

2SD1805

T-33-07



2044

NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

©21158

Applications

- Strobes, voltage regulators, relay drivers, lamp drivers

Features

- Low saturation voltage
- Fast switching time
- Large current capacity
- Small and slim package making it easy to make 2SD1805-applied sets smaller

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

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	1	W
		15	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			100	nA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	120*		560*	
	$h_{FE}(2)$	$V_{CE} = 2\text{V}, I_C = 3\text{A}$	95			
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$		120		MHz
Output Capacitance	c_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		45		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 60\text{mA}$		220	500	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 3\text{A}, I_B = 60\text{mA}$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	20			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V

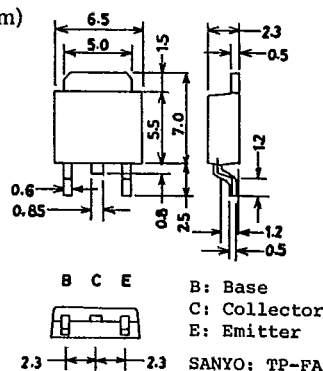
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*: The 2SD1805 is classified by 500mA h_{FE} as follows:

120	E	200	160	F	320	280	G	560
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Case Outline 2044

(unit: mm)



8309MO/5277KI/O236KI, TS No. 2115-1/3

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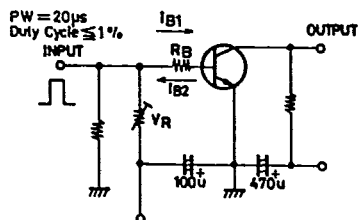
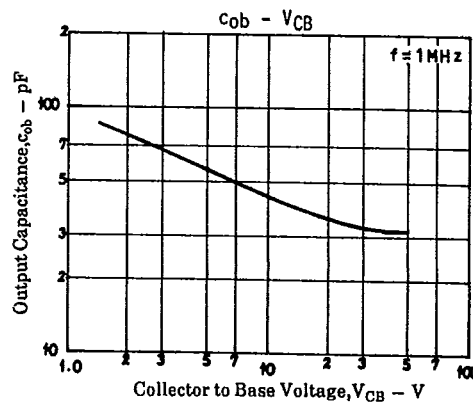
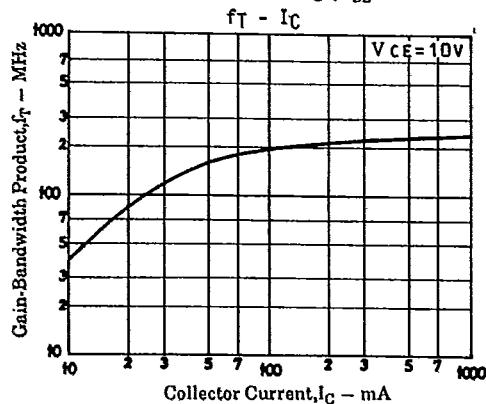
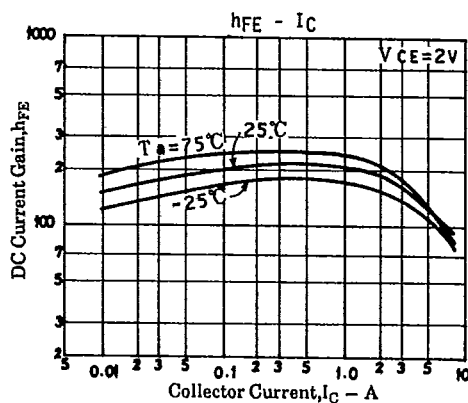
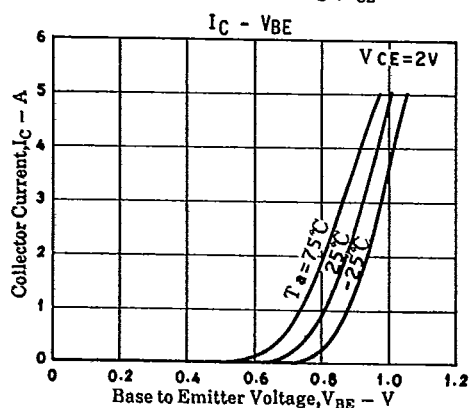
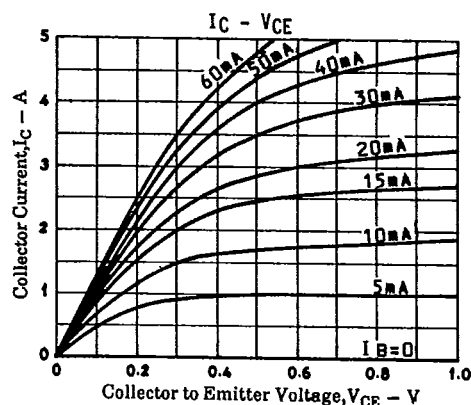
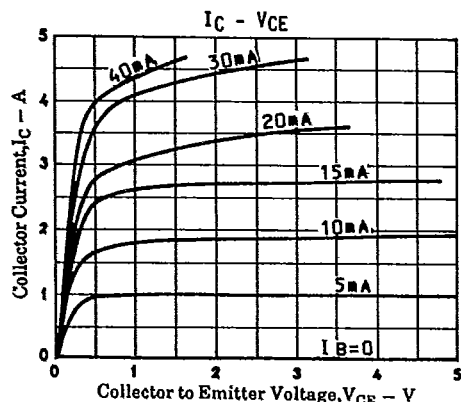
Turn-on Time
Storage Time
Fall Time

t_{on}
 t_{stg}
 t_f

See specified Test Circuit.

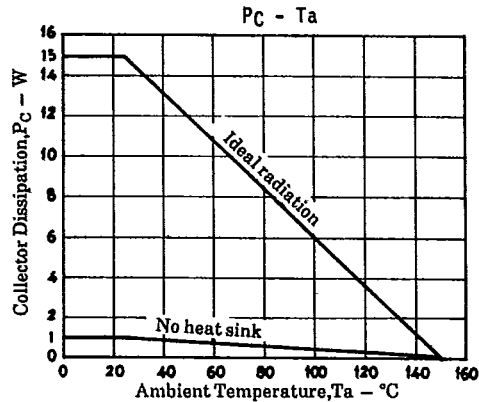
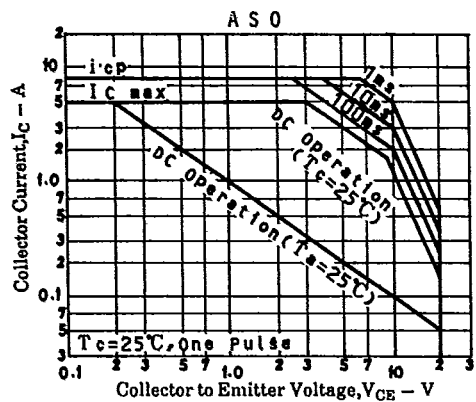
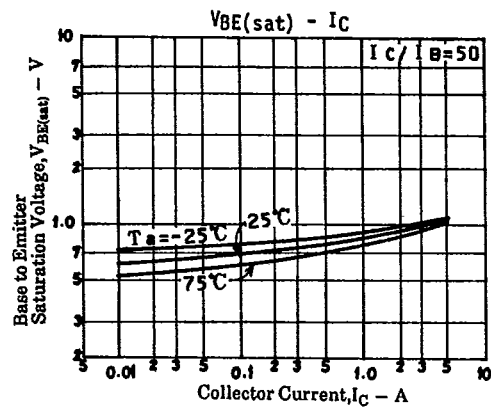
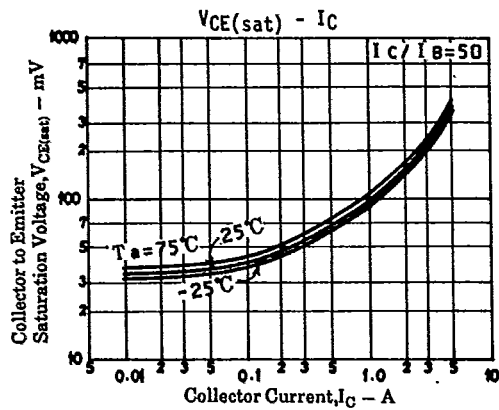
min	typ	max	unit
	30		ns
	300		ns
	40		ns

Switching Time Test Circuit

 $I_C = 10 I_{B1} = -10 I_{B2} = 2A, V_{CE} = 10V$ 

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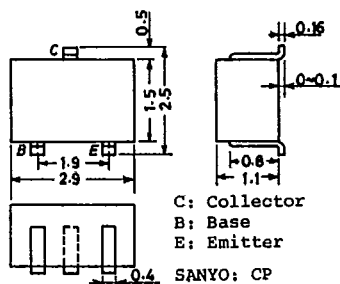


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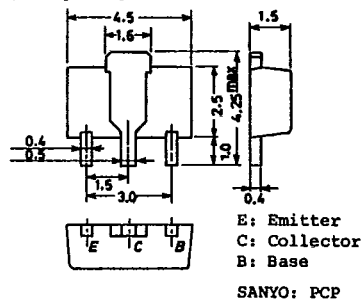
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.

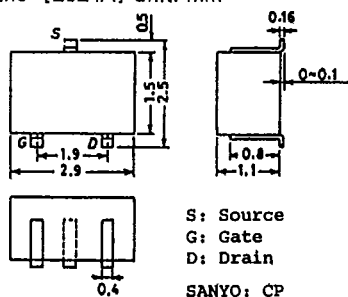
Case Outline—[2018A] unit: mm



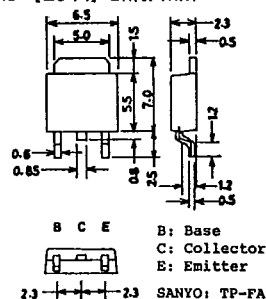
Case Outline—[2038] unit: mm



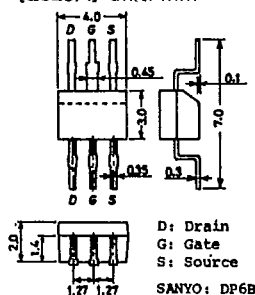
Case Outline—[2024A] unit: mm



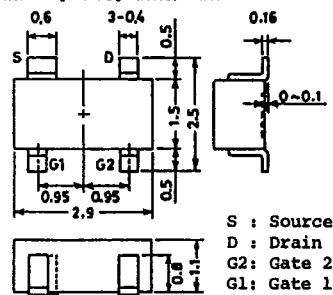
Case Outline—[2044] unit: mm



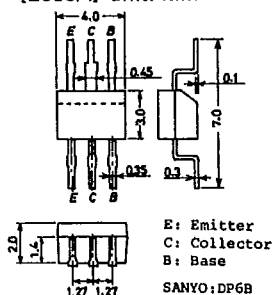
Case Outline—[2028A] unit: mm



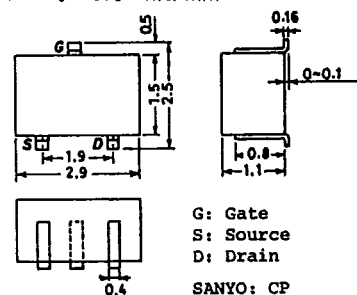
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm

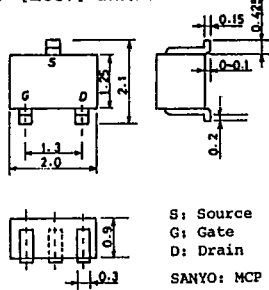


Case Outline—[2050] unit: mm

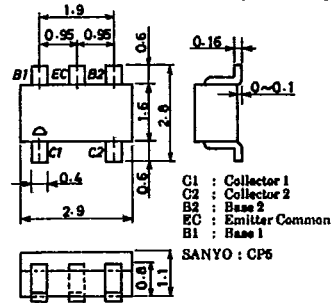


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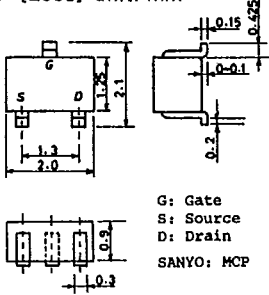
Case Outline—[2057] unit: mm



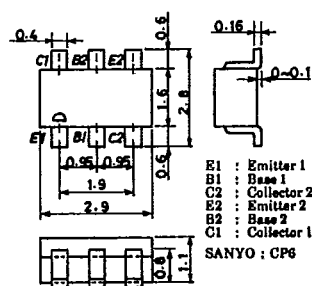
Case Outline—[2066] unit: mm



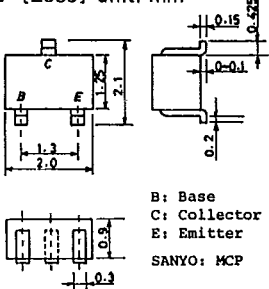
Case Outline—[2058] unit: mm



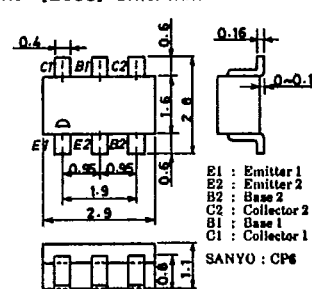
Case Outline—[2067] unit: mm



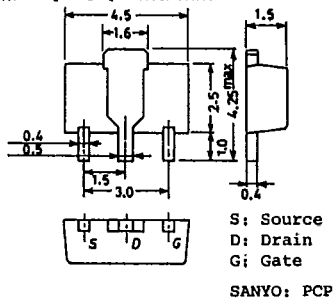
Case Outline—[2059] unit: mm



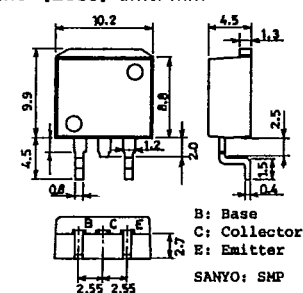
Case Outline—[2068] unit: mm



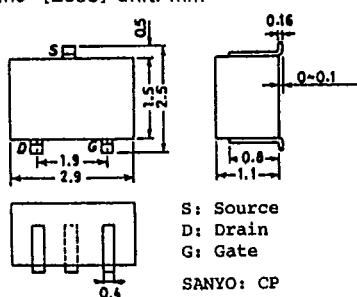
Case Outline—[2062] unit: mm



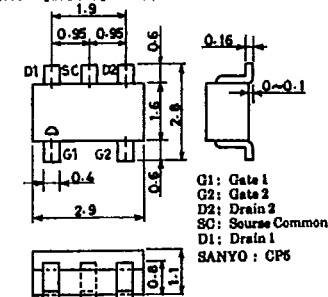
Case Outline—[2069] unit: mm



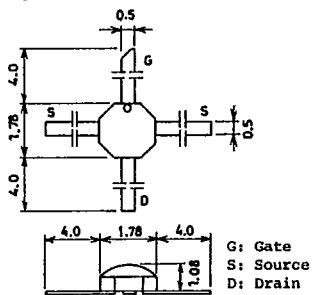
Case Outline—[2065] unit: mm



Case Outline—[2070] unit: mm

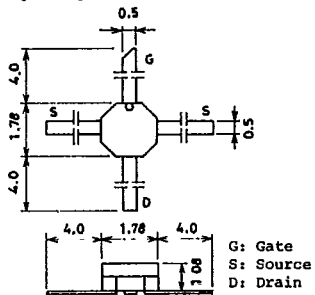


Case Outline—[2071] unit: mm



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Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm

