

2SD1628

T-35-15



2038

NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

©1781A

Applications

- Strobe DC-DC converters, relay drivers, hammer drivers, lamp drivers, motor drivers.

Features

- Low saturation voltage.
- High h_{FE} .
- Large current capacity.
- Very small size making it easy to provide high-density, small-sized hybrid IC's.

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

| | | unit |
|------------------------------|--------------------|------------------------------|
| Collector to Base Voltage | V_{CB0} | 60 V |
| Collector to Emitter Voltage | V_{CE0} | 20 V |
| Emitter to Base Voltage | V_{EB0} | 6 V |
| Collector Current | I_C | 5 A |
| Peak Collector Current | i_{cp} | 8 A |
| Collector Dissipation | P_C | 500 mW |
| | $P_C(\text{Note})$ | 1.5 W |
| Junction Temperature | T_j | 150 $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to +150 $^\circ\text{C}$ |

(Note) Mounted on ceramic board (250mm² x 0.8mm)

Electrical Characteristics at $T_a=25^\circ\text{C}$

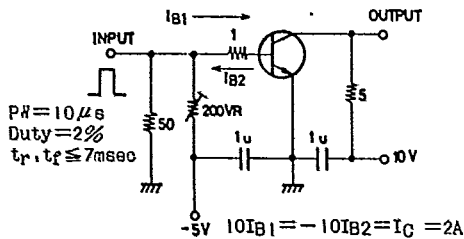
| | | min | typ | max | unit |
|--------------------------|--------------------------------------|------|-----|------|------|
| Collector Cutoff Current | I_{CBO} $V_{CB}=50V, I_E=0$ | | | 100 | nA |
| Emitter Cutoff Current | I_{EBO} $V_{EB}=5V, I_C=0$ | | | 100 | nA |
| DC Current Gain | $h_{FE}(1)$ $V_{CE}=2V, I_C=0.5A$ | 120* | | 560* | |
| | $h_{FE}(2)$ $V_{CE}=2V, I_C=3A$ | 95 | | | |
| Gain-Bandwidth Product | f_T $V_{CE}=10V, I_C=50mA$ | | 120 | | MHz |
| Output Capacitance | c_{ob} $V_{CB}=10V, f=1MHz$ | | 45 | | pF |
| C-E Saturation Voltage | $V_{CE(sat)}$ $I_C=3A, I_B=60mA$ | | | 500 | mV |
| B-E Saturation Voltage | $V_{BE(sat)}$ $I_C=3A, I_B=60mA$ | | | 1.5 | V |
| Turn-ON Time | t_{on} See specified Test Circuit. | | 30 | | ns |
| Storage Time | t_{stg} " | | 300 | | ns |
| Fall Time | t_f " | | 40 | | ns |

* The 2SD1628 is classified by 0.5A h_{FE} as follows:

| | | | | | | | | |
|-----|---|-----|-----|---|-----|-----|---|-----|
| 120 | E | 200 | 160 | F | 320 | 280 | G | 560 |
|-----|---|-----|-----|---|-----|-----|---|-----|

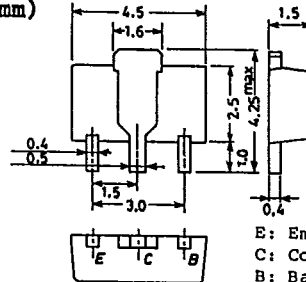
Marking :DK

Switching Time Test Circuit



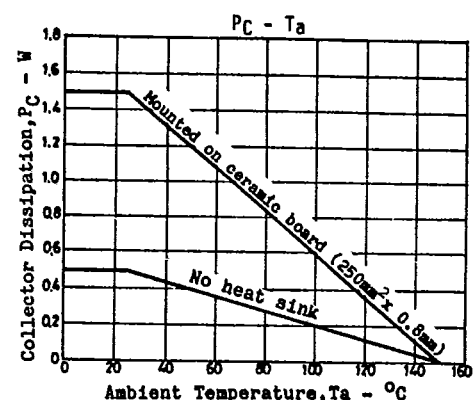
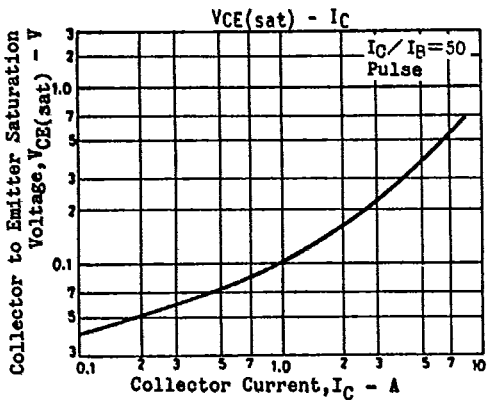
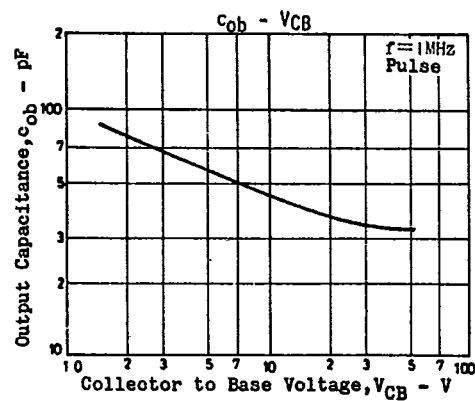
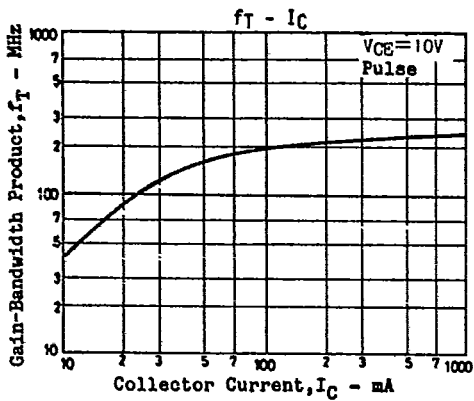
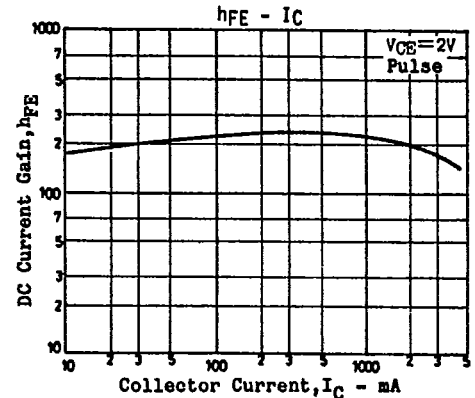
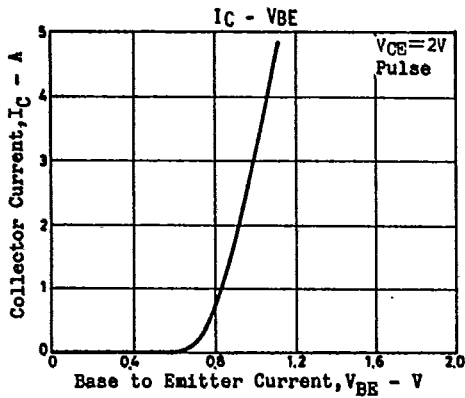
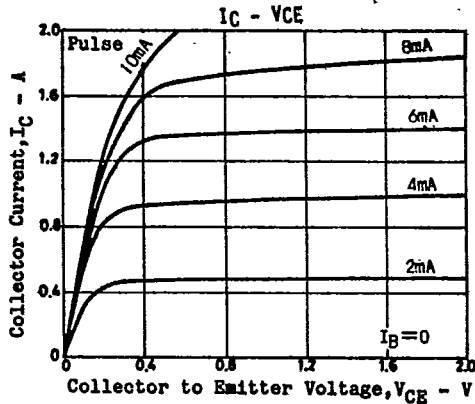
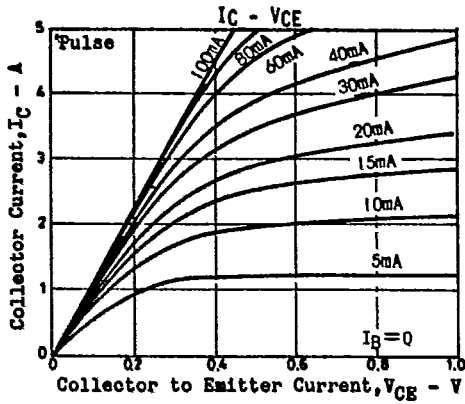
Case Outline 2038

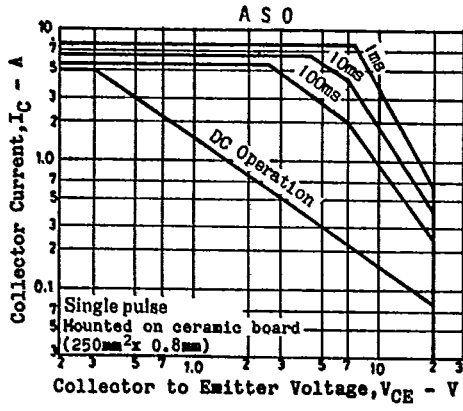
(unit:mm)



E: Emitter
C: Collector
B: Base

SANYO: PCP

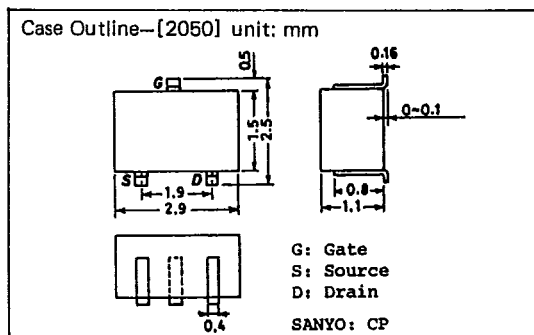
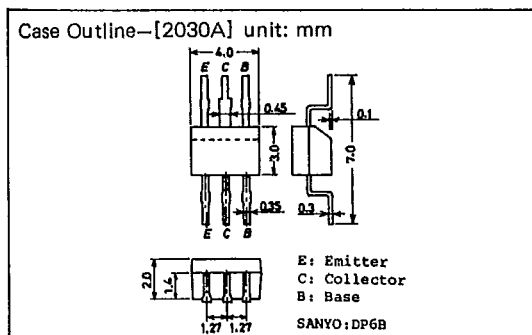
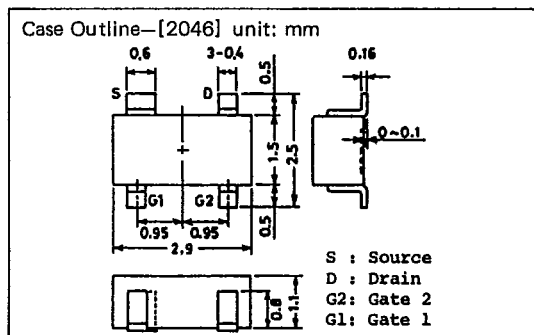
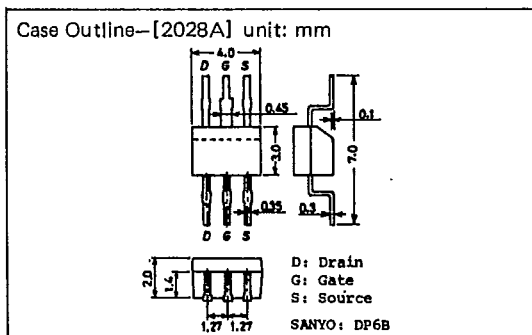
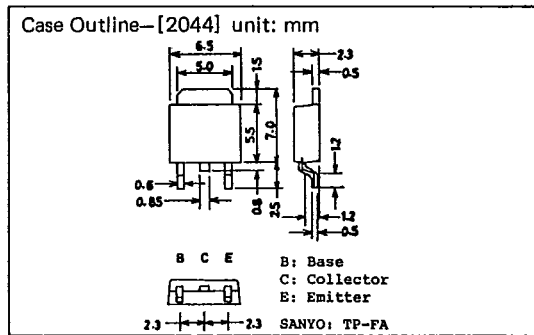
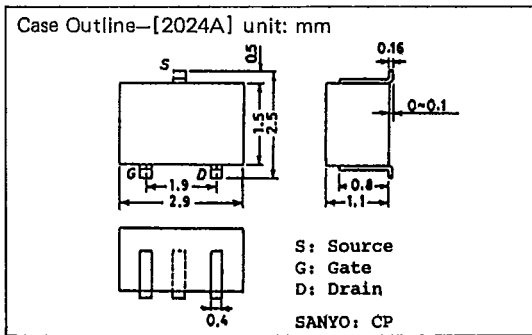
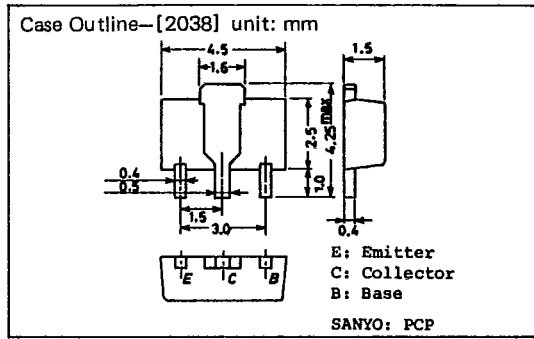
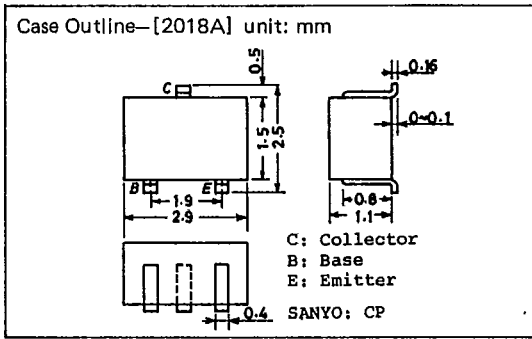




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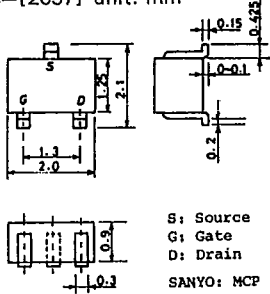
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- All of Sanyo surface mount transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.



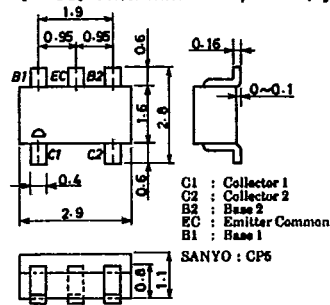
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Case Outline—[2057] unit: mm



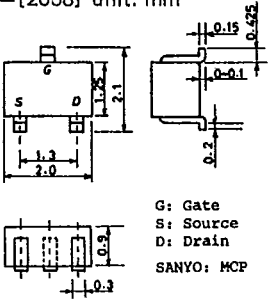
S: Source
G: Gate
D: Drain
SANYO: MCP

Case Outline—[2066] unit: mm



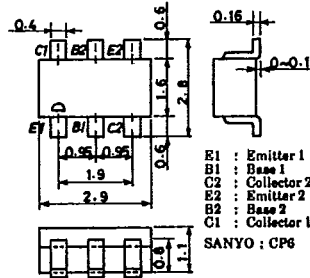
C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP6

Case Outline—[2058] unit: mm



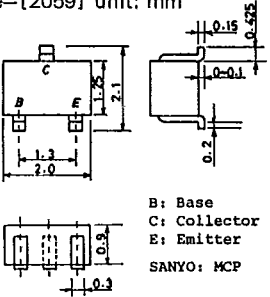
G: Gate
S: Source
D: Drain
SANYO: MCP

Case Outline—[2067] unit: mm



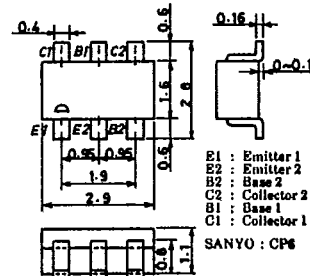
E1 : Emitter 1
B1 : Base 1
C2 : Collector 2
E2 : Emitter 2
B2 : Base 2
C1 : Collector 1
SANYO : CP6

Case Outline—[2059] unit: mm



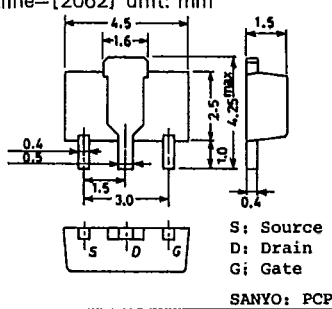
B: Base
C: Collector
E: Emitter
SANYO: MCP

Case Outline—[2068] unit: mm



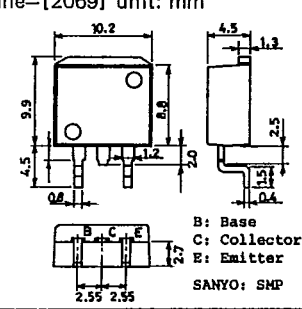
E1 : Emitter 1
E2 : Emitter 2
B2 : Base 2
C2 : Collector 2
B1 : Base 1
C1 : Collector 1
SANYO : CP6

Case Outline—[2062] unit: mm



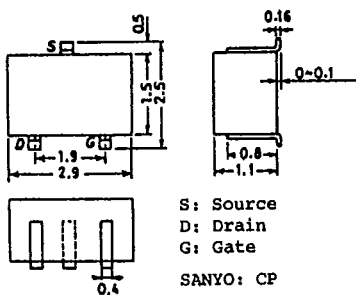
S: Source
D: Drain
G: Gate
SANYO: PCP

Case Outline—[2069] unit: mm



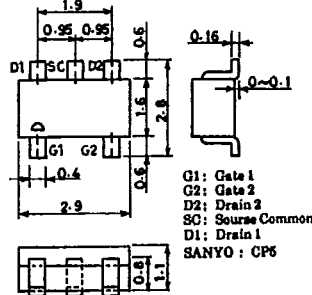
B: Base
C: Collector
E: Emitter
SANYO: SMP

Case Outline—[2065] unit: mm



S: Source
D: Drain
G: Gate
SANYO: CP

Case Outline—[2070] unit: mm



G1 : Gate 1
G2 : Gate 2
D2 : Drain 2
SC : Source Common
D1 : Drain 1
SANYO : CP6

T-9120

