



**CHENMKO ENTERPRISE CO.,LTD**

*Halogens free devices*

**SMALL FLAT  
PNP Epitaxial Transistor**

VOLTAGE 20 Volts CURRENT 5 Amperes

**2SB1386PGP**

**APPLICATION**

\* Power driver and Strobe Flash .

**FEATURE**

- \* Small flat package. (DPAK)
- \* Low saturation voltage  $V_{CE(sat)} = -0.35V$  (Typ.) ( $I_c/I_B = -4A/-0.1A$ )
- \* High saturation current capability.

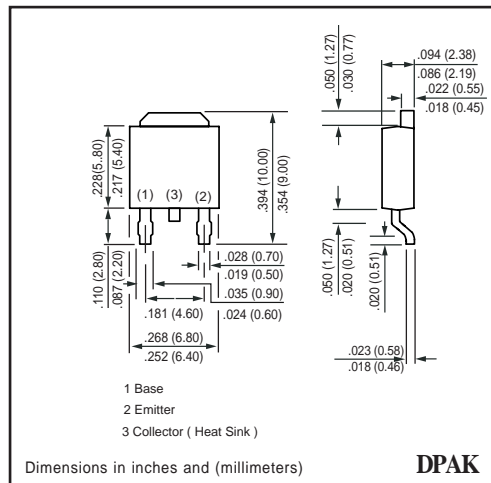
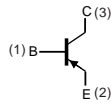
**MARKING**

- \* hFE Classification P : P86
- Q : Q86
- R : R86



**DPAK**

**CIRCUIT**



**DPAK**

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

| RATINGS                       | CONDITION                      | SYMBOL    | 2SB1386PGP  | UNITS      |
|-------------------------------|--------------------------------|-----------|-------------|------------|
| Collector - Base Voltage      | Open Emitter                   | $V_{CBO}$ | -30         | Volts      |
| Collector - Emitter Voltage   | Open Base                      | $V_{CEO}$ | -20         | Volts      |
| Emitter - Base Voltage        | Open Collector                 | $V_{EBO}$ | -6          | Volts      |
| Collector Current DC          |                                | $I_c$     | -5          | Amps       |
| Peak Collector Current        |                                | $I_{CM}$  | -10         | Amps       |
| Total Power Dissipation       | $T_A \leq 25^\circ C$ ; Note 1 | $P_{TOT}$ | 1.0         | W          |
| Storage Temperature           |                                | $T_{STG}$ | -55 to +150 | $^\circ C$ |
| Junction Temperature          |                                | $T_J$     | +150        | $^\circ C$ |
| Operating Ambient Temperature |                                | $T_{AMB}$ | -55 to +150 | $^\circ C$ |

**Note**

1. Transistor mounted on ceramic substrate by 40mmX40mmx0.7mm.

2007-05

## RATING CHARACTERISTIC CURVES ( 2SB1386PGP )

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

| PARAMETERS                           | CONDITION  | SYMBOL      | MIN. | TYPE  | MAX. | UNITS         |
|--------------------------------------|--|-------------|------|-------|------|---------------|
| Collector-Base breakdown voltage     | $I_C = -50\mu\text{A}$   | $BV_{CB0}$  | -30  | -     | -    | Volts         |
| Collector-Emitter breakdown voltage  | $I_C = -1\text{mA}$  | $BV_{CE0}$  | -20  | -     | -    | Volts         |
| Emitter-Base breakdown voltage       | $I_E = -50\mu\text{A}$   | $BV_{EB0}$  | -6   | -     | -    | Volts         |
| Collector Cut-off Current            | $I_E = 0; V_{CB} = -20\text{V}$                                      | $I_{CBO}$   | -    | -     | -0.5 | $\mu\text{A}$ |
| Emitter Cut-off Current              | $I_C = 0; V_{EB} = -5\text{V}$                                       | $I_{EBO}$   | -    | -     | -0.5 | $\mu\text{A}$ |
| DC Current Gain                      | $V_{CE} = -2\text{V}; \text{Note 1}$<br>$I_C = -0.5\text{A}$         | $h_{FE}$    | 82   | -     | 390  |               |
| Collector-Emitter Saturation Voltage | $I_C = -4\text{A}; I_B = -0.1\text{A}$                               | $V_{CEsat}$ | -    | -0.35 | -1.0 | Volts         |
| Output Capacitance                   | $I_E = I_C = 0; V_{CB} = -20\text{V};$<br>$f = 1\text{MHz}$          | $C_C$       | -    | 60    | -    | $\text{pF}$   |
| Transition Frequency                 | $I_E = -0.05\text{A}; V_{CE} = -6.0\text{V};$<br>$f = 100\text{MHz}$ | $f_T$       | -    | 120   | -    | $\text{MHz}$  |

**Note :**

1.  $h_{FE}(2)$  Classification P: 82 to 180, Q: 120 to 270, R: 180 to 390.

## RATING CHARACTERISTIC CURVES ( 2SB1386PGP )

Fig.1 Grounded emitter propagation characteristics

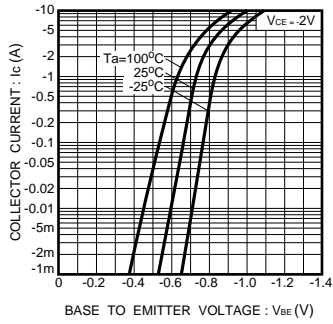


Fig.2 Grounded emitter output characteristics

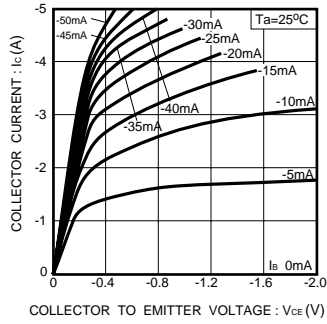


Fig.3 DC current gain vs. collector current ( I )

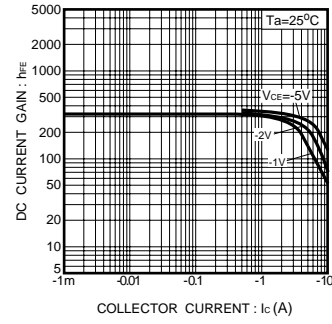


Fig.4 DC current gain vs. collector current ( II )

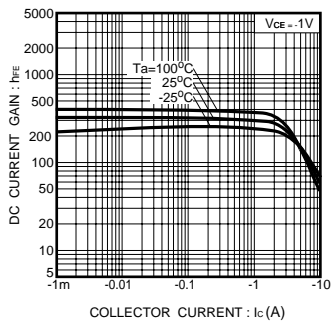


Fig.5 DC current gain vs. collector current ( III )

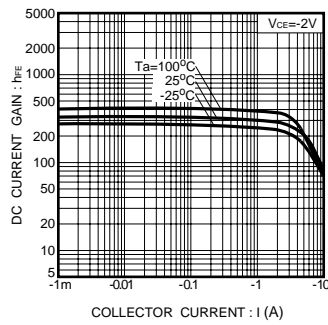


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

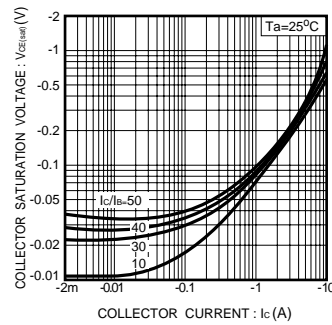


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

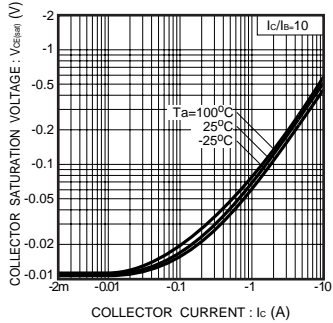


Fig.8 Collector-emitter saturation voltage vs. collector current ( III )

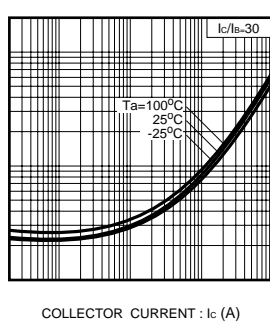


Fig.9 Collector-emitter saturation voltage vs. collector current ( IV )

