

**2SA1687,
2SC4446**

T-29-15

2059

PNP/NPN Epitaxial Planar
Silicon Transistors**Low-Frequency General-Purpose
Amp Applications (High V_{EBO})**

©3013

Features

- Very small-sized package permitting the 2SA1687/2SC4446-applied sets to be made small and slim
- High V_{EBO}

(): 2SA1687

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

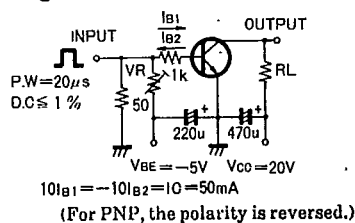
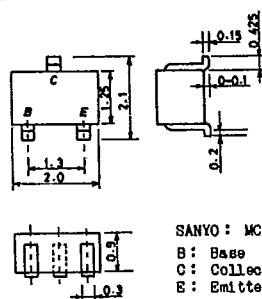
			unit
Collector to Base Voltage	V_{CBO}	(-)60	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)15	V
Collector Current	I_C	(-)150	mA
Peak Collector Current	i_{cp}	(-)300	mA
Base Current	I_B	(-)30	mA
Collector Dissipation	P_C	150	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)40\text{V}, I_E = 0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)10\text{V}, I_C = 0$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)6\text{V}, I_C = (-)1\text{mA}$	135*		600*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)6\text{V}, I_C = (-)1\text{mA}$		130		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$		(-0.25)0.15	(-)0.5	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$		(-)0.85	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu\text{A}, I_C = 0$	(-)15			V
Output Capacitance	c_{ob}	$V_{CB} = (-)6\text{V}, f = 1\text{MHz}$		(3.5)2.2		pF
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}	"		(460)590		ns
Fall Time	t_f	"		(60)110		ns

※: The 2SA1687/2SC4446 are classified by 1mA h_{FE} as follows:

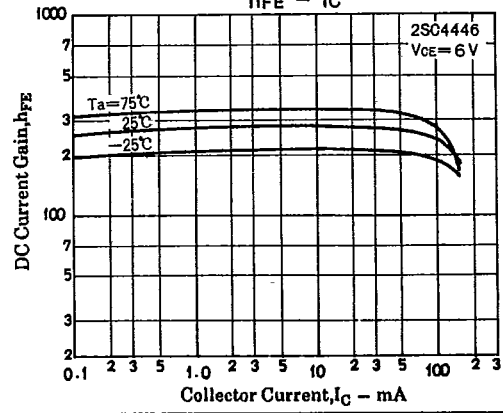
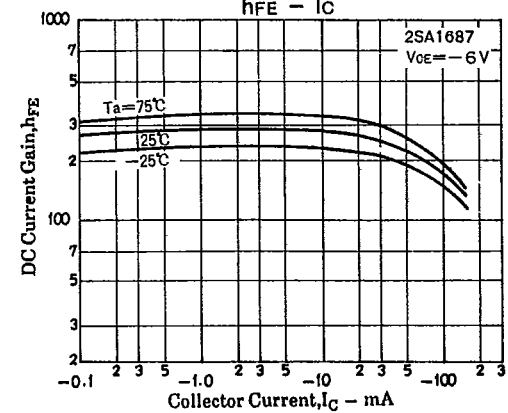
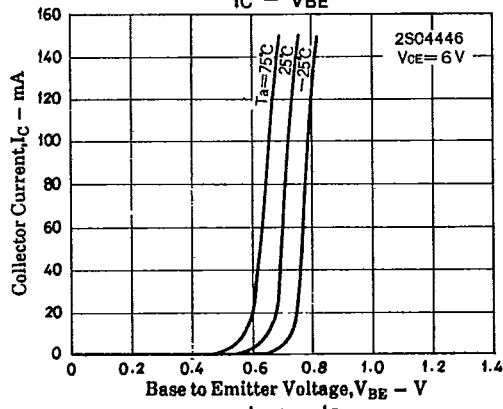
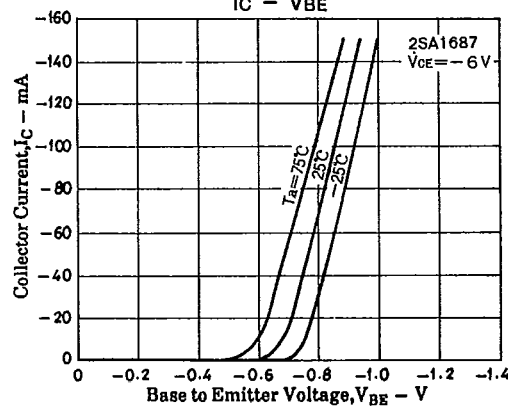
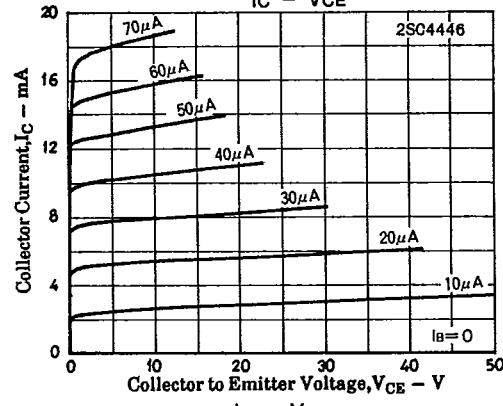
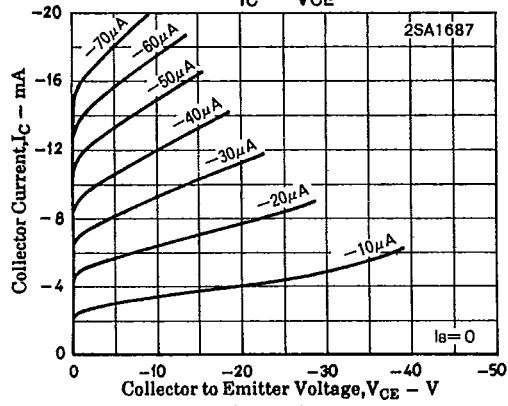
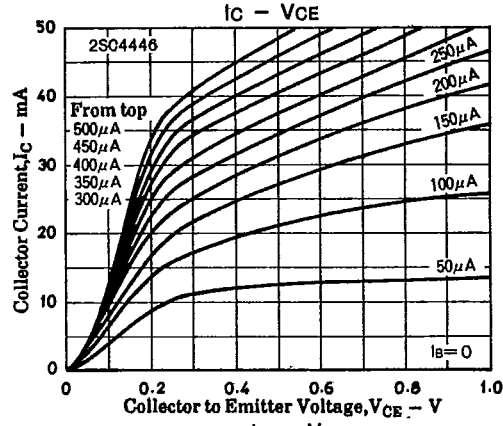
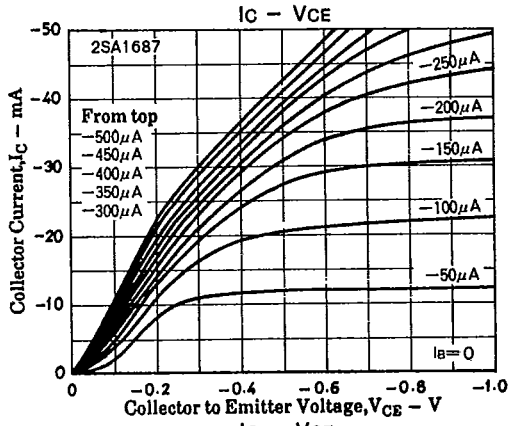
135	5	270	200	6	400	300	7	600
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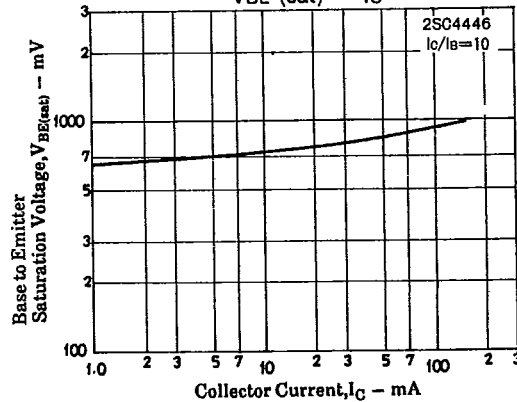
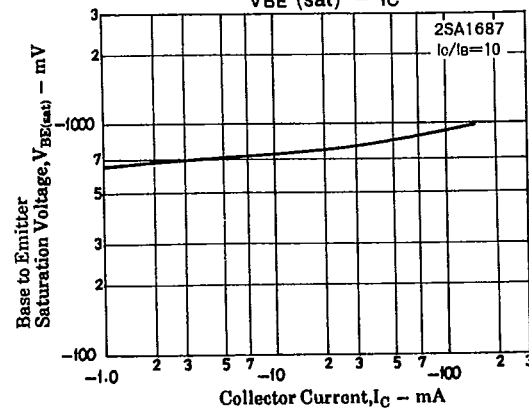
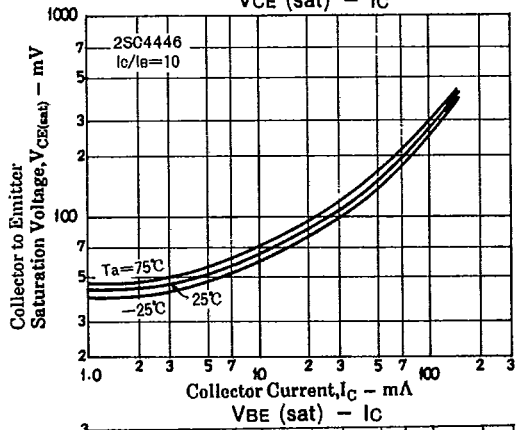
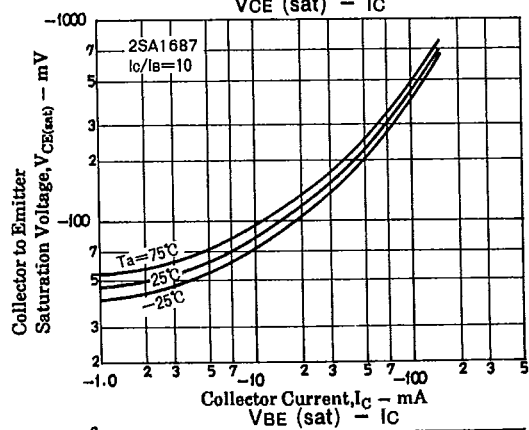
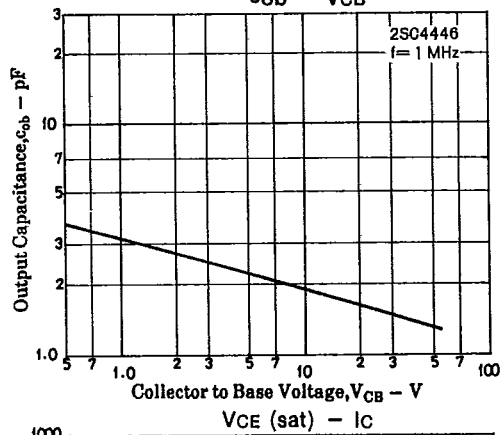
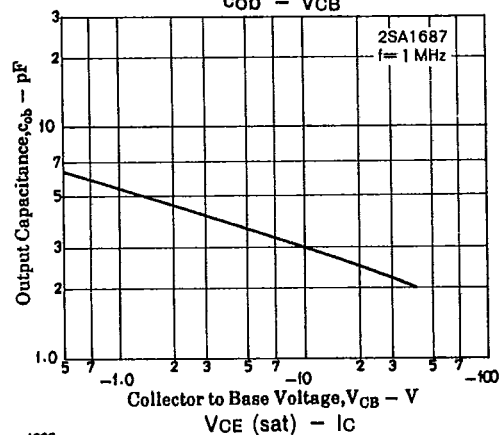
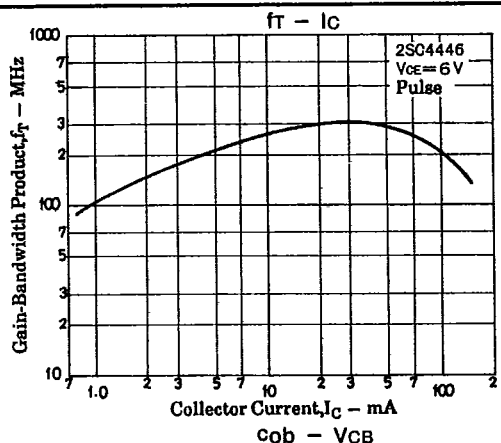
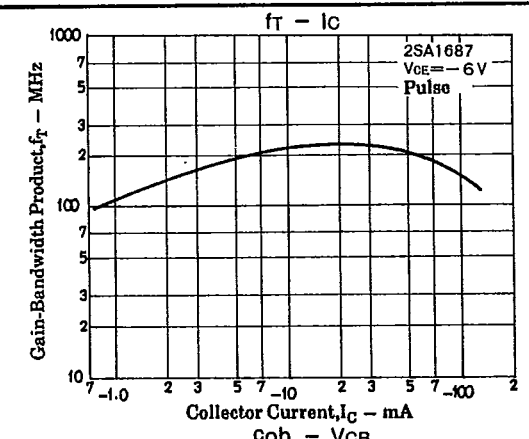
Marking: D (2SA1687)
H (2SC4446) h_{FE} rank: 5, 6, 7**Switching Time Test Circuit****Case Outline 2059**
(unit: mm)

5189MO, TS No. 3013-1/4

2SA1687/2SC4446

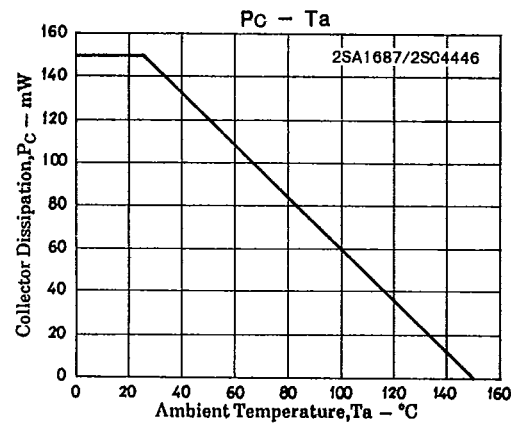
T-29-15





2SA1687/2SC4446

T-29-15

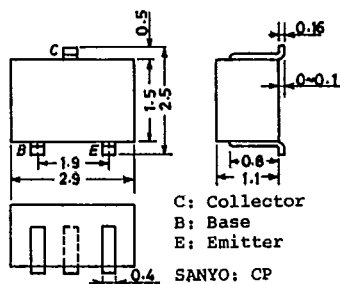


T-91-20

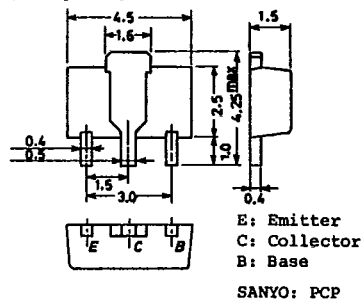
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.

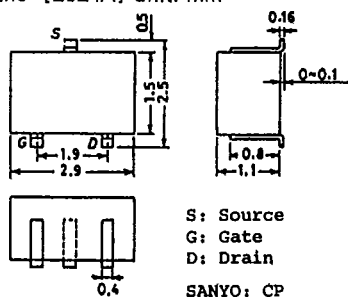
Case Outline—[2018A] unit: mm



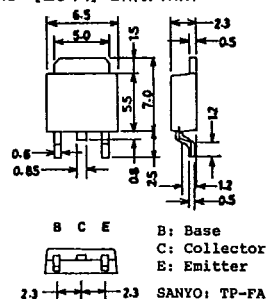
Case Outline—[2038] unit: mm



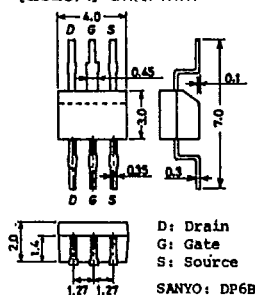
Case Outline—[2024A] unit: mm



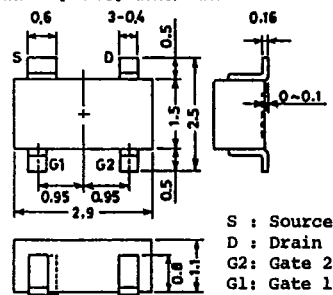
Case Outline—[2044] unit: mm



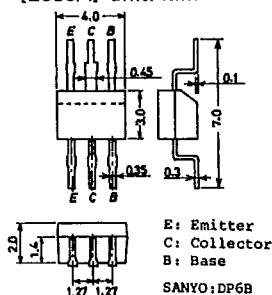
Case Outline—[2028A] unit: mm



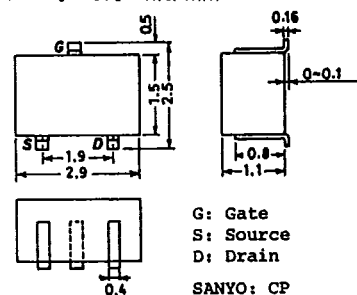
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm

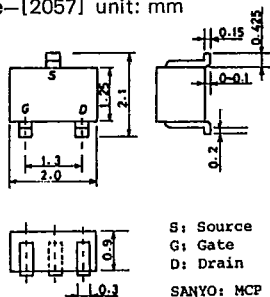


Case Outline—[2050] unit: mm

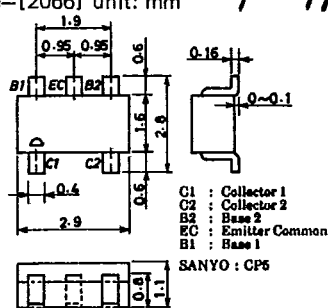


T-91-20

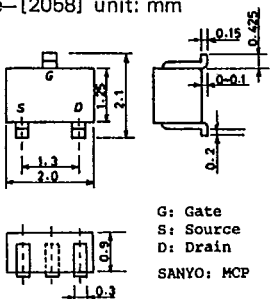
Case Outline—[2057] unit: mm



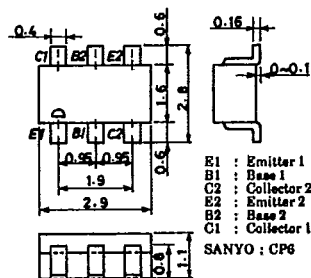
Case Outline—[2066] unit: mm



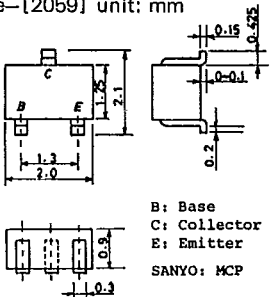
Case Outline—[2058] unit: mm



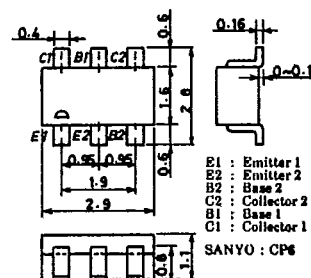
Case Outline—[2067] unit: mm



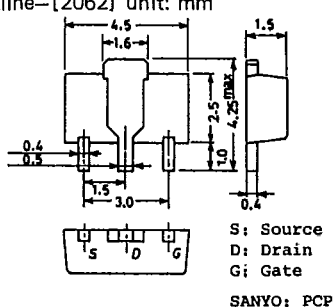
Case Outline—[2059] unit: mm



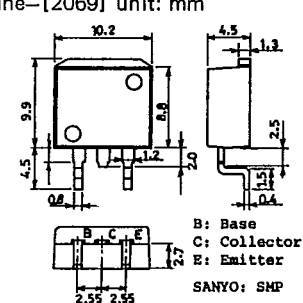
Case Outline—[2068] unit: mm



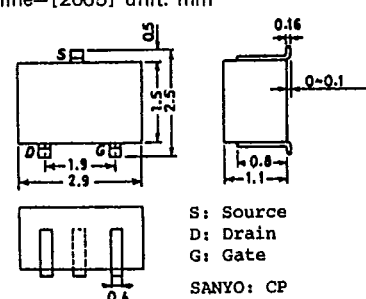
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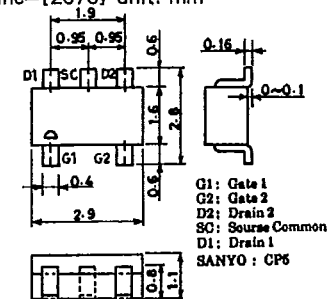
Case Outline—[2069] unit: mm



Case Outline—[2065] unit: mm

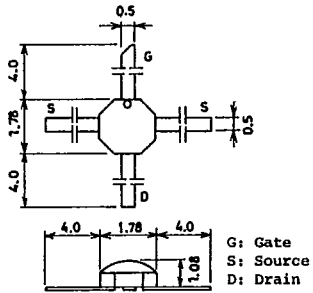


Case Outline—[2070] unit: mm

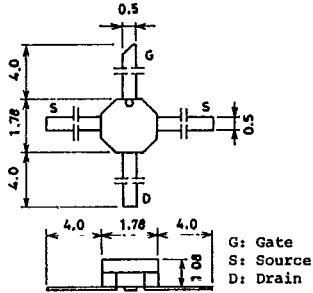


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Case Outline-[2071] unit: mm



Case Outline-[2072] unit: mm



Case Outline-[2073] unit: mm

