



CHENMKO ENTERPRISE CO.,LTD

**SMALL FLAT
NPN Epitaxial Transistor**

VOLTAGE 30 Volts CURRENT 3 Ampere

2SD882PT

Lead free devices

APPLICATION

* Power driver and Dc to DC convertor .

FEATURE

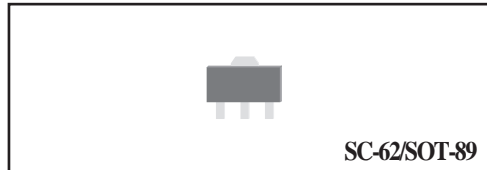
- * Small flat package. (SC-62/SOT-89)
- * Low saturation voltage $V_{CE(sat)}=0.5V(max.)(I_c=2A)$
- * High speed switching time: $t_{stg}= 1.0\mu Sec$ (typ.)
- * $PC= 1.5 W$ (mounted on ceramic substrate).
- * High saturation current capability.

CONSTRUCTION

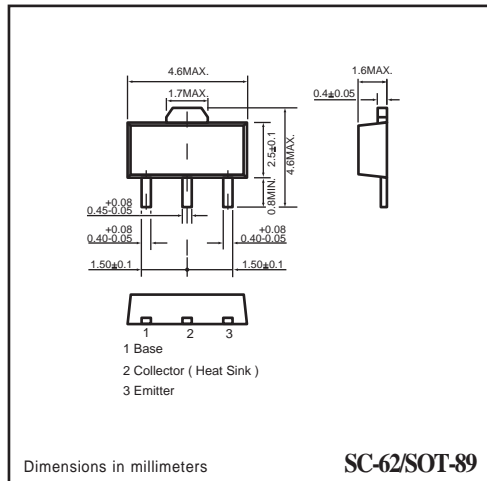
* NPN Switching Transistor

MARKING

* hFE Classification Q: Q82
P: P82
E: 882



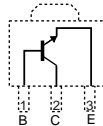
SC-62/SOT-89



Dimensions in millimeters

SC-62/SOT-89

CIRCUIT



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

| RATINGS | CONDITION | SYMBOL | MIN. | MAX. | UNITS |
|-------------------------------|---------------------------------|-----------|------|------|-------------|
| Collector - Base Voltage | Open Emitter | V_{CB0} | - | 40 | Volts |
| Collector - Emitter Voltage | Open Base | V_{CE0} | - | 30 | Volts |
| Emitter - Base Voltage | Open Collector | V_{EB0} | - | 5 | Volts |
| Collector Current DC | | I_c | - | 3 | Amps |
| Peak Collector Current | | I_{CM} | - | 3 | Amps |
| Peak Base Current | | I_{BM} | - | 0.5 | Amps |
| Total Power Dissipation | $T_A \leq 25^{\circ}C$; Note 1 | P_{TOT} | - | 1500 | mW |
| Storage Temperature | | T_{STG} | -55 | +150 | $^{\circ}C$ |
| Junction Temperature | | T_J | - | +150 | $^{\circ}C$ |
| Operating Ambient Temperature | | T_{AMB} | -55 | +150 | $^{\circ}C$ |

Note

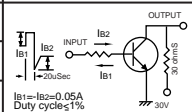
1. Transistor mounted on ceramic substrate 50mmX50mmX0.8t.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

RATING CHARACTERISTIC CURVES (2SD882PT)

CHARACTERISTICS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

| PARAMETERS | CONDITION | SYMBOL | MIN. | TYPE | MAX. | UNITS |
|--------------------------------------|---|-------------|-----------|----------|----------|---------------|
| Collector Cut-off Current | $I_E=0; V_{CB}=30\text{V}$ | I_{CBO} | - | - | 1.0 | μA |
| Emitter Cut-off Current | $I_C=0; V_{EB}=3\text{V}$ | I_{EBO} | - | - | 1.0 | μA |
| DC Current Gain | $V_{CE}=2\text{V}$; Note 1 $I_C=0.02\text{A}$ $I_C=1.0\text{A}$; Note 2 | h_{FE} | 30 100 | - 160 | - 500 | |
| Collector-Emitter Saturation Voltage | $I_C=2\text{A}; I_B=0.2\text{A}$ | V_{CEsat} | - | 0.3 | 0.5 | Volts |
| Base-Emitter Saturation Voltage | $I_C=2\text{A}; I_B=-0.2\text{A}$ | V_{BEsat} | - | 1.0 | 2.0 | Volts |
| Collector Capacitance | $I_E=I_C=0; V_{CB}=10\text{V};$ $f=1\text{MHz}$ | C_C | - | 55 | - | pF |
| Transition Frequency | $I_C=0.02\text{A}; V_{CE}=20\text{V};$ $f=100\text{MHz}$ | f_T | - | 100 | - | MHz |

SWITCHING TIMES (Between 10% and 90% levels)

| PARAMETERS | CONDITION | SYMBOL | MIN. | TYPE | MAX. | UNITS |
|--------------|--|----------|------|------|------|-----------------|
| Turn-on Time |  | t_{on} | - | 0.1 | - | μSec |
| Storage Time | | t_s | - | 1.0 | - | μSec |
| Fall Time | | t_f | - | 0.1 | - | μSec |

Note :

1. Pulse test: $t_p \leq 300\mu\text{Sec}$; $\delta \leq 0.02$.
2. $h_{FE}(2)$ Classification Q: 100 to 200, P: 160 to 320, E: 250 to 500.

RATING CHARACTERISTIC CURVES (2SD882PT)

Typical Electrical Characteristics

Figure 1. C_c - Reverse V_{cb}

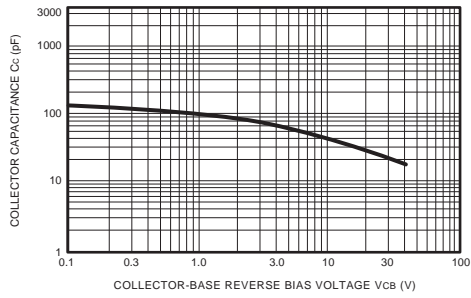


Figure 2. Cutoff Frequency - I_c

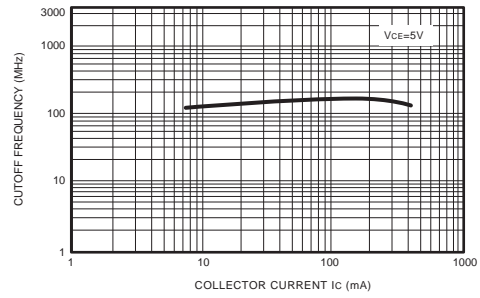


Figure 3. h_{FE} - I_c

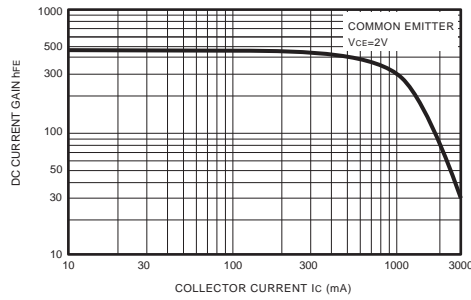


Figure 4. P_c - T_a

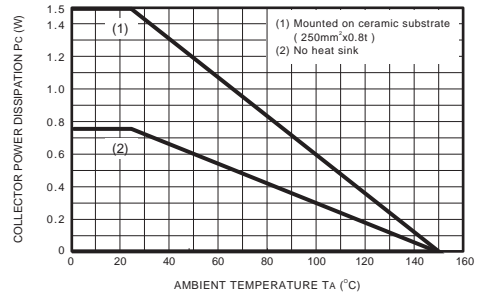


Figure 5. $V_{CE(sat)}$ - I_c

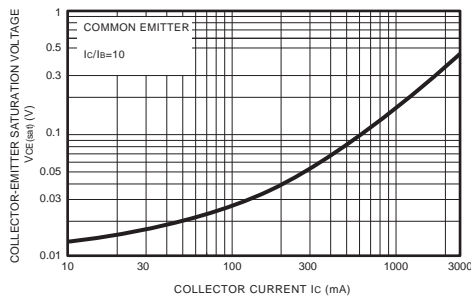
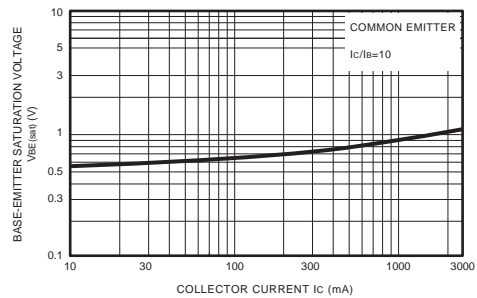


Figure 6. $V_{BE(sat)}$ - I_c



RATING CHARACTERISTIC CURVES (2SD882PT)

Typical Electrical Characteristics

Figure 9. Safe Operation Area

