

SANYO

No.3013

2SA1687/2SC4446

PNP/NPN Epitaxial Planar Silicon Transistors

Low-Frequency
General-Purpose Amp Applications**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
Collector Current(Pulse)	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

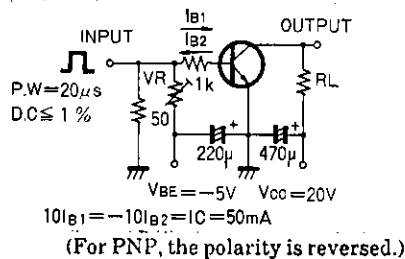
* : The 2SA1687/2SC4446 are classified by 1mA h_{FE} as follows :

135	5	270	200	6	400	300	7	600
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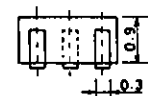
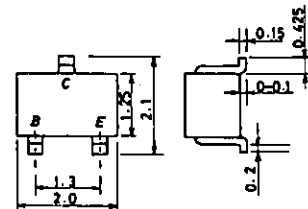
Marking : D (2SA1687)

 h_{FE} rank : 5,6,7

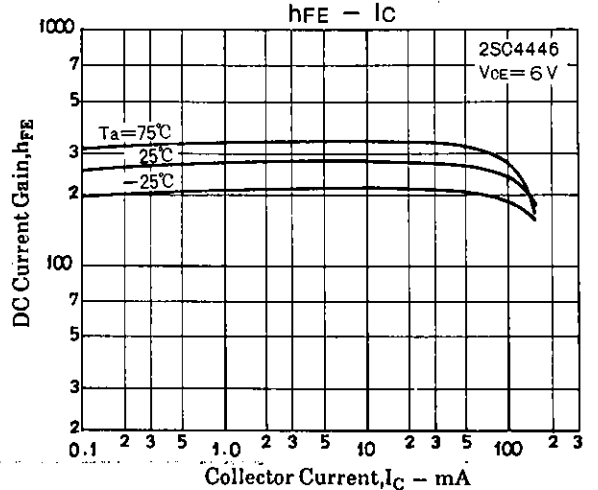
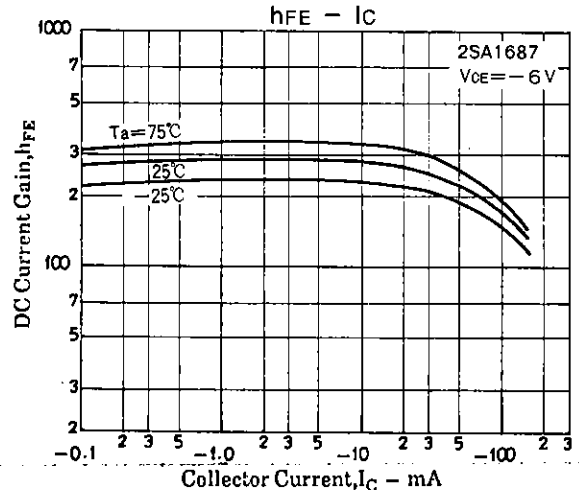
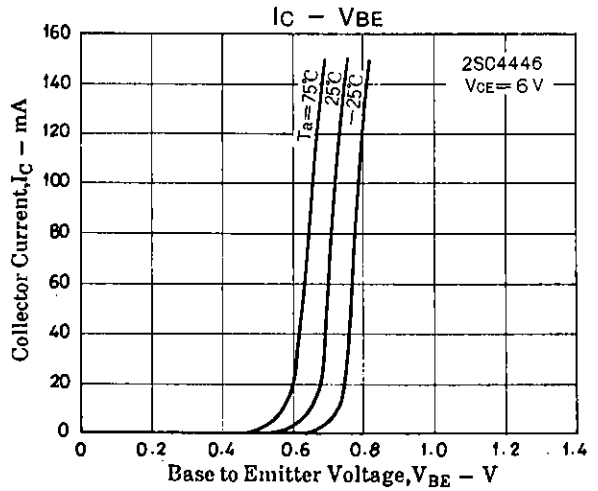
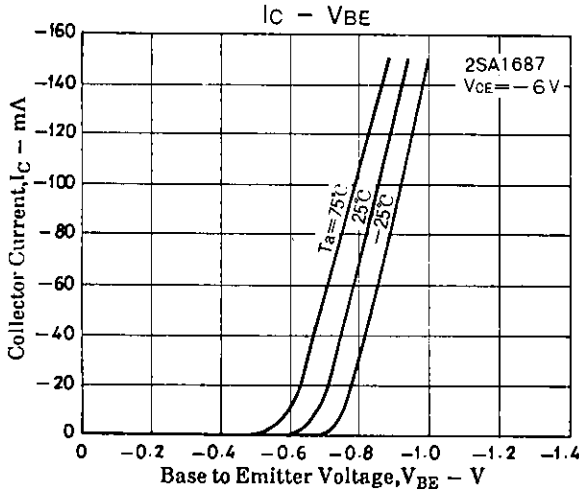
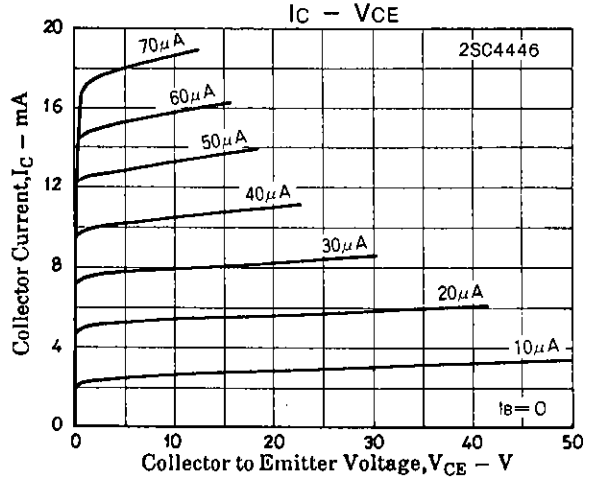
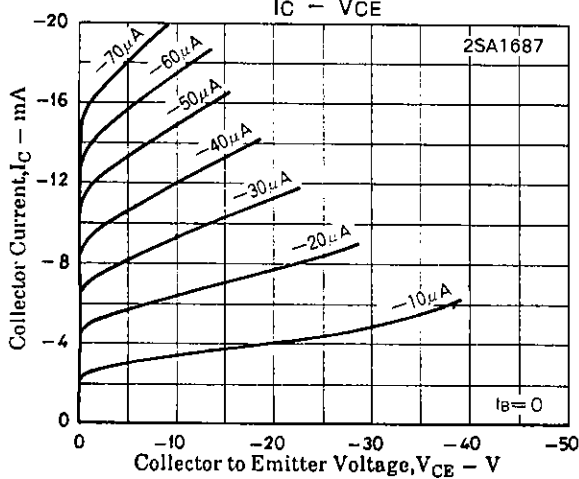
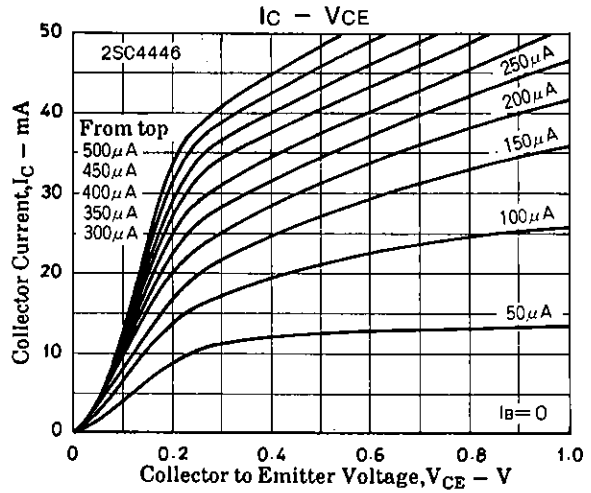
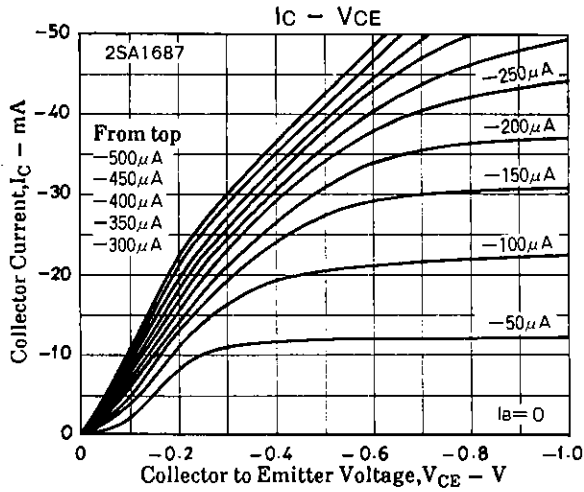
H (2SC4446)

Switching Time Test CircuitUnit (Resistance : Ω , Capacitance : F)**Package Dimensions 2059**

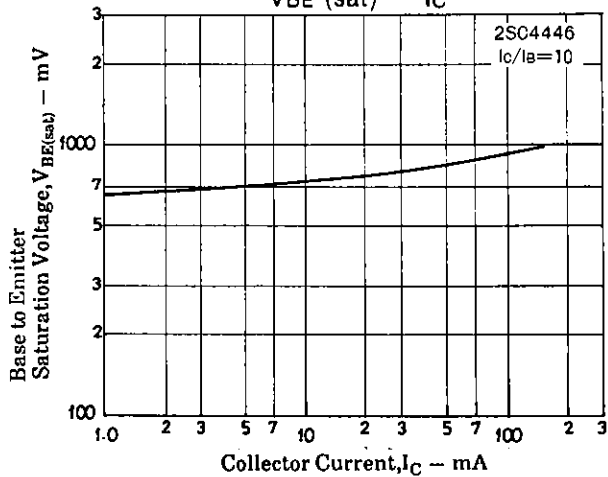
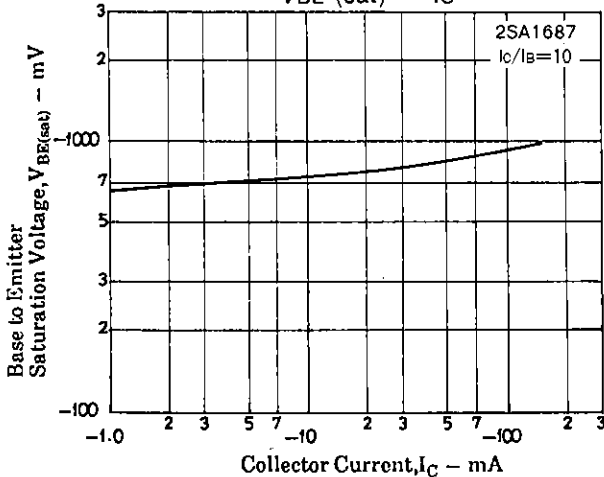
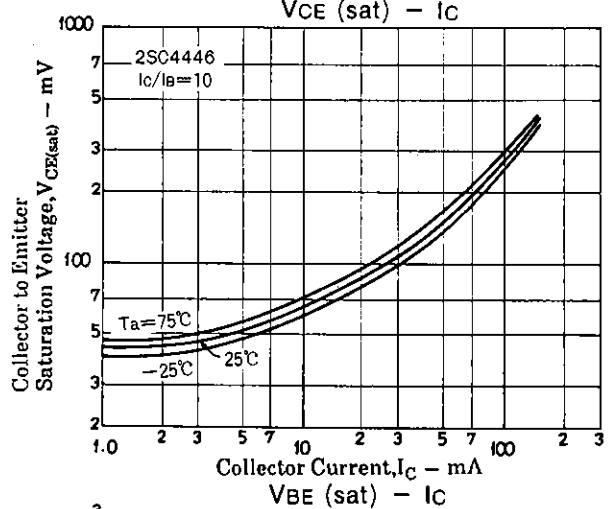
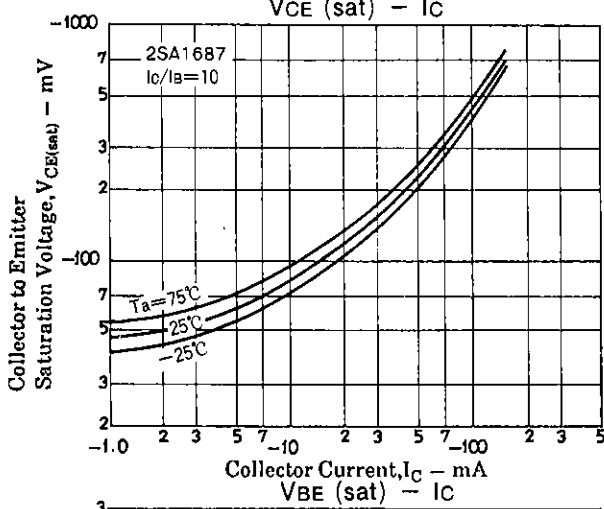
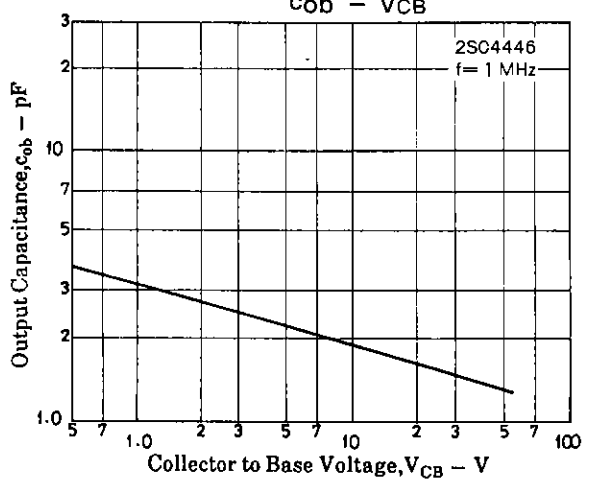
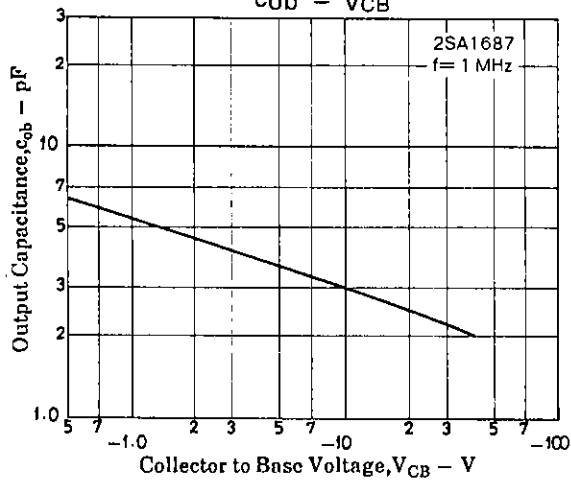
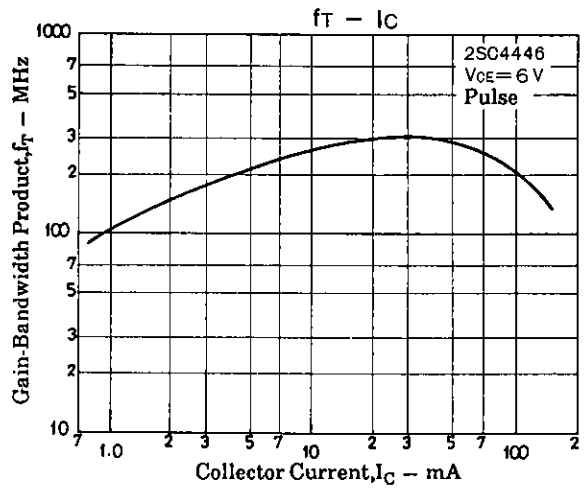
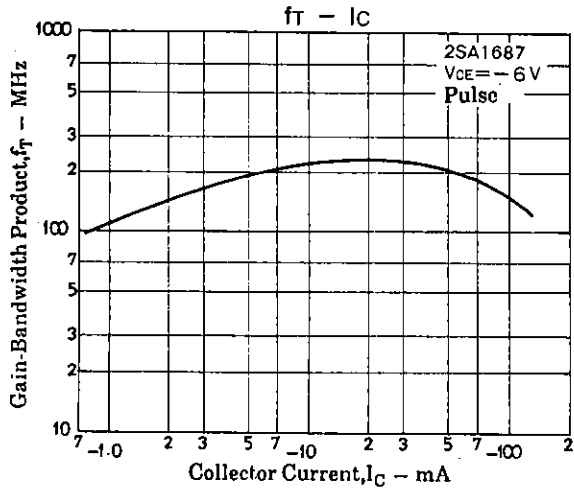
(unit : mm)

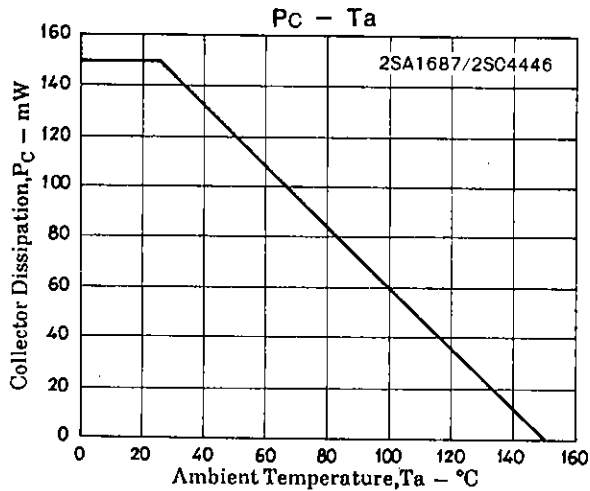
SANYO : MCP
B : Base
C : Collector
E : Emitter

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2SA1687/2SC4446





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