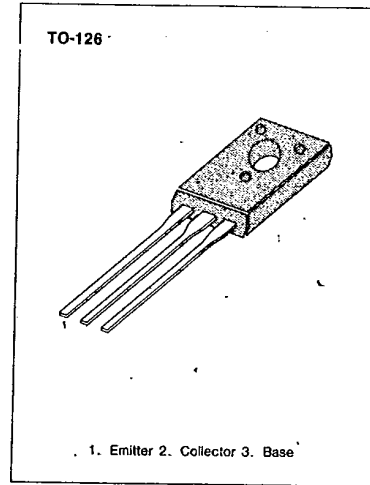


KSD882**NPN EPITAXIAL SILICON TRANSISTOR****AUDIO FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING**

- Complement to KSB772

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

| Characteristic | Symbol | Rating | Unit |
|---|------------------|---------|------|
| Collector-Base Voltage | V _{CB0} | 40 | V |
| Collector-Emitter Voltage | V _{CE0} | 30 | V |
| Emitter-Base Voltage | V _{EB0} | 5 | V |
| Collector Current (DC) | I _c | 3 | A |
| Collector Current (Pulse) | I _c | 7 | A |
| Base Current (DC) | I _b | 0.6 | A |
| Collector Dissipation (T _c = 25°C) | P _c | 10 | W |
| Collector Dissipation (T _a = 25°C) | P _c | 1 | W |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature | T _{stg} | -55~150 | °C |



- PWS10ms, Duty Cycle ≤50%

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

| Characteristic | Symbol | Test Condition | Min | Typ | Max | Unit |
|--|-----------------------|---|-----|-----|-----|------|
| Collector Cutoff Current | I _{CB0} | V _{CB} = 30V, I _E = 0 | | | 1 | μA |
| Emitter Cutoff Current | I _{EB0} | V _{EB} = 3V, I _C = 0 | | | 1 | μA |
| * DC Current Gain | h _{FE1} | V _{CE} = 2V, I _C = 20mA | 30 | 150 | | |
| | h _{FE2} | V _{CE} = 2V, I _C = 1A | 60 | 160 | 400 | |
| * Collector Emitter Saturation Voltage | V _{CE (sat)} | I _C = 2A, I _B = 0.2A | | 0.3 | 0.5 | V |
| * Base Emitter Saturation Voltage | V _{BE (sat)} | I _C = 2A, I _B = 0.2A | | 1.0 | 2.0 | V |
| Current Gain Bandwidth Product | f _T | V _{CE} = 5V, I _E = -0.1A | | 90 | | MHz |
| Output Capacitance | C _{ob} | V _{CB} = 10V, I _E = 0 f = 1MHz | | 45 | | pF |

- Pulse Test: PW ≤ 350μs, Duty Cycle ≤ 2%

h_{FE}(2) CLASSIFICATION

| Classification | R | O | Y | G |
|---------------------|--------|---------|---------|---------|
| h _{FE} (2) | 60-120 | 100-200 | 160-320 | 200-400 |

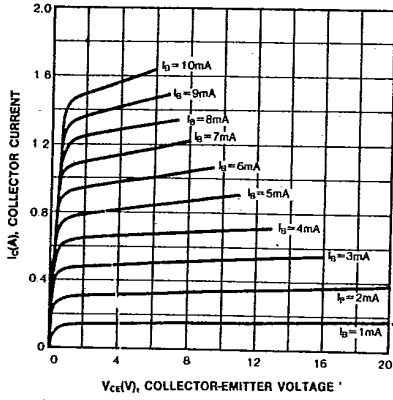


KSD882

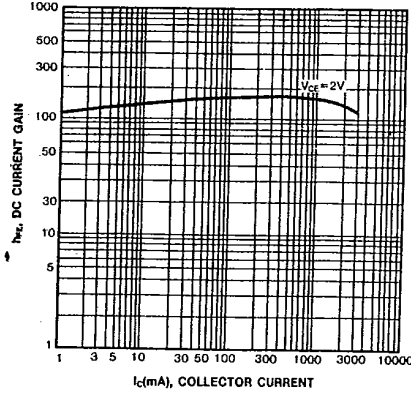
NPN EPITAXIAL SILICON TRANSISTOR

T-33-07

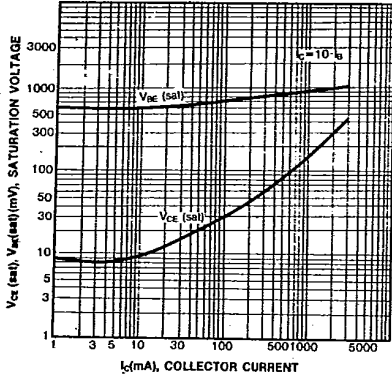
STATIC CHARACTERISTIC



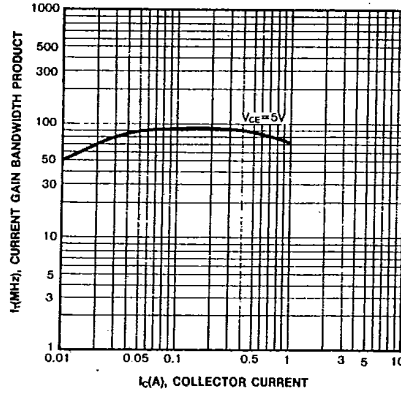
DC CURRENT GAIN



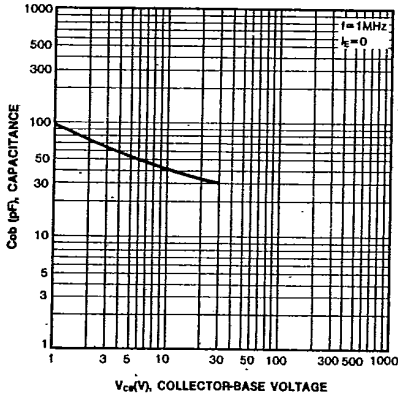
BASE-EMITTER SATURATION VOLTAGE - COLLECTOR-EMITTER SATURATION VOLTAGE



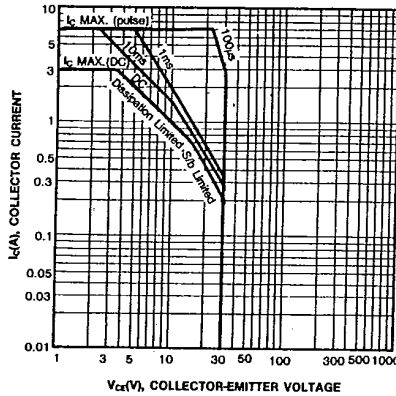
CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR OUTPUT CAPACITANCE



SAFE OPERATING AREA



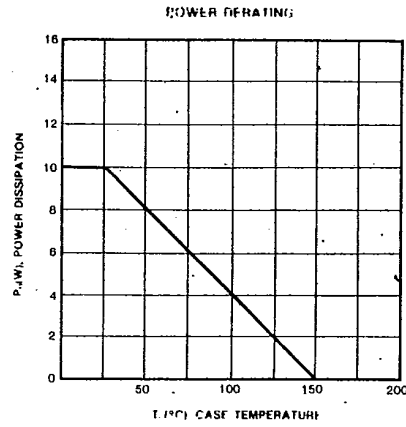
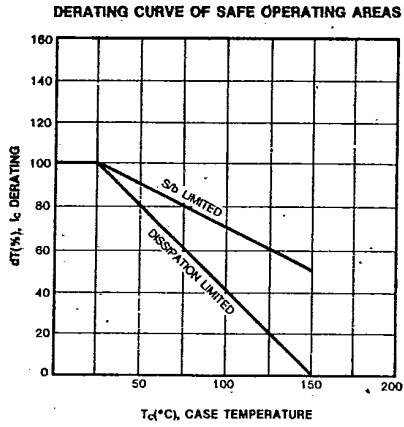
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KSD882

NPN EPITAXIAL SILICON TRANSISTOR

T-33-07



**NPN EPITAXIAL SILICON
DARLINGTON TRANSISTOR**

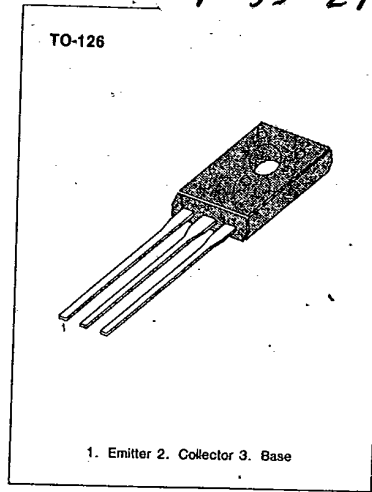
KSD985
SAMSUNG SEMICONDUCTOR INC

**LOW FREQUENCY POWER AMPLIFIER
LOW SPEED SWITCHING
INDUSTRIAL USE**

T-33-29

ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

| Characteristic | Symbol | Rating | Unit |
|---|------------------|---------|------|
| Collector-Base Voltage | V _{CB0} | 150 | V |
| Collector-Emitter Voltage | V _{CE0} | 60 | V |
| Emitter-Base Voltage | V _{EB0} | 8.0 | V |
| Collector Current (DC) | I _C | ±1.5 | A |
| *Collector Current (Pulse) | I _C | ±3.0 | A |
| Base Current (DC) | I _B | 0.15 | A |
| Collector Dissipation (T _a = 25°C) | P _C | 1.0 | W |
| Collector Dissipation (T _c = 25°C) | P _C | 10 | W |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature | T _{stg} | -55~150 | °C |



3

* PW ≤ 300μs, Duty Cycle ≤ 10%

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

| Characteristic | Symbol | Test Condition | Min | Typ | Max | Unit |
|---------------------------------------|----------------------|--|------|-----|-------|------|
| Collector Cutoff Current | I _{CB0} | V _{CB} = 60V, I _E = 0 | | | 10 | μA |
| Collector Cutoff Current | I _{CER} | V _{CE} = 60V, R _{BE} = 51Ω T _a = 125°C | | | 1.0 | mA |
| Collector Cutoff Current | I _{CEX1} | V _{CE} = 60V, V _{BE} (off) = -1.5V | | | 10 | μA |
| Collector Cutoff Current | I _{CEX2} | V _{CE} = 60V, V _{BE} (off) = -1.5V T _a = 125°C | | | 1.0 | mA |
| Emitter Cutoff Current | I _{EB0} | V _{EB} = 5V, I _C = 0 | | | 1.0 | mA |
| *DC Current Gain | h _{FE1} | V _{CE} = 2V, I _C = 0.5A | 1000 | | | |
| | h _{FE2} | V _{CE} = 2V, I _C = 1A | 2000 | | 30000 | |
| *Collector-Emitter Saturation Voltage | V _{CE(sat)} | I _C = 1A, I _B = 1mA | | | 1.5 | V |
| *Base-Emitter Saturation Voltage | V _{BE(sat)} | I _C = 1A, I _B = 1mA | | | 2.0 | V |
| Turn On Time | t _{on} | I _C = 1A, R _L = 50Ω | | 0.5 | | μs |
| Storage Time | t _s | I _{B1} = -I _{B2} = 1mA | | 1.0 | | μs |
| Fall time | t _f | V _{CC} = 50V | | 1.0 | | μs |

* Pulse Test: PW ≤ 350μs, Duty Cycle ≤ 2%

h_{FE}(2) CLASSIFICATION

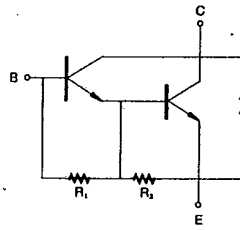
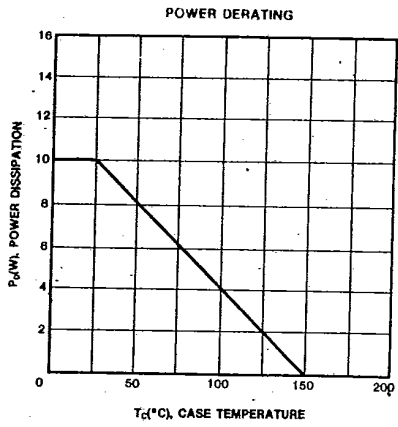
| Classification | R | O | Y |
|---------------------|-----------|------------|------------|
| h _{FE} (2) | 2000-5000 | 4000-10000 | 8000-30000 |

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SAMSUNG SEMICONDUCTOR INC

NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

T-33-29



$R_1 = 10k\Omega$
 $R_2 = 500\Omega$

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Datasheets for electronic components.