

SANYO	No.1788A	2SA1418/2SC3648
		PNP/NPN Epitaxial Planar Silicon Transistors High-Voltage Switching, Predriver Applications

Applications

- Color TV audio output, converter, inverter

Features

- Adoption of FBET, MBIT processes
- High breakdown voltage and large current capacity
- Fast switching speed
- Very small size marking it easy to provide high-density, small-sized hybrid ICs

() : 2SA1418

Absolute Maximum Ratings at Ta = 25°C

			unit
Collector to Base Voltage	V_{CBO}	(-)180	V
Collector to Emitter Voltage	V_{CEO}	(-)160	V
Emitter to Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)0.7	A
Collector Current(Pulse)	I_{CP}	(-)1.5	A
Collector Dissipation	P_C	500	mW
	P_C Mounted on ceramic board (250mm ² × 0.8mm)	1.3	W
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}	$V_{CB} = (-)120V, I_E = 0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-)0.1	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = (-)5V, I_C = (-)100mA$	100*		400*	
	$h_{FE}(2)$	$V_{CE} = (-)5V, I_C = (-)10mA$	90			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)50mA$		120		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)250mA, I_B = (-)25mA$		0.12	0.4	V
				(-0.2)	(-0.5)	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)250mA, I_B = (-)25mA$		(-)0.85	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10μA, I_E = 0$	(-)180			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = ∞$	(-)160			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10μA, I_C = 0$	(-)6			V

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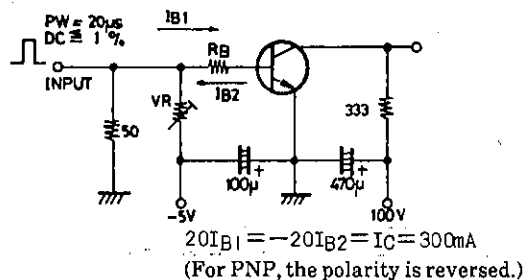
* : The 2SA1418/2SC3648 are classified by 100mA h_{FE} as follows :

100 R 200	140 S 280	200 T 400
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Marking 2SA1418 : AD
2SC3648 : CD

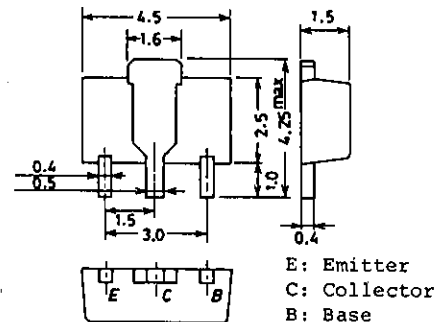
h_{FE} rank : R,S,T

Switching Time Test Circuit



Unit (Resistance : Ω, Capacitance : F)

Package Dimensions 2038
(unit : mm)



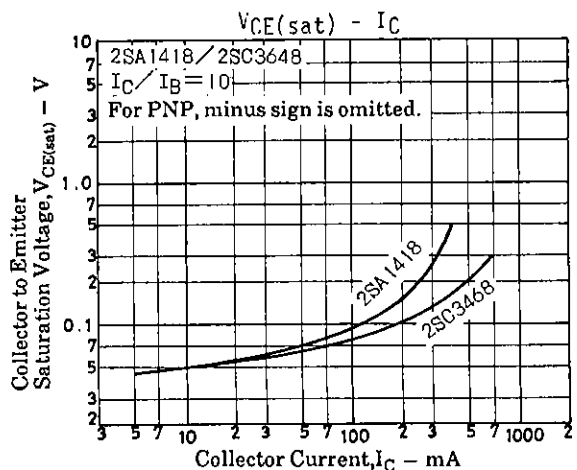
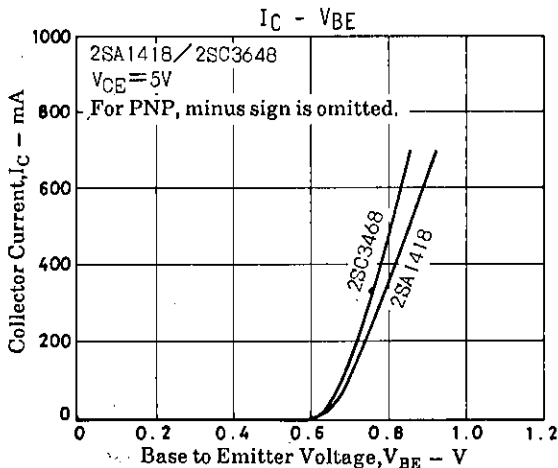
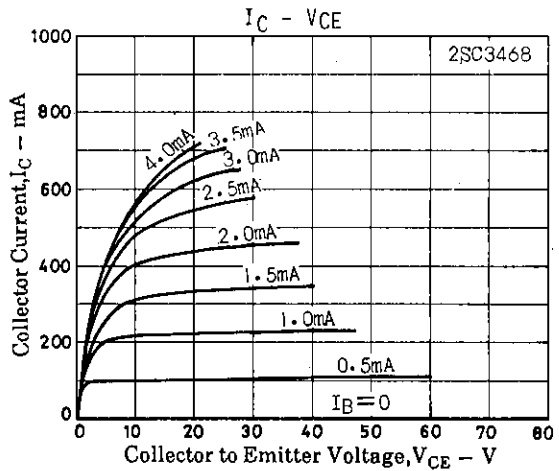
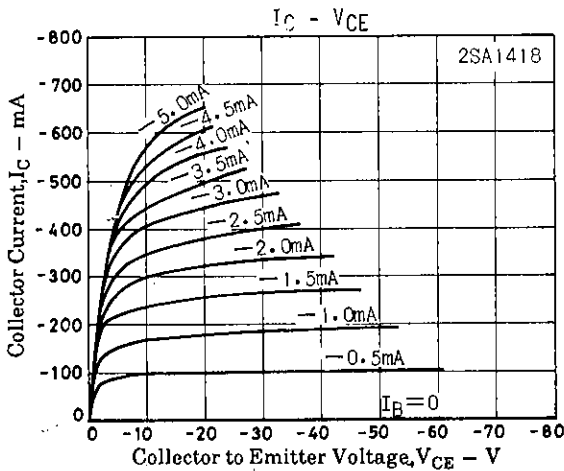
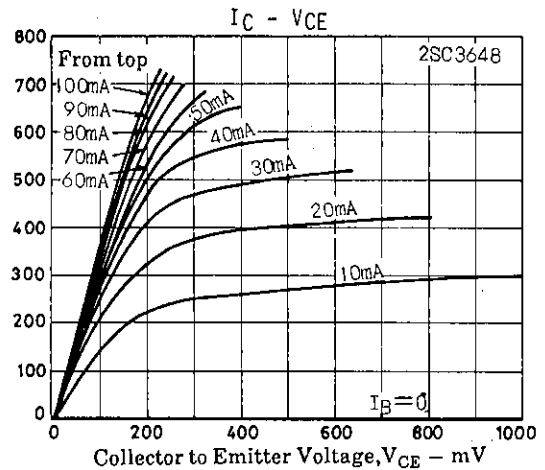
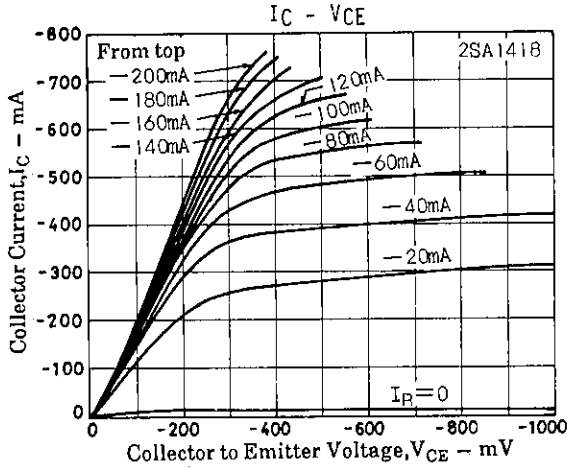
E: Emitter
C: Collector
B: Base

SANYO: PCP
(Bottom View)

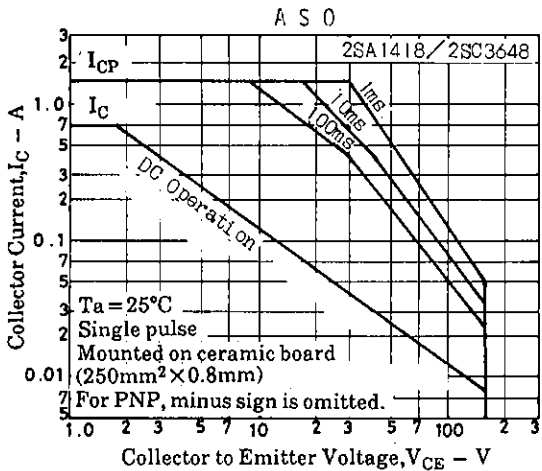
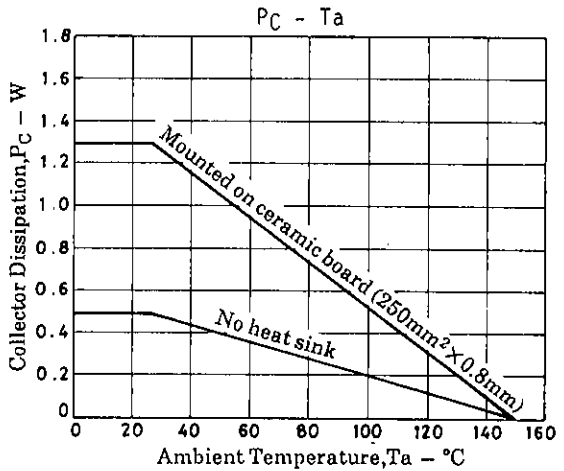
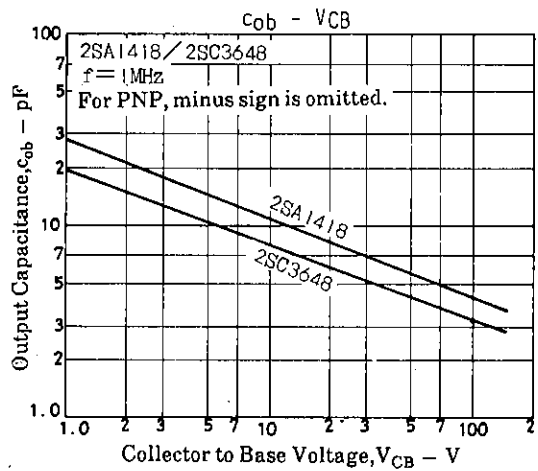
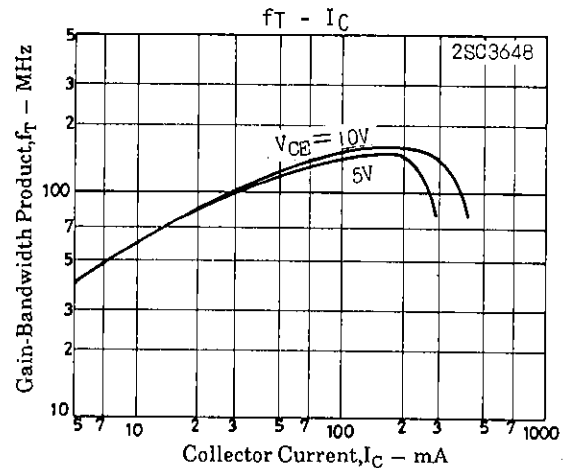
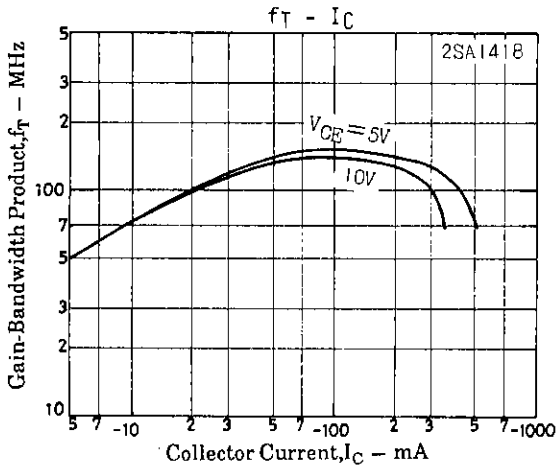
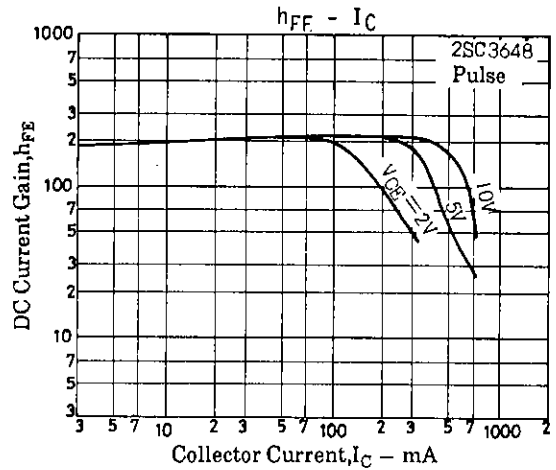
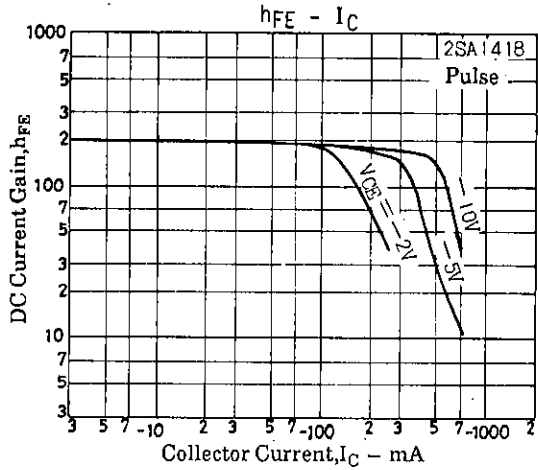
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			min	typ	max	unit
Output Capacitance	C_{ob}	$V_{CB} = (-)10V, f = 1MHz$		8		pF
Turn-on Time	t_{on}	See specified Test Circuit.		(11)		pF
				50		ns
Storage Time	t_{stg}			(60)		ns
				1000		ns
Fall Time	t_f			(900)		ns
				60		ns
				(60)		ns



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