

isc Silicon NPN Power Transistor

2SC1969

DESCRIPTION

- High Power Gain-  
:  $G_{pe} \geq 12\text{dB}$ ,  $f = 27\text{MHz}$ ,  $P_O = 16\text{W}$
- High Reliability

APPLICATIONS

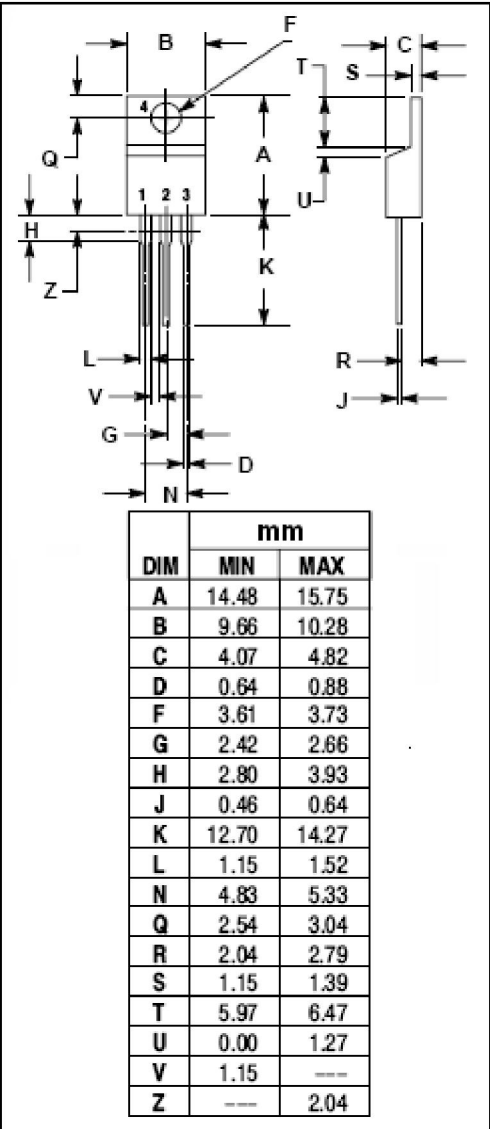
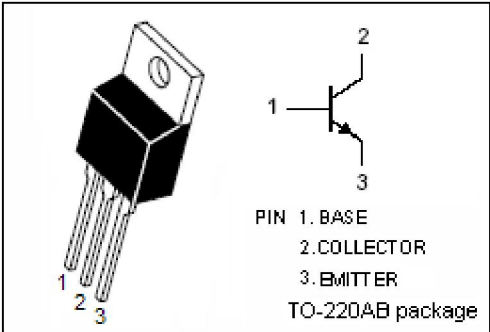
- Designed for 10~14 watts output power class AB amplifiers applications in HF band.

ABSOLUTE MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ )

| SYMBOL    | PARAMETER                                                   | VALUE   | UNIT               |
|-----------|-------------------------------------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage                                      | 60      | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage $R_{BE} = \infty$                 | 25      | V                  |
| $V_{EBO}$ | Emitter-Base Voltage                                        | 5       | V                  |
| $I_C$     | Collector Current                                           | 6       | A                  |
| $P_C$     | Collector Power Dissipation<br>@ $T_C = 25^{\circ}\text{C}$ | 20      | W                  |
|           | Collector Power Dissipation<br>@ $T_a = 25^{\circ}\text{C}$ | 1.7     |                    |
| $T_j$     | Junction Temperature                                        | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                                   | -55~150 | $^{\circ}\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                               | MAX  | UNIT                 |
|---------------|-----------------------------------------|------|----------------------|
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 73.5 | $^{\circ}\text{C/W}$ |
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case    | 6.25 | $^{\circ}\text{C/W}$ |



**isc Silicon NPN Power Transistor****2SC1969****ELECTRICAL CHARACTERISTICS** **$T_C=25^{\circ}\text{C}$  unless otherwise specified**

| SYMBOL        | PARAMETER                           | CONDITIONS                                                  | MIN | TYP. | MAX | UNIT |
|---------------|-------------------------------------|-------------------------------------------------------------|-----|------|-----|------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage    | $I_C=1\text{mA}$ , $I_E=0$                                  | 60  |      |     | V    |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=10\text{mA}$ ; $R_{BE}=\infty$                         | 25  |      |     | V    |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage      | $I_E=5\text{mA}$ , $I_C=0$                                  | 5   |      |     | V    |
| $I_{CBO}$     | Collector Cutoff Current            | $V_{CB}=30\text{V}$ ; $I_E=0$                               |     |      | 0.1 | mA   |
| $I_{EBO}$     | Emitter Cutoff Current              | $V_{EB}=4\text{V}$ ; $I_C=0$                                |     |      | 0.1 | mA   |
| $h_{FE}$      | DC Current Gain                     | $I_C=10\text{mA}$ ; $V_{CE}=12\text{V}$                     | 10  |      | 180 |      |
| $P_O$         | Output Power                        | $V_{CC}=12\text{V}$ ; $P_{in}=1\text{W}$ ; $f=27\text{MHz}$ | 16  | 18   |     | W    |
| $\eta_C$      | Collector Efficiency                |                                                             | 60  | 70   |     | %    |

**◆  $h_{FE}$  Classifications**

| X     | A     | B     | C      | D      |
|-------|-------|-------|--------|--------|
| 10-25 | 20-45 | 35-70 | 55-110 | 90-180 |