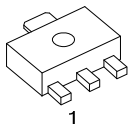
# 2SC4548

**NPN SILICON TRANSISTOR**

## HIGH VOLTAGE DRIVER APPLICATION




SOT-89

### ■ FEATURES

*High breakdown voltage.
*Excellent $h_{FE}$ linearity.

### ■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|---|---|---|---|---|---|---|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SC4548L-x-AB3-R | 2SC4548G-x-AB3-R | SOT-89 | B | C | E | Tape Reel |

Note: Pin Assignment: E: EMITTER C: COLLECTOR B: BASE

2SC4548L-x-AB3-R
(1)Packing Type
(2)Package Type
(3)Rank
(4)Lead Free

(1) R: Tape Reel
(2) AB3: SOT-89
(3) x: refer to Classification of $h_{FE}$
(4) G: Halogen Free, L: Lead Free

## ■ ABSOLUTE MAXIMUM RATINGS ($T_A$=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 400 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 400 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 200 | mA |
| Collector Current (PULSE) | $I_{CP}$ | 400 | mA |
| Collector Power Dissipation | $P_C$ | 1.3 | W |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature | $T_{STG}$ | -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.

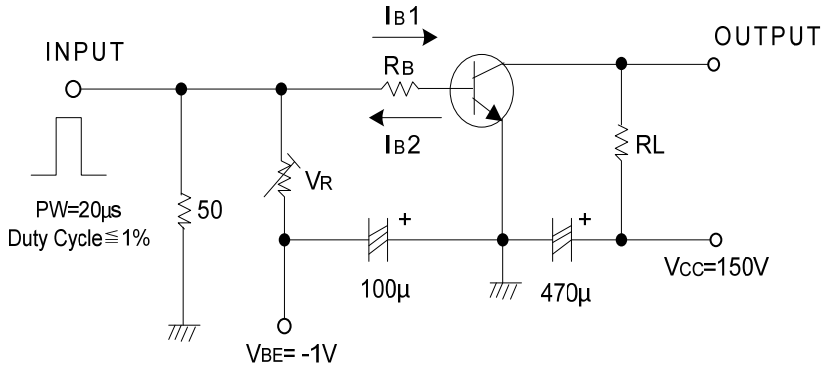
## ■ ELECTRICAL CHARACTERISTICS ($T_A$=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collect-Base Breakdown Voltage | $BV_{CBO}$ | $I_C$= 10μA,$I_E$=0 | 400 | | | V |
| Collect-Emitter Breakdown Voltage | $BV_{CEO}$ | $I_C$= 1mA,$I_B$=0,$R_{BE}$=∞ | 400 | | | V |
| Emitter-Base Breakdown Voltage | $BV_{EBO}$ | $I_E$= 10μA,$I_C$=0 | 5 | | | V |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$= 300V,$I_E$=0 | | | 0.1 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=4V,$I_C$=0 | | | 0.1 | μA |
| DC Current Transfer Ratio | $h_{FE}$ | $V_{CE}$=10V, $I_c$=50mA | 60 | | 200 | |
| Collect-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C$=50mA,$I_B$=5mA | | 0.6 | | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C$=50mA,$I_B$=5mA | | | 1.0 | V |
| Output Capacitance | $C_{OB}$ | $V_{CB}$=30V, f=1MHz | | 4 | | pF |
| Reverse Transfer Capacitance | $C_{RE}$ | $V_{CB}$=30V,f=1MHz | | 3 | | pF |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=30V,$I_C$=10mA | | 70 | | MHz |
| Turn-on Time | $T_{ON}$ | See test circuit | | 0.25 | | μs |
| Turn-off Time | $T_{OFF}$ | See test circuit | | 5.0 | | μs |

■ CLASSIFICATION OF $h_{FE}$

| RANK | D | E |
|---|---|---|
| RANGE | 60-120 | 100-200 |

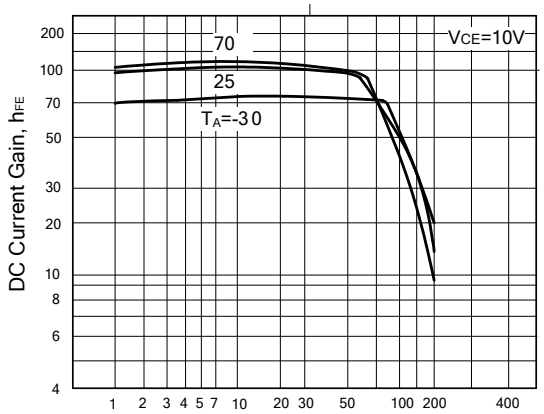
■ TEST CIRCUIT (Unit : resistance : Ω, capacitance : F)



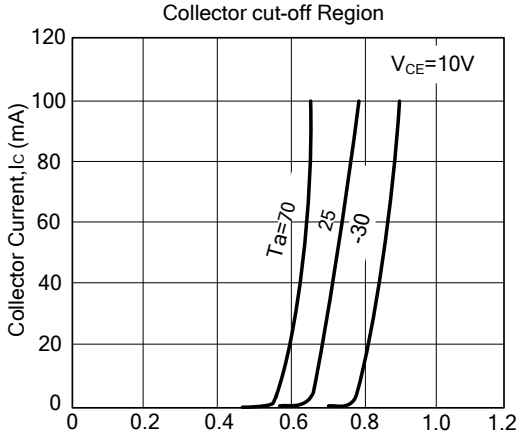

10IB1= -10IB2=Ic=50mA
RL=3kΩ,RB=200Ω at Ic= 50mA

## ■ TYPICAL CHARACTERISTICS

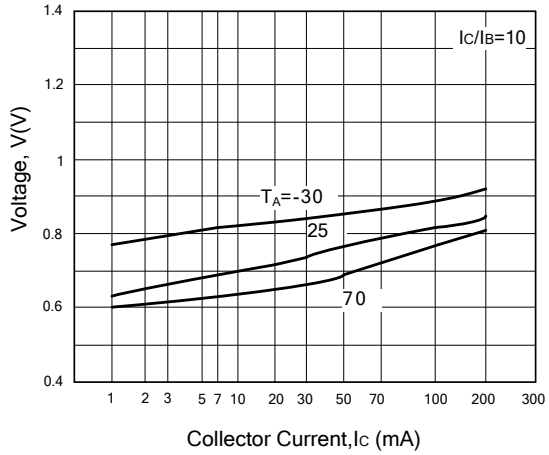
DC Current Gain



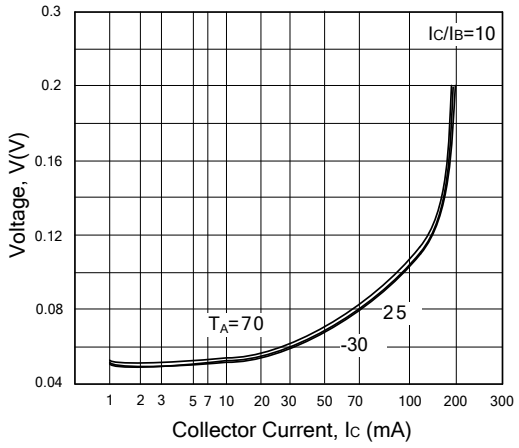

Collector cut-off Region

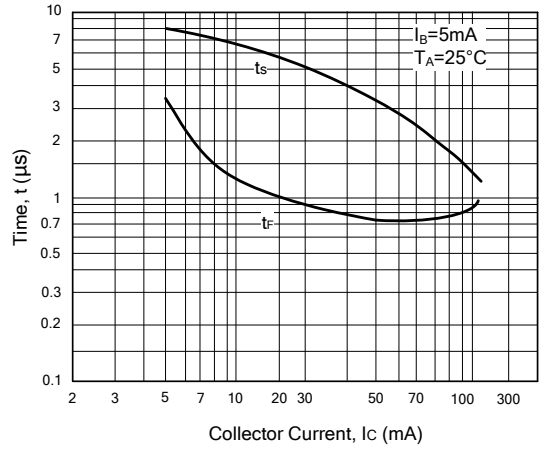


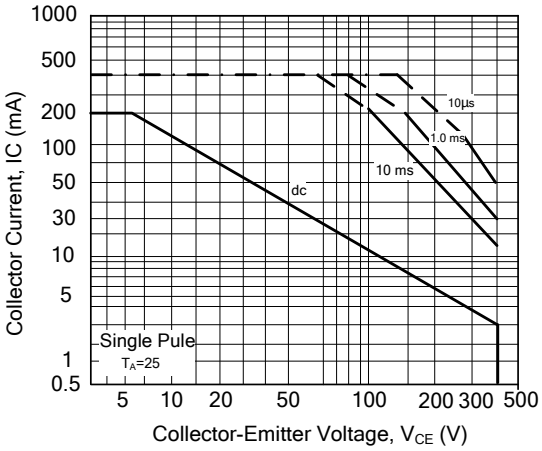

Base-Emitter Voltage




Collector-Emitter Saturation Region



## ■ TYPICAL CHARACTERISTICS

Collector Power Dissipation vs. Ambient Temperature