



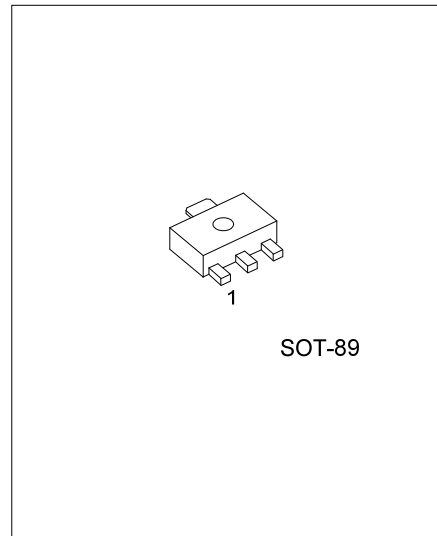
2SA1740

PNP SILICON TRANSISTOR

HIGH VOLTAGE DRIVER APPLICATION

■ FEATURES

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



■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|------------------|------------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SA1740L-x-AB3-R | 2SA1740G-x-AB3-R | SOT-89 | B | C | E | Tape Reel |

| | | |
|-------------------------|--|--|
| <p>2SA1740L-x-AB3-R</p> | <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Rank</p> <p>(4) Lead Free</p> | <p>(1) R: Tape Reel</p> <p>(2) AB3: SOT-89</p> <p>(3) x: refer to Classification of h_{FE}</p> <p>(4) G: Halogen Free, L: Lead Free</p> |
|-------------------------|--|--|

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

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|-----------|------------|--------------------|
| Collector-Base Voltage | V_{CB0} | -400 | V |
| Collector-Emitter Voltage | V_{CE0} | -400 | V |
| Emitter-Base Voltage | V_{EB0} | -5 | V |
| Collector Current | I_C | -200 | mA |
| Collector Current (PULSE) | I_{CP} | -400 | mA |
| Collector Power Dissipation | P_C | 0.5 | 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 |
|------------------------------------|---------------|---|------|------|------|---------------|
| Collect-Base Breakdown Voltage | BV_{CB0} | $I_C = -10\mu\text{A}, I_E = 0$ | -400 | | | V |
| Collect-Emitter Breakdown Voltage | BV_{CE0} | $I_C = -1\text{mA}, I_B = 0, R_{BE} = \infty$ | -400 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EB0} | $I_E = -10\mu\text{A}, I_C = 0$ | -5 | | | V |
| Collector Cutoff Current | I_{CB0} | $V_{CB} = -300\text{V}, I_E = 0$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{EB0} | $V_{EB} = -4\text{V}, I_C = 0$ | | | -0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = -10\text{V}, I_C = -50\text{mA}$ | 60 | | 200 | |
| Collect-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = -50\text{mA}, I_B = -5\text{mA}$ | | -0.8 | | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C = -50\text{mA}, I_B = -5\text{mA}$ | | | -1.0 | V |
| Output Capacitance | C_{OB} | $V_{CB} = -30\text{V}, f = 1\text{MHz}$ | | 5 | | pF |
| Reverse Transfer Capacitance | C_{RE} | $V_{CB} = -30\text{V}, f = 1\text{MHz}$ | | 4 | | pF |
| Gain-Bandwidth Product | f_T | $V_{CE} = -30\text{V}, I_C = -10\text{mA}$ | | 70 | | MHz |
| Turn-On Time | t_{ON} | See test circuit | | 0.25 | | μs |
| Turn-Off Time | t_{OFF} | See test circuit | | 5.0 | | μs |

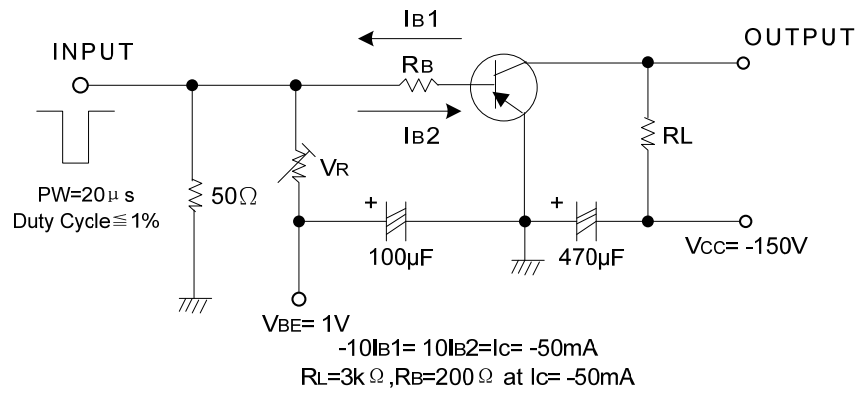
■ CLASSIFICATION OF h_{FE}

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

2SA1740

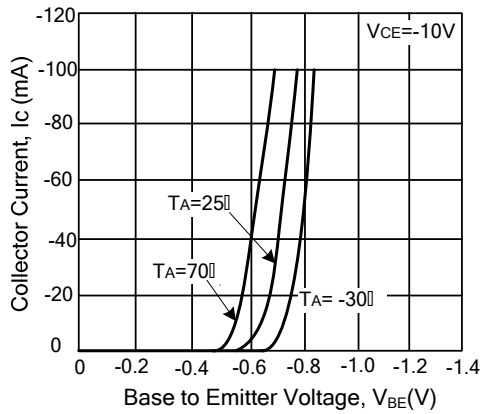
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■ TEST CIRCUIT

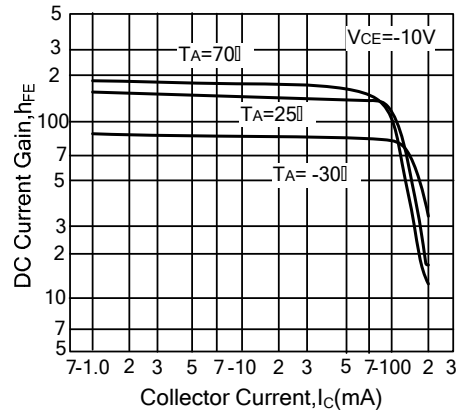


TYPICAL CHARACTERISTICS

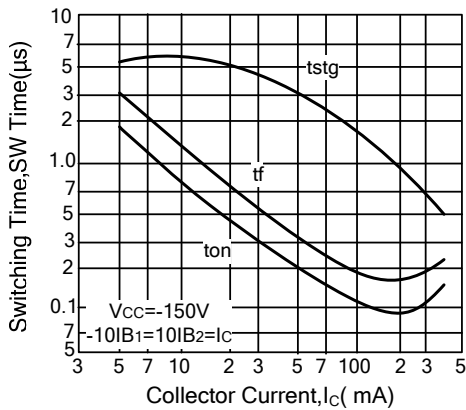
Collector Current vs. Base to Emitter Voltage



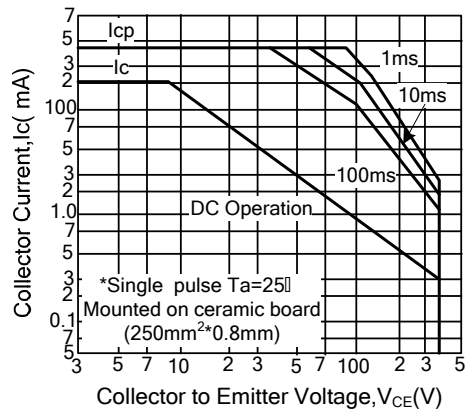
DC Current Gain vs. Collector Current



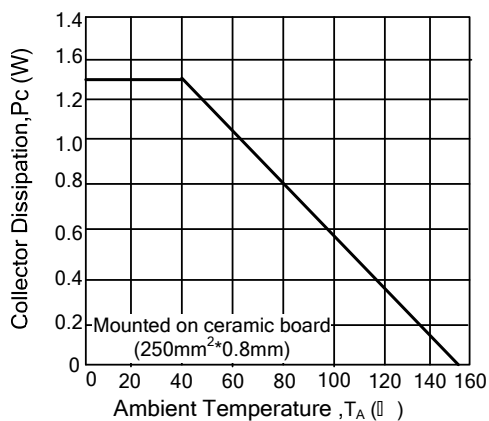
Switch Time vs. Collector Current



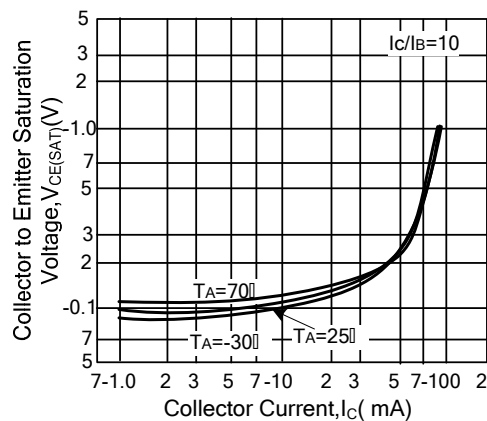
Collector Current vs. Collector to Emitter Voltage



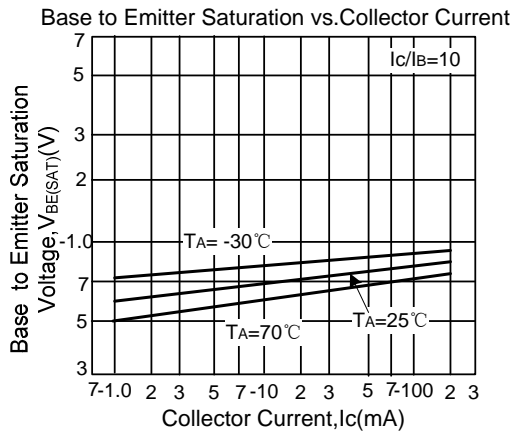
Collector Dissipation vs. Ambient Temperature



Collector to Emitter Saturation Voltage vs. Collector Current



■ TYPICAL CHARACTERISTICS(Cont.)



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