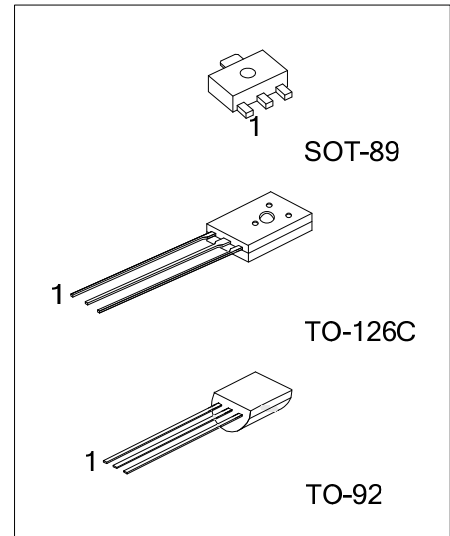


**2N6718****NPN SILICON TRANSISTOR****NPN GENERAL PLANAR TRANSISTOR****DESCRIPTION**

The UTC **2N6718** is designed for general purpose medium power amplifier and switching applications.

**FEATURES**

- \* High Power: 850mW
- \* High Current: 1A

**ORDERING INFORMATION**

| Ordering Number |                 | Package | Pin Assignment |   |   | Packing   |
|-----------------|-----------------|---------|----------------|---|---|-----------|
| Lead Free       | Halogen Free    |         | 1              | 2 | 3 |           |
| 2N6718L-x-AB3-R | 2N6718G-x-AB3-R | SOT-89  | B              | C | E | Tape Reel |
| 2N6718L-x-T6C-K | 2N6718G-x-T6C-K | TO-126C | E              | C | B | Bulk      |
| 2N6718L-x-T92-B | 2N6718G-x-T92-B | TO-92   | E              | C | B | Tape Box  |
| 2N6718L-x-T92-K | 2N6718G-x-T92-K | TO-92   | E              | C | B | Bulk      |

Note: Pin Assignment: B: Base C: Collector E: Emitter

|                                                                                                                                                             |                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2N6718G-x-AB3-R</p> <ul style="list-style-type: none"><li>(1) Packing Type</li><li>(2) Package Type</li><li>(3) Rank</li><li>(4) Green Package</li></ul> | <ul style="list-style-type: none"><li>(1) R: Tape Reel, B: Tape Box, K: Bulk</li><li>(2) AB3: SOT-89, T6C: TO-126C, T92: TO-92</li><li>(3) x: refer to Classification of <math>h_{FE2}</math></li><li>(4) G: Halogen Free and Lead Free, L: Lead Free</li></ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**MARKING**

| SOT-89                                                                 | TO-126C                                                                    | TO-92                                                                     |
|------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <p>□□□□ → Date Code<br/>2N6718□ → L: Lead Free<br/>G: Halogen Free</p> | <p>UTC □□□□ → Date Code<br/>2N6718□ → L: Lead Free<br/>G: Halogen Free</p> | <p>UTC 2N6718□ → L: Lead Free<br/>G: Halogen Free<br/>□□□ → Date Code</p> |

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

| PARAMETER                    |         | SYMBOL    | RATINGS    | UNIT               |
|------------------------------|---------|-----------|------------|--------------------|
| Collector-Base Voltage       |         | $V_{CBO}$ | 100        | V                  |
| Collector-Emitter Voltage    |         | $V_{CEO}$ | 100        | V                  |
| Emitter-Base Voltage         |         | $V_{EBO}$ | 5          | V                  |
| Collector Current (Continue) |         | $I_C$     | 1          | A                  |
| Collector Current (Pulse)    |         | $I_C$     | 2          | A                  |
| Total Power Dissipation      | SOT-89  | $P_D$     | 1 (Note 2) | W                  |
|                              | TO-126C |           | 1.6        | W                  |
|                              | TO-92   |           | 850        | mW                 |
| Junction Temperature         |         | $T_J$     | +150       | $^{\circ}\text{C}$ |
| Operating Temperature        |         | $T_{OPR}$ | -40 ~ +125 | $^{\circ}\text{C}$ |
| Storage Temperature          |         | $T_{STG}$ | -55 ~ +150 | $^{\circ}\text{C}$ |

Notes: 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. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ **THERMAL DATA**

| PARAMETER           |         | SYMBOL        | RATING | UNIT                 |
|---------------------|---------|---------------|--------|----------------------|
| Junction to Ambient | SOT-89  | $\theta_{JA}$ | 125    | $^{\circ}\text{C/W}$ |
|                     | TO-126C |               | 78     | $^{\circ}\text{C/W}$ |
|                     | TO-92   |               | 147    | $^{\circ}\text{C/W}$ |
| Junction to Case    | SOT-89  | $\theta_{JC}$ | 70     | $^{\circ}\text{C/W}$ |
|                     | TO-126C |               | 6.25   | $^{\circ}\text{C/W}$ |
|                     | TO-92   |               | 80     | $^{\circ}\text{C/W}$ |

■ **ELECTRICAL CHARACTERISTICS** ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

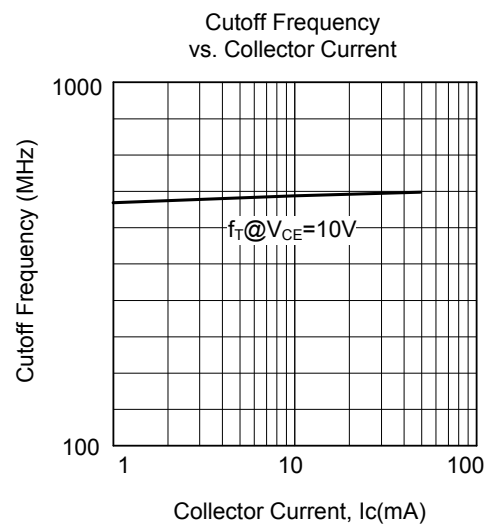
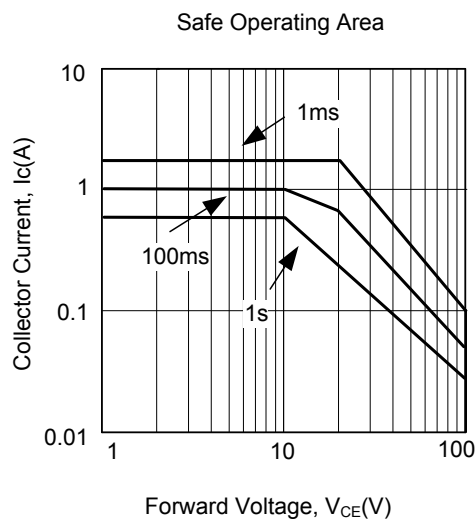
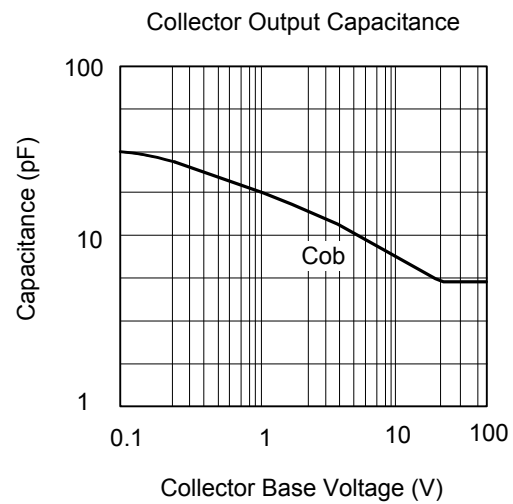
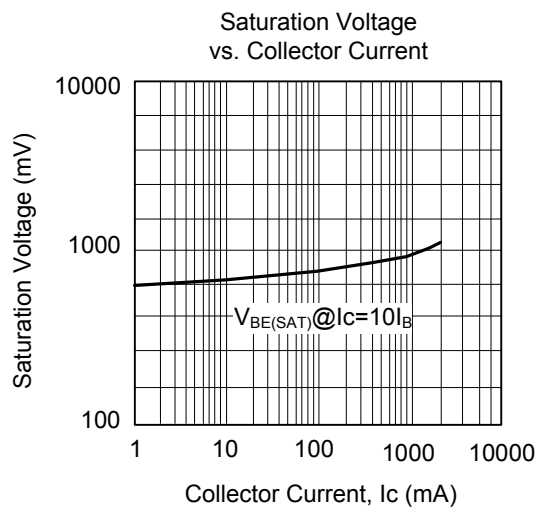
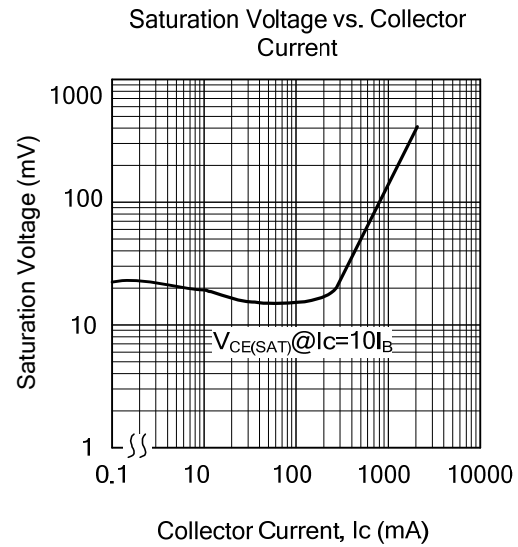
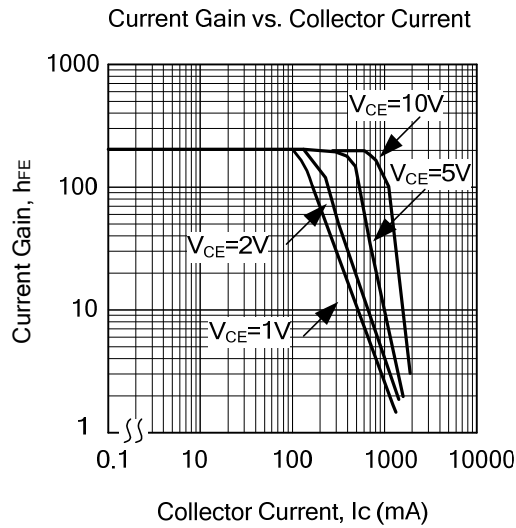
| PARAMETER                                  | SYMBOL        | TEST CONDITIONS                                             | MIN | TYP | MAX | UNIT |
|--------------------------------------------|---------------|-------------------------------------------------------------|-----|-----|-----|------|
| Collector-Base Breakdown Voltage           | $BV_{CBO}$    | $I_C=100\mu\text{A}$                                        | 100 |     |     | V    |
| Collector-Emitter Breakdown Voltage (note) | $BV_{CEO}$    | $I_C=1\text{mA}$                                            | 100 |     |     | V    |
| Emitter-Base Breakdown Voltage             | $BV_{EBO}$    | $I_E=10\mu\text{A}$                                         | 5   |     |     | V    |
| Collector-Emitter Saturation Voltage       | $V_{CE(SAT)}$ | $I_C=350\text{mA}$ , $I_B=35\text{mA}$                      |     |     | 350 | mV   |
| Collector Cut-Off Current                  | $I_{CBO}$     | $V_{CB}=80\text{V}$                                         |     |     | 100 | nA   |
| DC Current Gain                            | $h_{FE1}$     | $V_{CE}=1\text{V}$ , $I_C=50\text{mA}$                      | 80  |     |     |      |
|                                            | $h_{FE2}$     | $V_{CE}=1\text{V}$ , $I_C=250\text{mA}$                     | 50  |     | 300 |      |
|                                            | $h_{FE3}$     | $V_{CE}=1\text{V}$ , $I_C=500\text{mA}$                     | 20  |     |     |      |
| Current Gain - Bandwidth Product           | $f_T$         | $V_{CE}=10\text{V}$ , $I_C=50\text{mA}$ , $f=100\text{MHz}$ | 50  |     |     | MHz  |
| Output Capacitance                         | $C_{ob}$      | $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$             |     |     | 20  | pF   |

Note: Pulse test: PulseWidth $\leq 380\mu\text{s}$ , Duty Cycle $\leq 2\%$

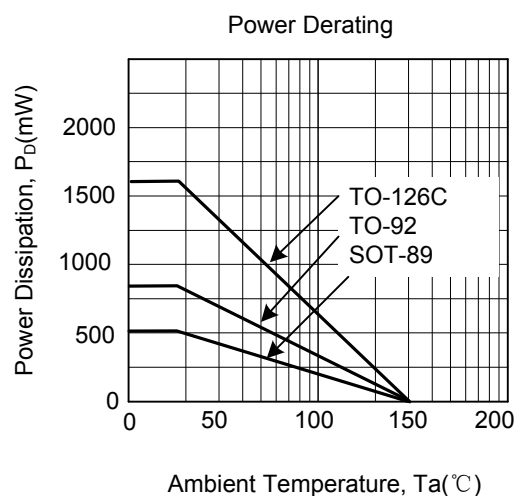
■ **CLASSIFICATION OF  $h_{FE2}$**

|       |        |        |
|-------|--------|--------|
| RANK  | A      | B      |
| RANGE | 50~115 | 95~300 |

## TYPICAL CHARACTERISTICS



## ■ TYPICAL CHARACTERISTICS



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