

TRANSISTOR (NPN)

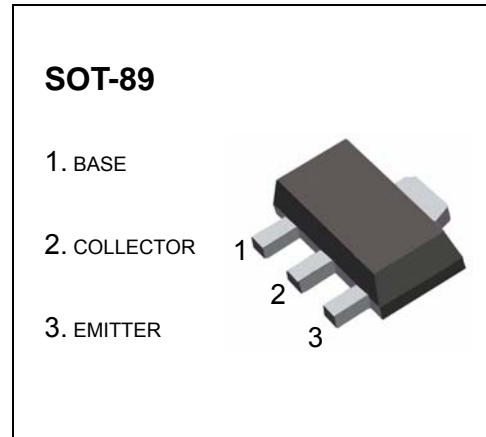
FEATURES

- High collector to base voltage V_{CBO}
- High collector to emitter voltage V_{CEO}
- Large collector power dissipation P_C
- Low collector to emitter saturation voltage $V_{CE(sat)}$

Marking:1S

MAXIMUM RATINGS ($T_A=25^{\circ}C$ unless otherwise noted)

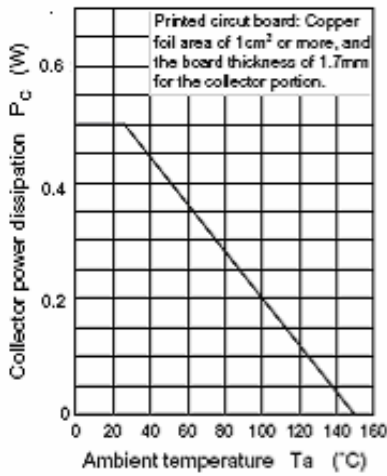
| Symbol | Parameter | Value | Units |
|-----------|-------------------------------|---------|-------------|
| V_{CBO} | Collector-Base Voltage | 400 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current -Continuous | 100 | mA |
| P_C | Collector Power Dissipation | 500 | mW |
| T_J | Junction Temperature | 150 | $^{\circ}C$ |
| T_{stg} | Storage Temperature | -55-150 | $^{\circ}C$ |



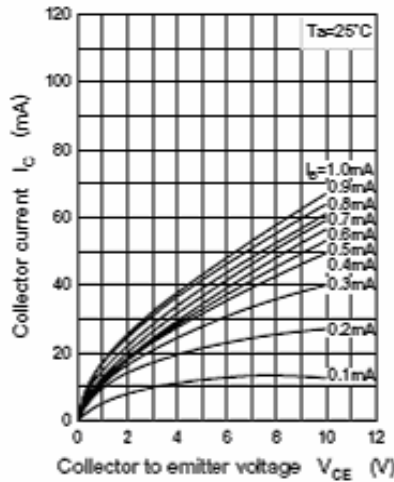
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}C$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|----------------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu A, I_E=0$ | 400 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=0.5mA, I_B=0$ | 400 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=400V, I_E=0$ | | | 50 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5V, I_C=0$ | | | 50 | μA |
| DC current gain | h_{FE} | $V_{CE}=5V, I_C=30mA$ | 30 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=50mA, I_B=5mA$ | | | 1.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=50mA, I_B=5mA$ | | | 1.5 | V |
| Transition frequency | f_T | $V_{CE}=30V, I_C=20mA, f=200MHz$ | | 40 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 30V, I_E=0, f=1MHz$ | | | 7 | pF |

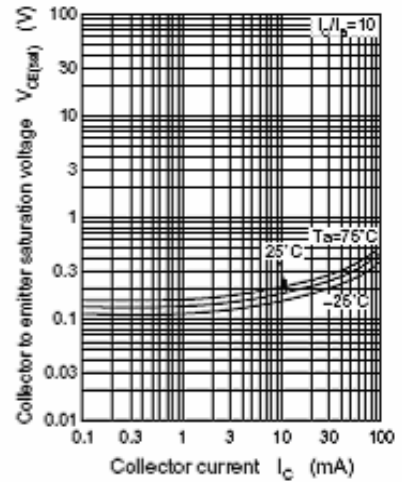
$P_C - T_a$



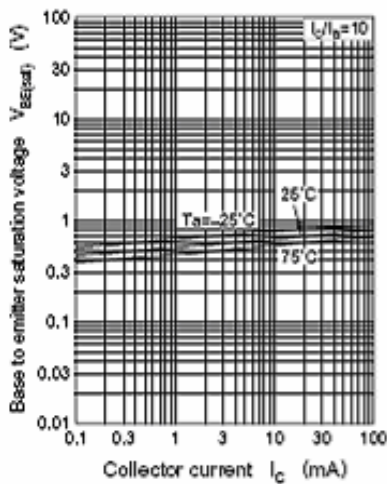
$I_C - V_{CE}$



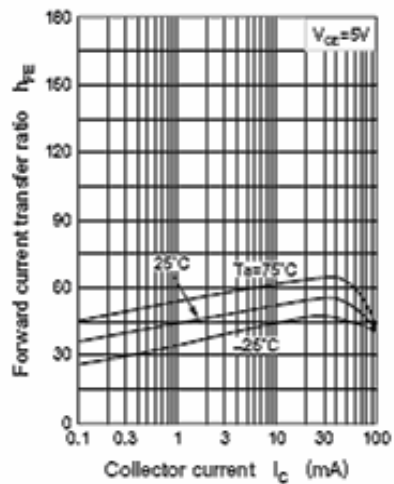
$V_{CE(sat)} - I_C$



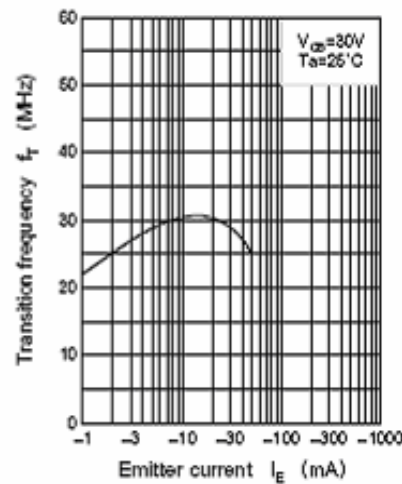
$V_{BE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

