



SOT-89-3L Plastic-Encapsulate Transistors

2SD965A TRANSISTOR (NPN)

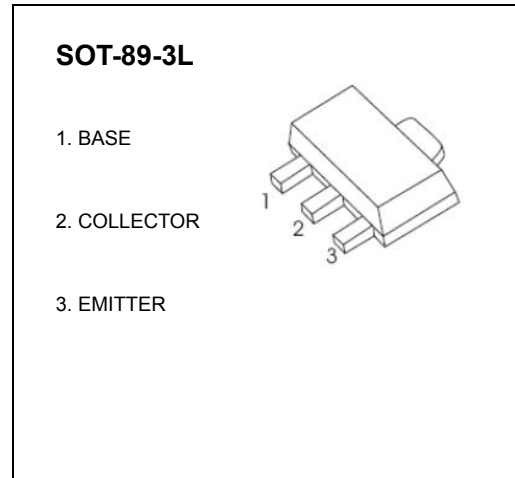
FEATURES

- Audio amplifier
- Flash unit of camera
- Switching circuit

MARKING: 965A

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|------------------|---|---------|------|
| V _{CBO} | Collector-Base Voltage | 40 | V |
| V _{CEO} | Collector-Emitter Voltage | 30 | V |
| V _{EBO} | Emitter-Base Voltage | 7 | V |
| I _C | Collector Current -Continuous | 5 | A |
| P _C | Collector Power Dissipation | 750 | mW |
| R _{θJA} | Thermal Resistance From Junction To Ambient | 167 | °C/W |
| T _J | Junction Temperature | 150 | °C |
| T _{stg} | Storage Temperature | -55~150 | °C |



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|---|-----|-----|-----|------|
| Collector-base breakdown voltage | V _{(BR)CBO} | I _C =0.1mA, I _E =0 | 40 | | | V |
| Collector-emitter breakdown voltage | V _{(BR)CEO} | I _C = 1mA, I _B =0 | 30 | | | V |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E = 10μA, I _C =0 | 7 | | | V |
| Collector cut-off current | I _{CBO} | V _{CB} = 10V, I _E =0 | | | 0.1 | μA |
| Emitter cut-off current | I _{EBO} | V _{EB} =7V, I _C =0 | | | 0.1 | μA |
| DC current gain | h _{FE(1)} | V _{CE} = 2 V, I _C =1mA | | 200 | | |
| | h _{FE(2)} | V _{CE} = 2V, I _C = 500mA | 230 | | 800 | |
| | h _{FE(3)} | V _{CE} = 2V, I _C =2A | 150 | | | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C =3A, I _B =0.1A | | | 1 | V |
| Transition frequency | f _T | V _{CE} =6V, I _C =50mA | | 150 | | MHz |
| Out capacitance | C _{ob} | V _{CB} =20 V , I _E =0, f=1MHz | | | 50 | pF |

CLASSIFICATION OF h_{FE(2)}

| Rank | Q | R | S |
|-------|---------|---------|---------|
| Range | 230-380 | 340-600 | 560-800 |