

# DESCRIPTION

Mitsubishi 2SA1946 is a resin sealed silicon PNP epitaxial type transistor. It is designed with high collector current and small  $V_{CE(sat)}$ .

Complementary with 2SC5212.

# FEATURE

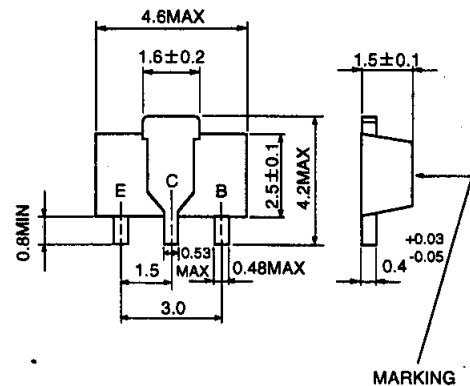
- Low collector saturation voltage  
 $V_{CE(sat)} = -0.25V$  typ
- High  $f_T$   $f_T = 180MHz$  typ
- Excellent linearity of DC forward current gain
- High collector current  $I_{CM} = -1A$
- Small package for mounting

# APPLICATION

For relay drive, small motor drive, power supply application.

# OUTLINE DRAWING

Unit:mm



# TERMINAL CONNECTOR

E : EMITTER  
C : COLLECTOR  
B : BASE

EIAJ : SC-62  
JEDEC : -

Note)

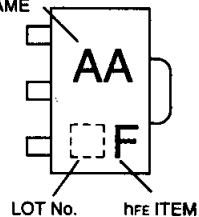
The dimension without tolerance represent central value.

# MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

| Symbol    | Parameter                                   | Ratings     | Unit       |
|-----------|---------------------------------------------|-------------|------------|
| $V_{CB0}$ | Collector to Base voltage                   | -25         | V          |
| $V_{EB0}$ | Emitter to Base voltage                     | -4          | V          |
| $V_{CE0}$ | Collector to Emitter voltage                | -20         | V          |
| $I_{CM}$  | Peak collector current                      | -1          | A          |
| $I_C$     | Collector current                           | -700        | mA         |
| $P_C$     | Collector dissipation( $T_a = 25^\circ C$ ) | 500         | mW         |
| $T_J$     | Junction temperature                        | +150        | $^\circ C$ |
| $T_{stg}$ | Storage temperature                         | -55 to +150 | $^\circ C$ |

# MARKING

TYPE NAME



# ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

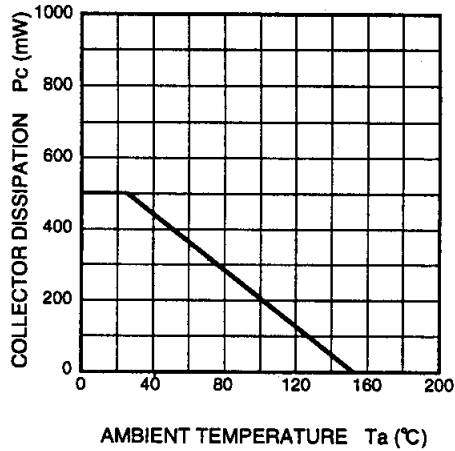
| Symbol        | Parameter                 | Test conditions                     | Limits |       |      | Unit    |
|---------------|---------------------------|-------------------------------------|--------|-------|------|---------|
|               |                           |                                     | Min    | Typ   | Max  |         |
| $V_{(BR)CBO}$ | C to B break down voltage | $I_C = -10 \mu A, I_E = 0$          | -25    |       |      | V       |
| $V_{(BR)EBO}$ | E to B break down voltage | $I_E = -10 \mu A, I_C = 0$          | -4     |       |      | V       |
| $V_{(BR)CEO}$ | C to E break down voltage | $I_C = -100 \mu A, R_{BE} = \infty$ | -20    |       |      | V       |
| $I_{CBO}$     | Collector cut off current | $V_{CB} = -25V, I_E = 0$            |        |       | -1   | $\mu A$ |
| $I_{EBO}$     | Emitter cut off current   | $V_{EB} = -2V, I_C = 0$             |        |       | -1   | $\mu A$ |
| hFE *         | DC forward current gain   | $V_{CE} = -4V, I_C = -100mA$        | 150    |       | 800  | —       |
| $V_{CE(sat)}$ | C to E saturation voltage | $I_C = -500mA, I_E = -25mA$         |        | -0.25 | -0.5 | V       |
| $f_T$         | Gain band width product   | $V_{CE} = -6V, I_E = 10mA$          |        | 180   |      | MHz     |

\* : It shows hFE classification in right table.

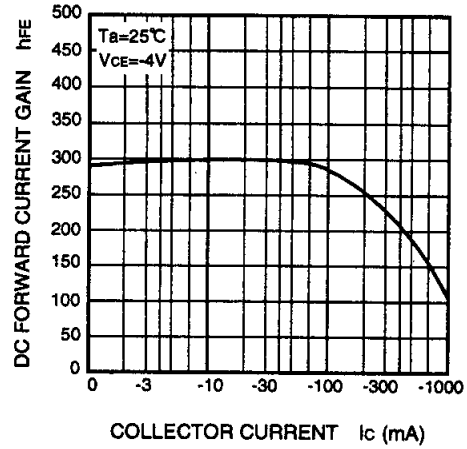
| Marking | AAE        | AAF        | AAG        |
|---------|------------|------------|------------|
| hFE     | 150 to 300 | 250 to 500 | 400 to 800 |

**TYPICAL CHARACTERISTICS**

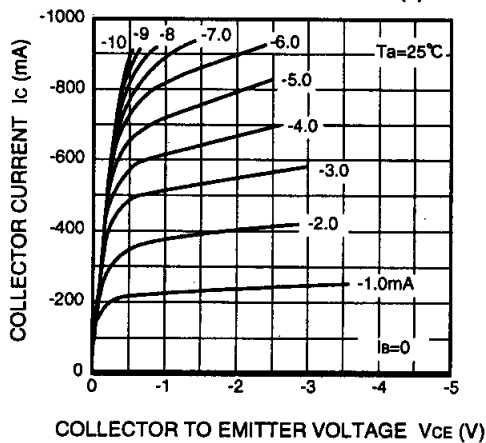
**COLLECTOR DISSIPATION  
VS. AMBIENT TEMPERATURE**



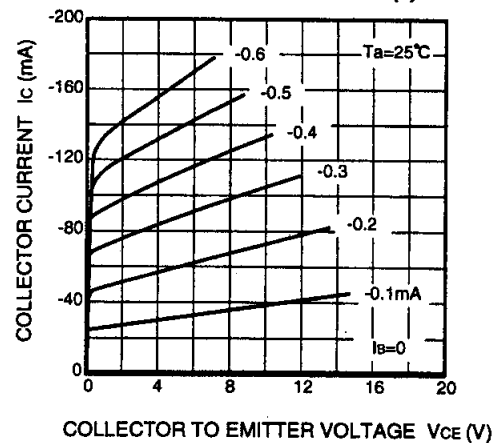
**DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT**



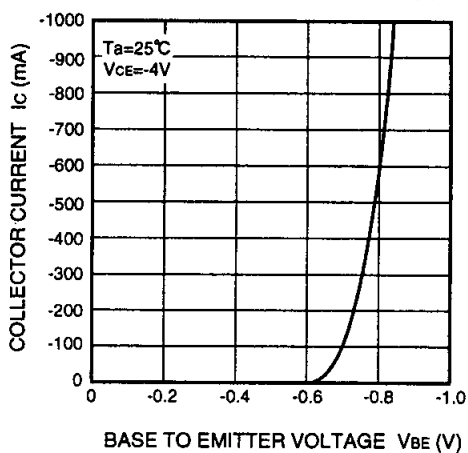
**COMMON EMITTER OUTPUT(1)**



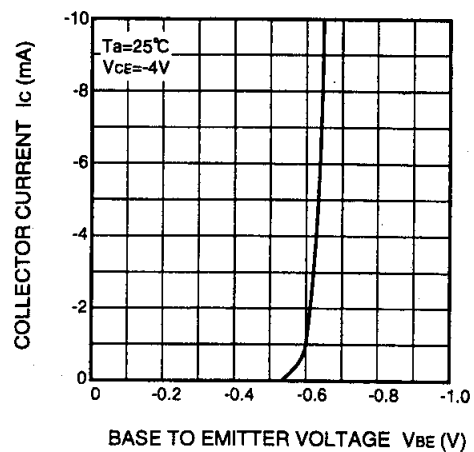
**COMMON EMITTER OUTPUT(2)**



**COMMON EMITTER TRANSFER(1)**



**COMMON EMITTER TRANSFER(2)**





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