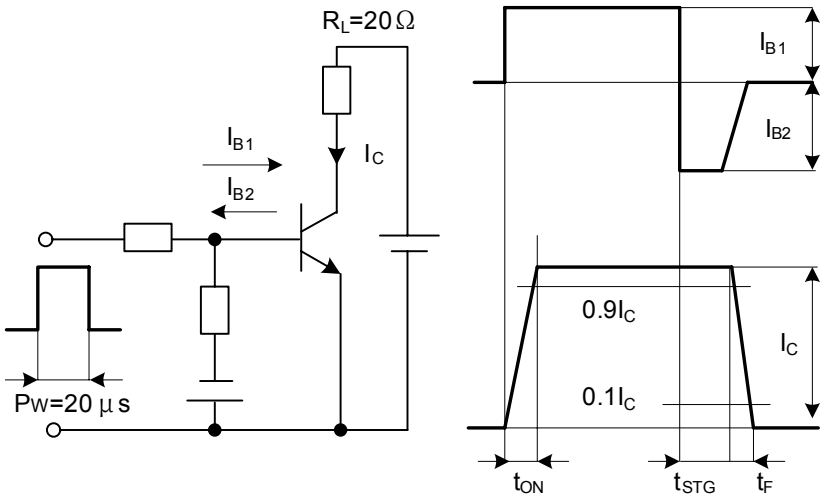
## ■ THERMAL DATA

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

## ■ ELECTRICAL SPECIFICATIONS ($T_C$ =25℃, Unless Otherwise Specified.)

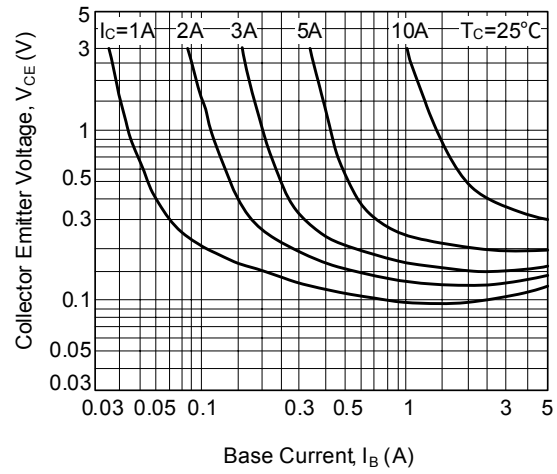
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | $I_{CBO}$=1mA | 500 | | | V |
| Collector Emitter Voltage | $V_{CEO}$ | $I_{CEO}$=10mA | 400 | | | V |
| | $V_{CEO(SUS)}$ | $I_C$=0.2A | 400 | | | V |
| Emitter Base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

■ SWITCHING TIME TEST CIRCUIT

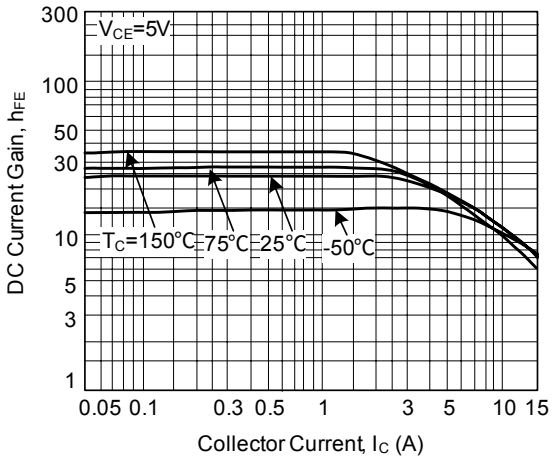


## ■ TYPICAL CHARACTERISTICS

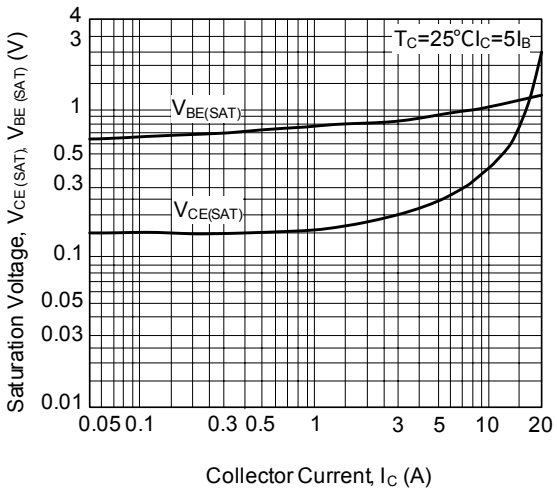
Collector Output Characteristics



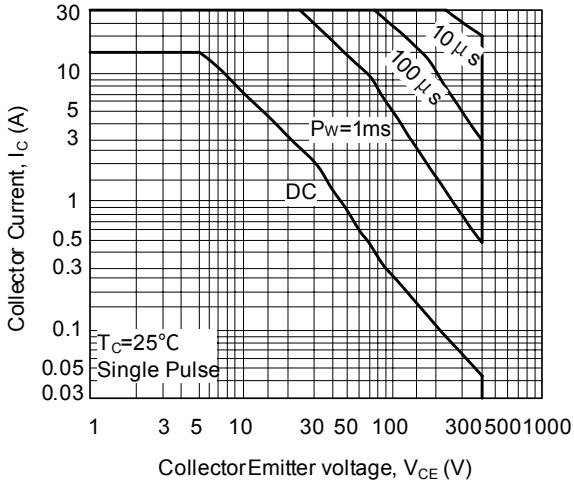

DC Current Gain




Base and Collector Saturation Voltage




Safe Operating Area




Switching Time