

SANYO	No.2479A	2SA1607/2SC4168
		PNP/NPN Epitaxial Planar Silicon Transistors High-Speed Switching Applications

Features

- Fast switching speed
- High gain-bandwidth product
- Low saturation voltage

() : 2SA1607

Absolute Maximum Ratings at Ta = 25°C

			unit
Collector to Base Voltage	V_{CB0}	(-)40	V
Collector to Emitter Voltage	V_{CE0}	(-)20	V
Emitter to Base Voltage	V_{EB0}	(-)5	V
Collector Current	I_C	(-)150	mA
Collector Current(Pulse)	I_{CP}	(-)300	mA
Base Current	I_B	(-)30	mA
Collector Dissipation	P_C	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)30V, I_E = 0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)1V, I_C = (-)10mA$	60*		270*	
					(180)	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)10mA$		700		MHz
				(400)		
Output Capacitance	c_{ob}	$V_{CB} = (-)10V, f = 1MHz$		(2.9)2.6		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)10mA, I_B = (-)1mA$		0.08	(-)0.2	V
				(-0.07)		
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)10mA, I_B = (-)1mA$		0.72	(-)1.0	V
				(-0.75)		
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)40			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)20			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-)5			V

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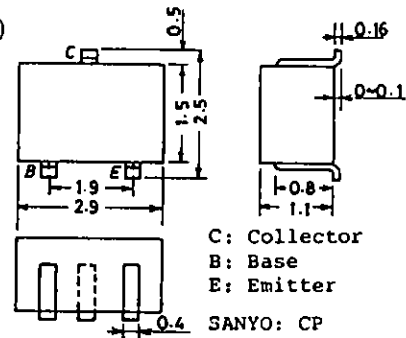
* : The 2SA1607/2SC4168 are classified by 10mA h_{FE} as follows :

2SA1607	60	3	120	90	4	180
2SC4168	60	3	120	90	4	180
				135	5	270

Marking 2SA1607 : YL
 2SC4168 : GT
 h_{FE} rank 2SA1607 : 3,4
 2SC4168 : 3,4,5

Package Dimensions 2018A

(unit : mm)

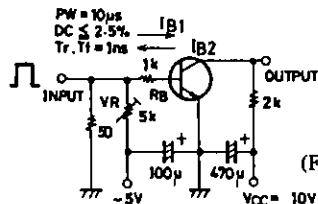


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			min	typ	max	unit
Delay Time	t_d	See specified Test Circuit.		(14)11	20	ns
Rise Time	t_r	"		(11)10	20	ns
Storage Time	t_{stg}	"		(80)70	180	ns
Fall Time	t_f	"		(16)15	25	ns

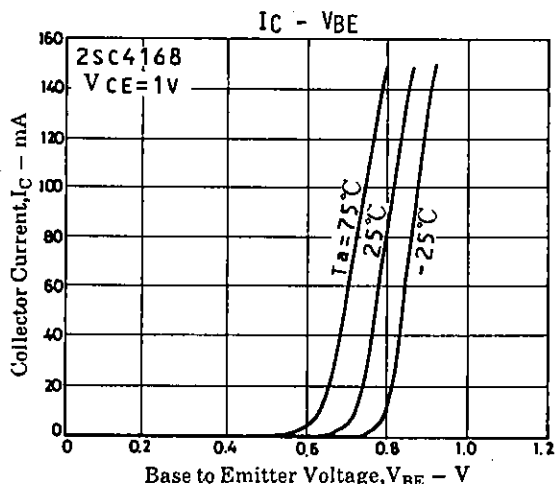
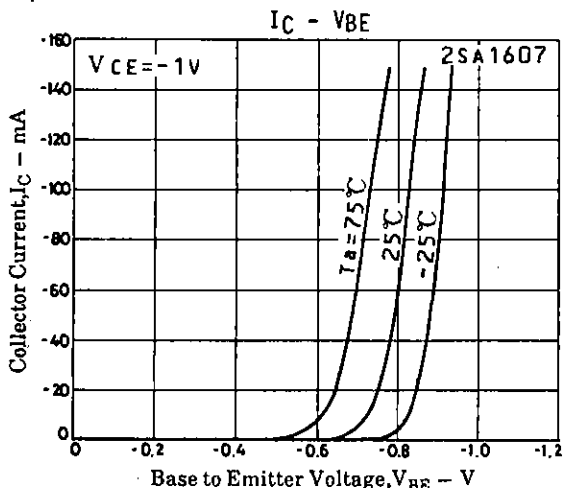
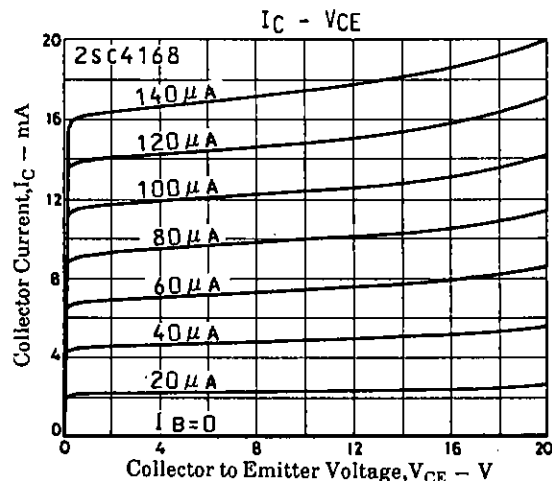
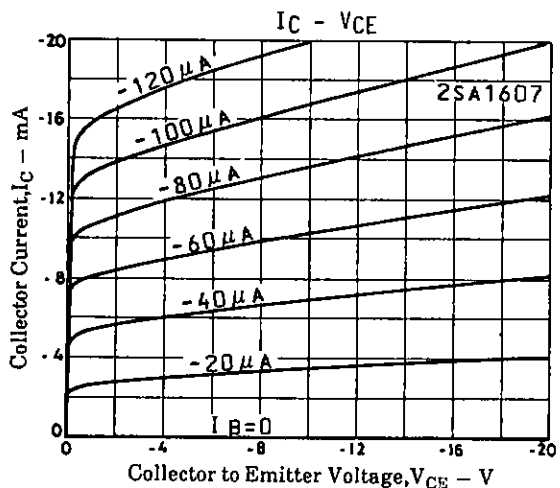
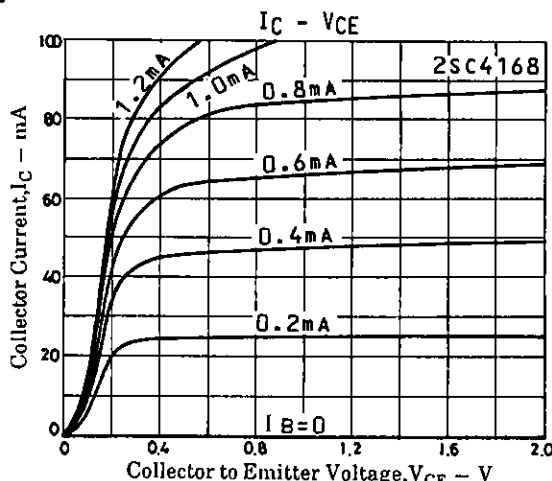
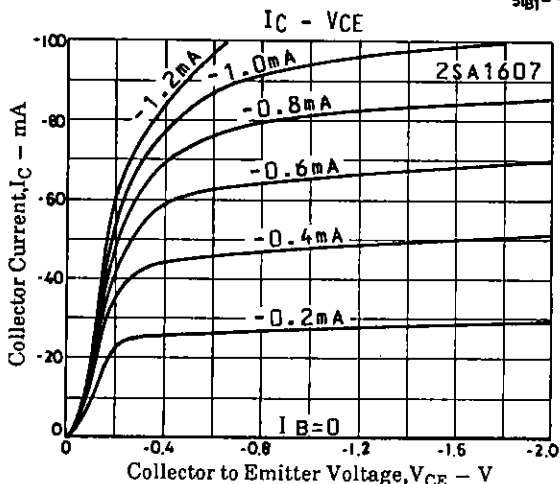
Switching Time Test Circuit



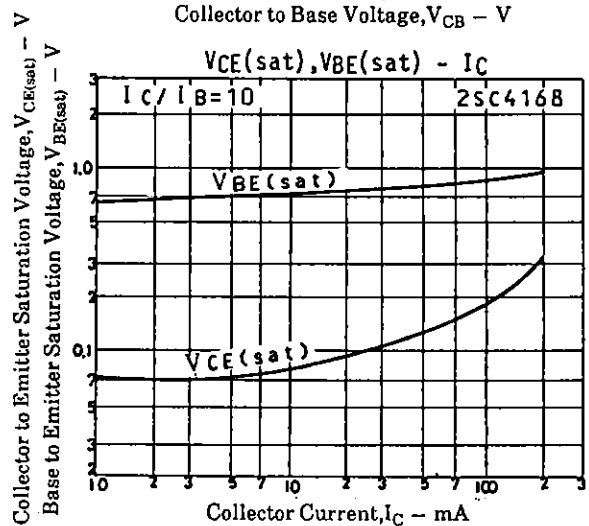
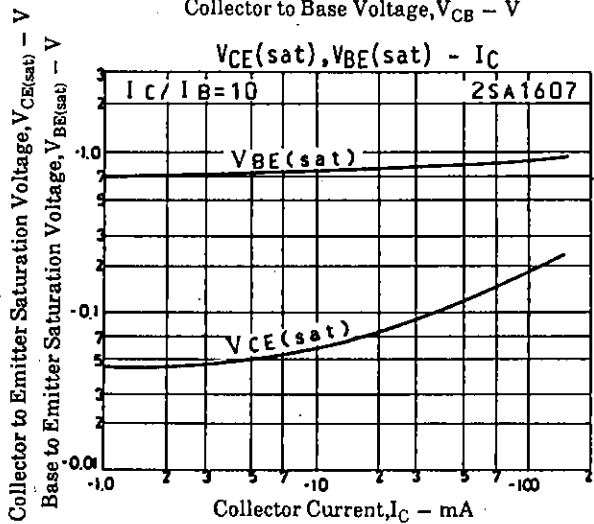
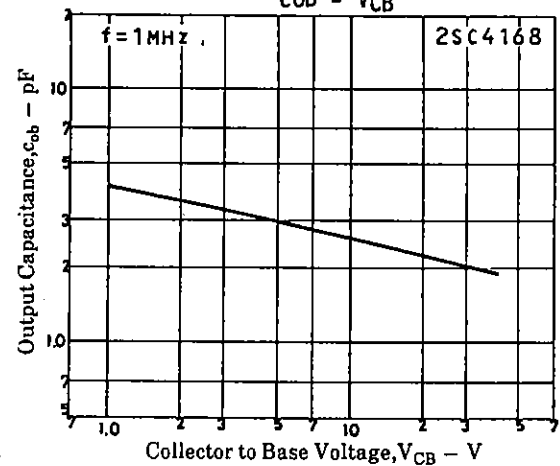
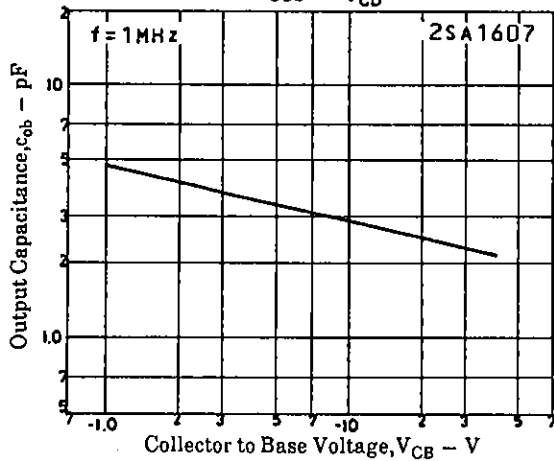
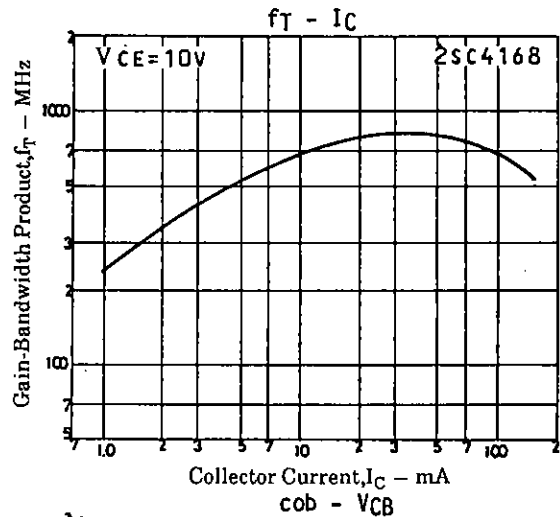
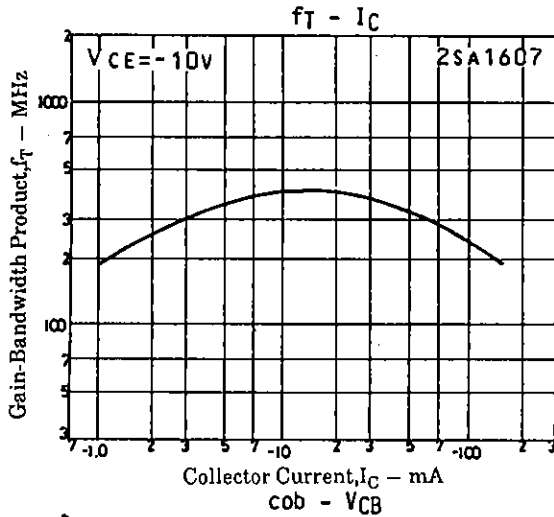
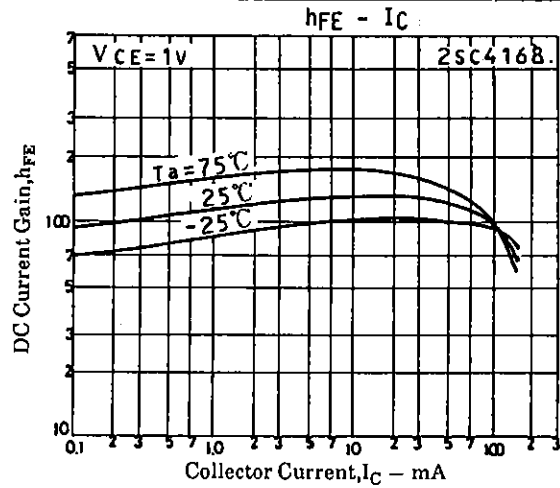
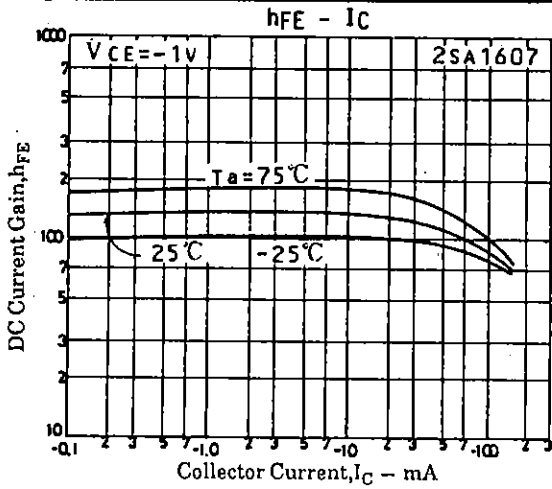
(For PNP, the polarity is reversed.)

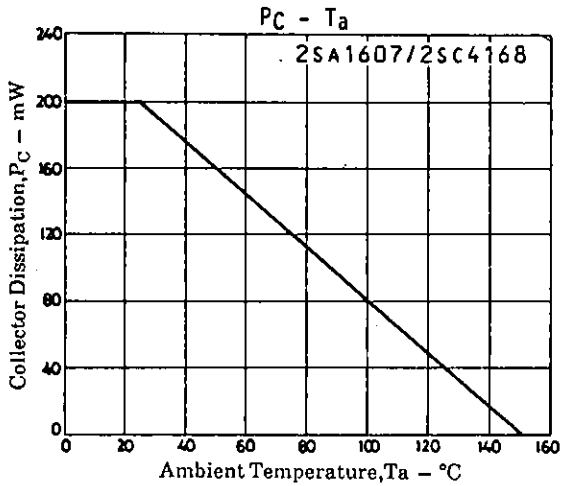
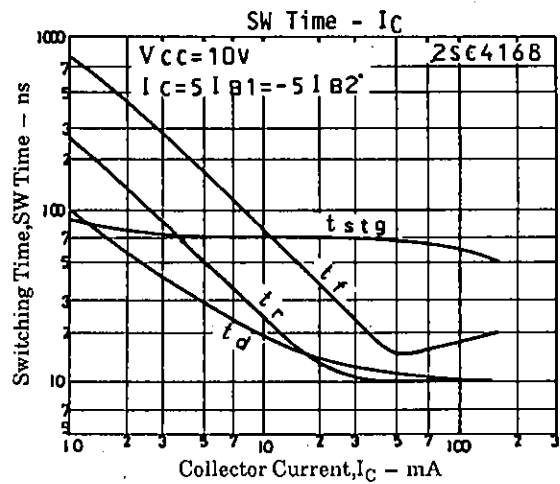
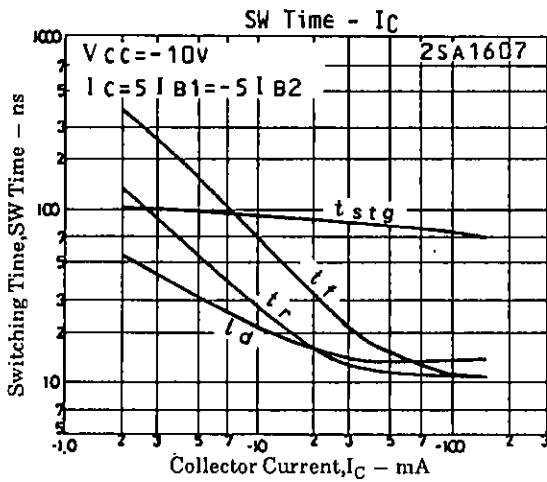
Unit (Resistance : Ω, Capacitance : F)

$$5I_{B1} = -5I_{B2} = I_C = 50\text{mA}$$



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