2SA1731

T-37-15

2044 PNP Epitaxial Planar Silicon Transistor

High-Speed Switching Applications

E3135A

Features

- Adoption of FBET, MBIT processes
- Large current capacity
- Low collector-to-emitter saturation voltage
- Fast switching speed

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V_{CBO}	−50	V
Collector to Emitter Voltage	V_{CEO}	−40	V
Emitter to Base Voltage	V_{EBO}	−5	V
Collector Current	I_C	−5	A
Peak Collector Current	i_{cp}	−8	A
Collector Dissipation	P_C	1	W
	Tc=25°C	15	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55 to +150	°C

Electrical Characteristics at Ta=25°C

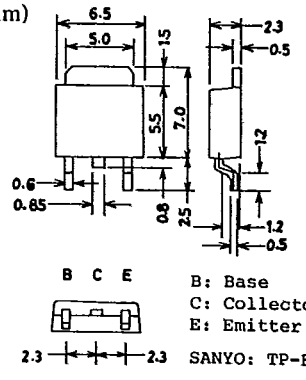
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=-40V, I_E=0$			−1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-3V, I_C=0$			−1	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=-2V, I_C=-500mA$	70※		280※	
	$h_{FE}(2)$	$V_{CE}=-2V, I_C=-5A$	25			
Gain-Bandwidth Product	f_T	$V_{CE}=-2V, I_C=-500mA$		300		MHz
Output Capacitance	c_{ob}	$V_{CB}=-10V, f=1MHz$		60		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-2.5A, I_B=-125mA$		−0.3	−0.8	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-2.5A, I_B=-125mA$		−0.95	−1.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-100μA, I_E=0$	−50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	−40			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-100μA, I_C=0$	−5			V

Continued on next page.

※: The 2SA1731 is classified by 500mA h_{FE} as follows:

70 Q 140	100 R 200	140 S 280

Case Outline 2044
(unit: mm)

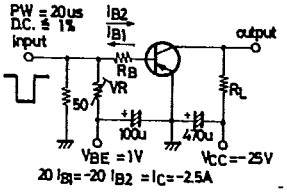


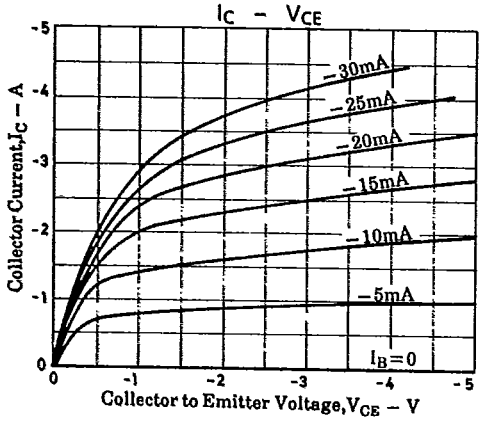
B: Base
C: Collector
E: Emitter
SANYO: TP-FA

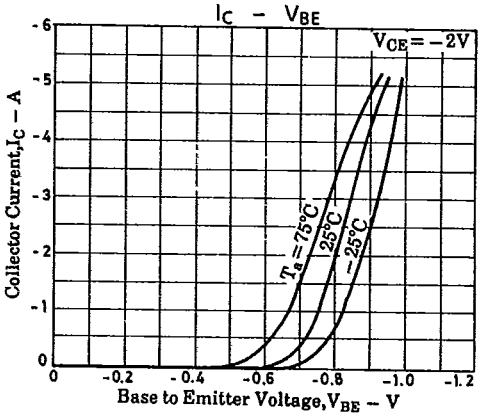
Continued from preceding page.

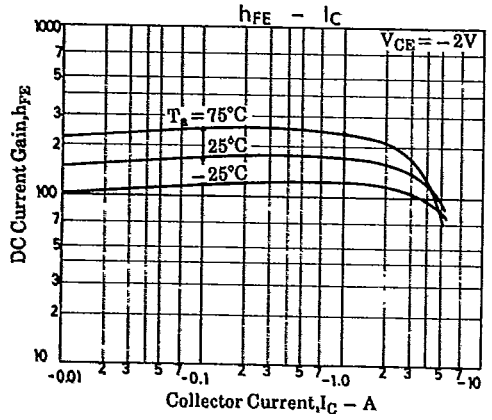
			min	typ	max	unit
Turn-ON Time	t_{on}	See specified Test Circuit.		50	100	ns
Storage Time	t_{stg}	〃		120	220	ns
Turn-OFF Time	t_{off}	〃		150	300	ns

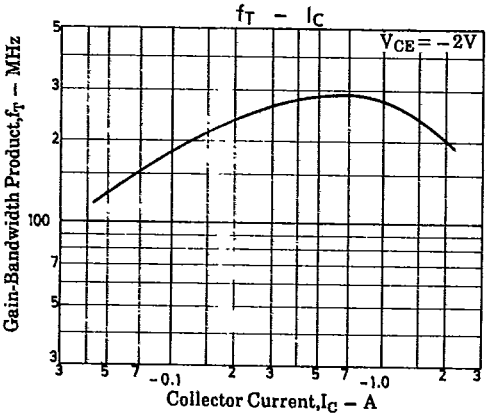
Switching Time Test Circuit

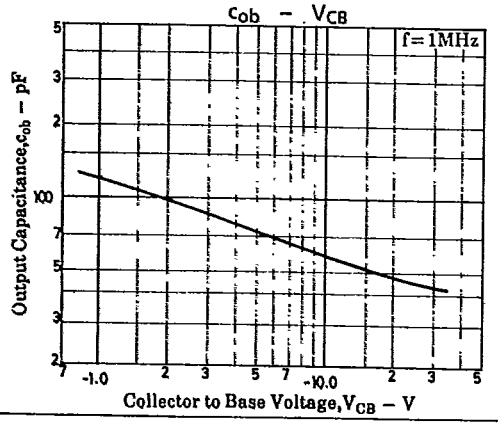


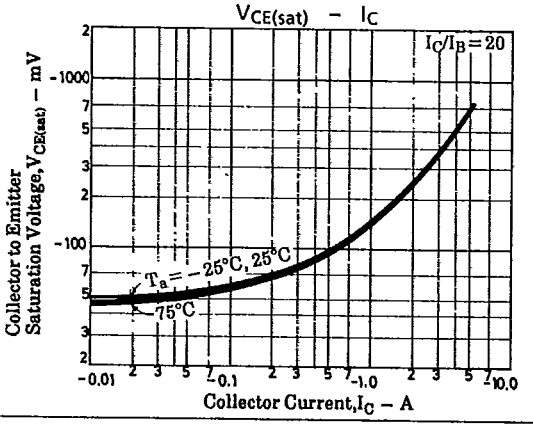




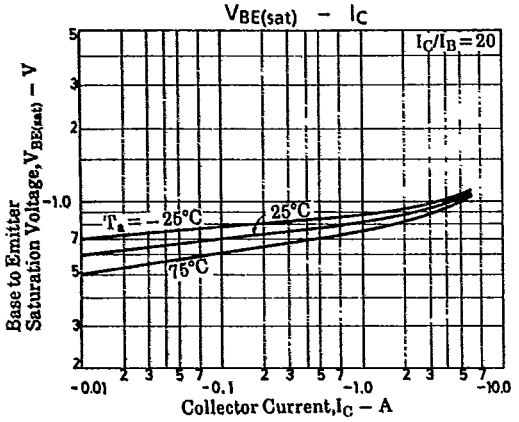




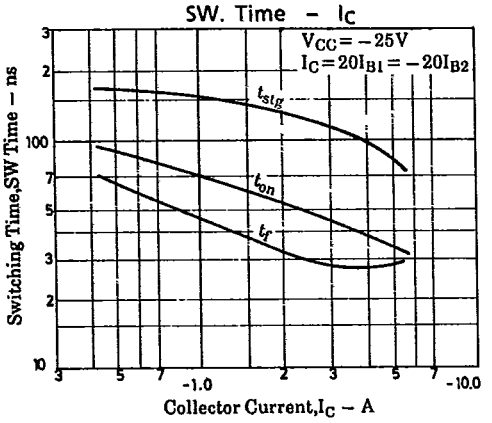




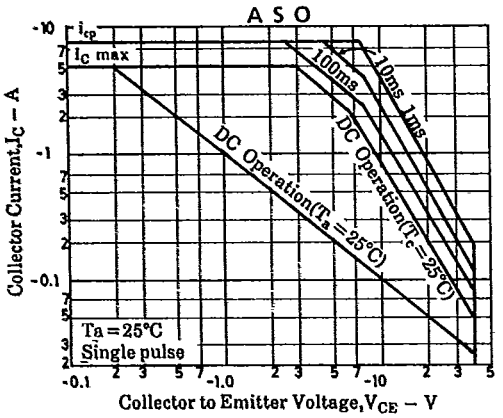
$V_{BE(sat)}$ – I_C



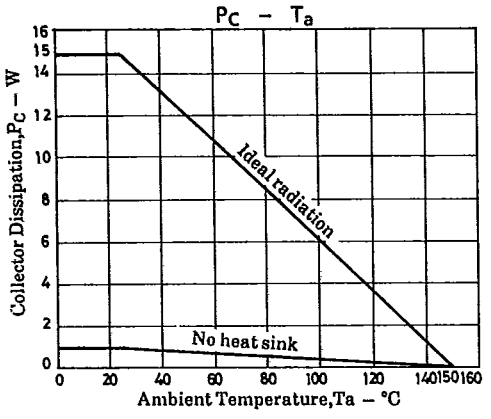
SW. Time – I_C



A S O



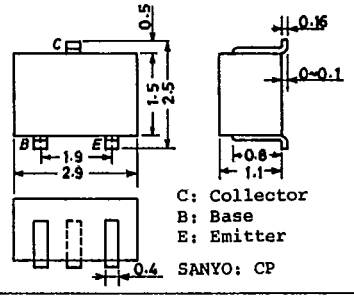
P_C – T_a



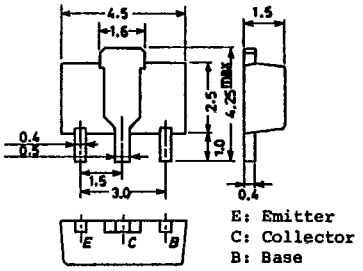
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.

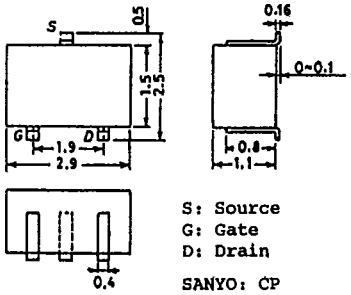
Case Outline—[2018A] unit: mm



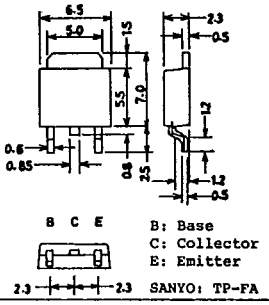
Case Outline—[2038] unit: mm



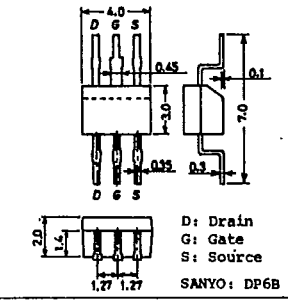
Case Outline—[2024A] unit: mm



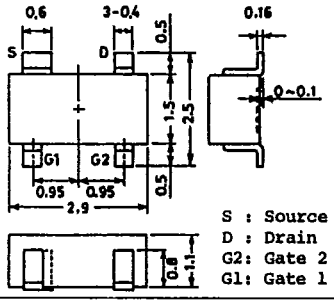
Case Outline—[2044] unit: mm



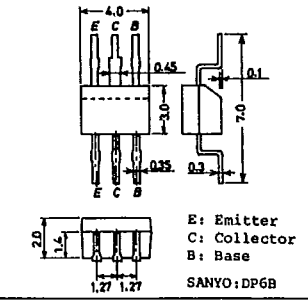
Case Outline—[2028A] unit: mm



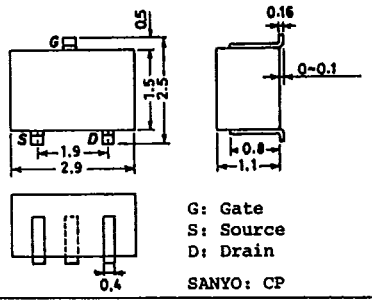
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm



Case Outline—[2050] unit: mm



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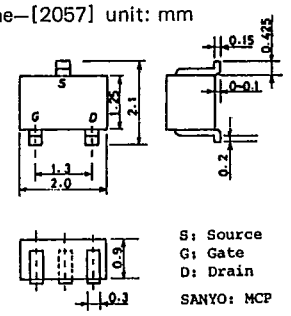
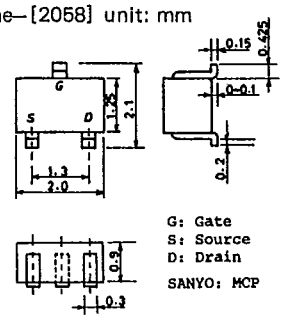
Case Outline—[2057] unit: mm



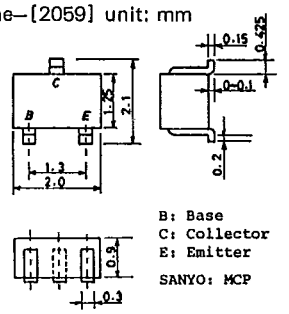
S: Source
G: Gate
D: Drain
SANYO: MCP

Case Outline—[2058] unit: mm



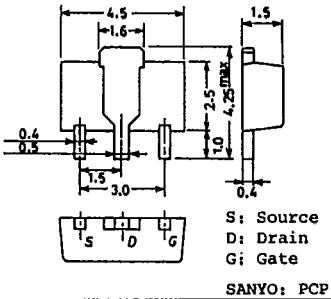
G: Gate
S: Source
D: Drain
SANYO: MCP

Case Outline—[2059] unit: mm



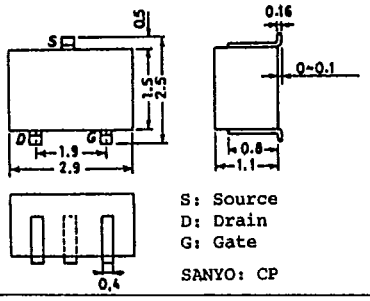
B: Base
C: Collector
E: Emitter
SANYO: MCP

Case Outline—[2062] unit: mm



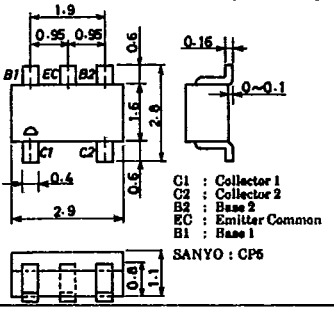
S: Source
D: Drain
G: Gate
SANYO: PCP

Case Outline—[2065] unit: mm



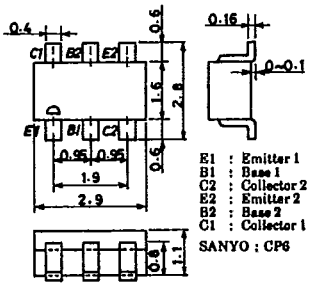
S: Source
D: Drain
G: Gate
SANYO: CP

Case Outline—[2066] unit: mm



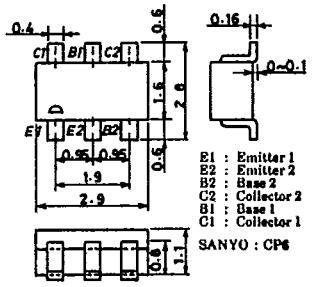
C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP6

Case Outline—[2067] unit: mm



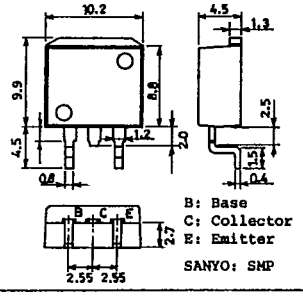
E1 : Emitter 1
B1 : Base 1
C2 : Collector 2
E2 : Emitter 2
B2 : Base 2
C1 : Collector 1
SANYO : CP6

Case Outline—[2068] unit: mm



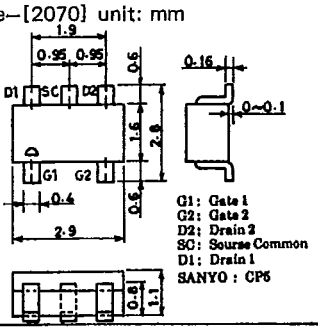
E1 : Emitter 1
E2 : Emitter 2
B2 : Base 2
C2 : Collector 2
B1 : Base 1
C1 : Collector 1
SANYO : CP6

Case Outline—[2069] unit: mm



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

Case Outline—[2070] unit: mm



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

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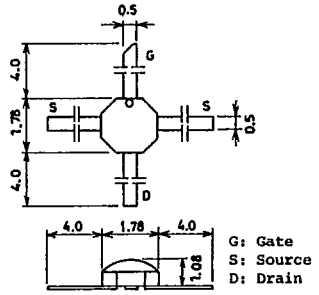
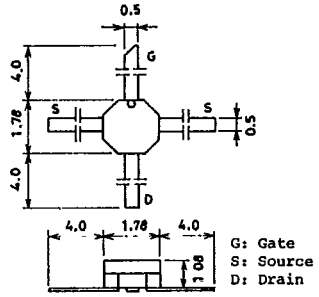
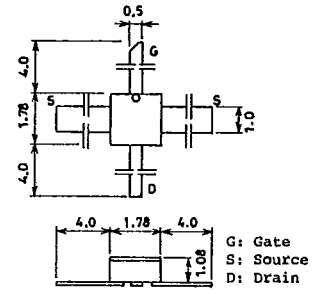
Case Outline—[2071] unit: mm



Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm