Ordering number: EN 2297A

SANYO

No.2297A

# 2SC3784

NPN Epitaxial Planar Type Silicon Transistor

DRIVER APPLICATIONS

**Applications**

. Suitable for use in switching of L load (motor drivers, printer hammer drivers, relay drivers)

**Features**

. High DC current gain
. Wide ASO
. On-chip zener diode of 60±10V between collector and base
. Uniformity in collector to base breakdown voltage
. Large inductive load handling capability

**Absolute Maximum Ratings** at Ta=25°C

| | | | | unit |
|---|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | | *50 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | | *50 | V |
| Emitter to Base Voltage | $V_{EBO}$ | | 6 | V |
| Collector Current | $I_C$ | | 1.2 | A |
| Peak Collector Current | $i_{cp}$ | | 2.5 | A |
| Collector Dissipation | $P_C$ | | 1.2 | W |
| | $P_C$ | Tc=25°C | 20 | W |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

*: On-chip zener diode (60±10V)

**Electrical Characteristics** at Ta=25°C

| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=40V, $I_E$=0 | | | 10 | uA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | | | 10 | mA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=5V, $I_C$=500mA | 1000 | 4000 | | |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=5V, $I_C$=500mA | | 180 | | MHz |
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C$=500mA, $I_B$=2mA | | 1.0 | 1.5 | V |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C$=500mA, $I_B$=2mA | | | 2.0 | V |
| Inductive Load Handling Capability | E s/b | L=100mH, $R_{BE}$=100ohms | 15 | | | mJ |
| C-B Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=100uA, $I_E$=0 | 50 | 60 | 70 | V |
| C-E Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA; $R_{BE}$=∞ | 50 | 60 | 70 | V |

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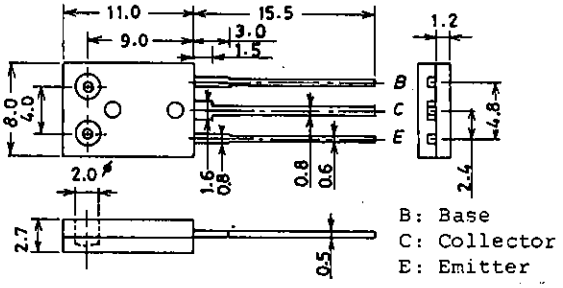
**Package Dimensions** 2043A
(unit: mm)



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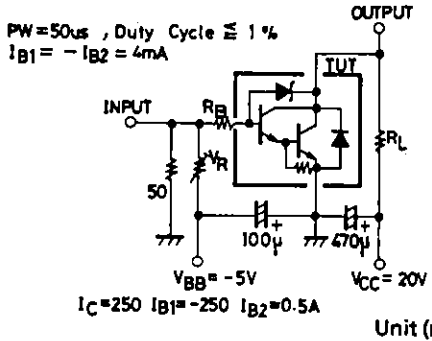
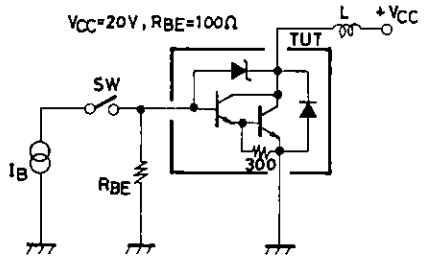
| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Turn-on Time | $t_{on}$ | See specified Test Circuit. | | 0.2 | | us |
| Storage Time | $t_{stg}$ | " | | 2.2 | | us |
| Fall Time | $t_f$ | " | | 0.4 | | us |

**Switching Time Test Circuit**




**Es/b Test Circuit**




Unit (resistance: Ω, capacitance: F)