

No. 1032A

2SA1248 / 2SC3116

PNP/NPN Epitaxial Planar Silicon Transistors

160V/700mA Switching Applications

Uses

- Color TV sound output, converters, inverters

Features

- High breakdown voltage
- Large current capacity
- Using MBIT process

() : 2SA1248

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

			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	1	W
		$T_c=25^\circ\text{C}$	10
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

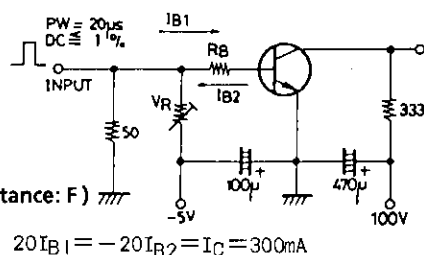
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)120\text{V}, I_E=0$			(-)1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)1.0	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE}=(-)5\text{V}, I_C=(-)100\text{mA}$	100*		400*	
	$h_{FE}(2)$	$V_{CE}=(-)5\text{V}, I_C=(-)10\text{mA}$	90			
Gain-bandwidth product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		120		MHz
Common Base Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		8		pF
				(11)		
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)250\text{mA}, I_B=(-)25\text{mA}$		0.12	0.4	V
				(-0.2)	(-0.5)	
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)250\text{mA}, I_B=(-)25\text{mA}$		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-)180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-160)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu\text{A}, I_C=0$	(-)6			V
Turn-on Time	t_{on}	See specified test circuit.		(60)50		ns
Storage Time	t_{stg}	See specified test circuit.		(900)1000		ns
Fall Time	t_f	See specified test circuit.		(60)60		ns

* The 2SA1248/2SC3116 are classified as follows according to h_{FE} at 100mA.

100	R	200	140	S	280	200	T	400
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Switching Time Test Circuit

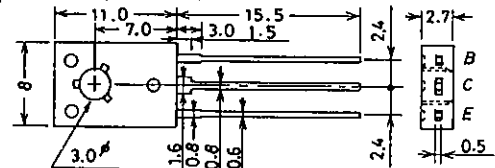
(For PNP, the polarity is reversed.)



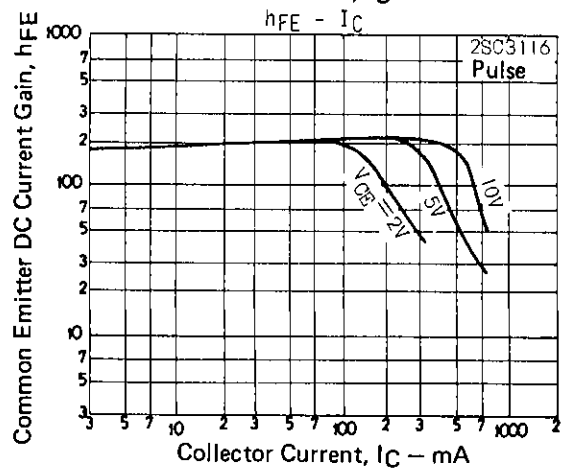
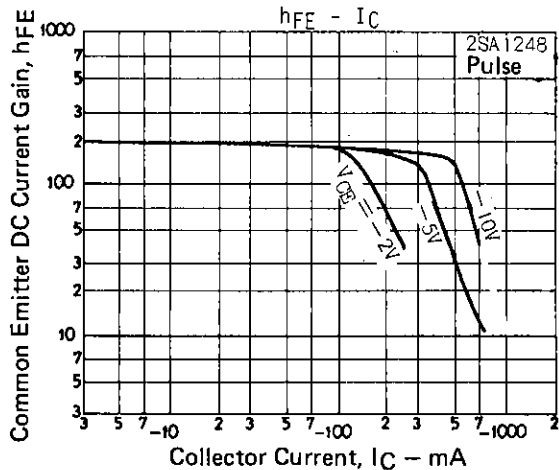
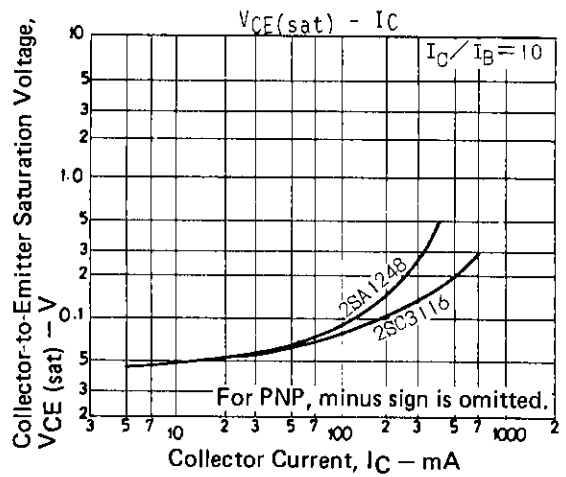
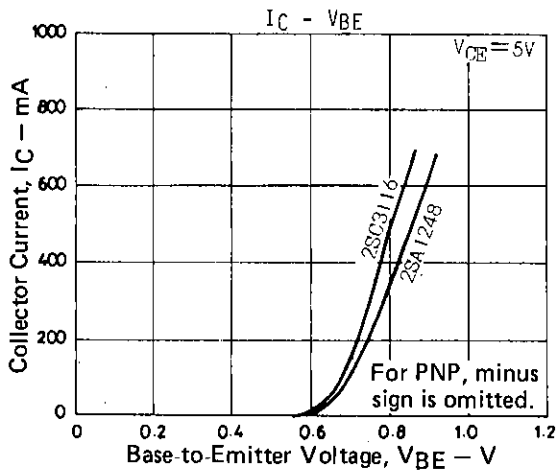
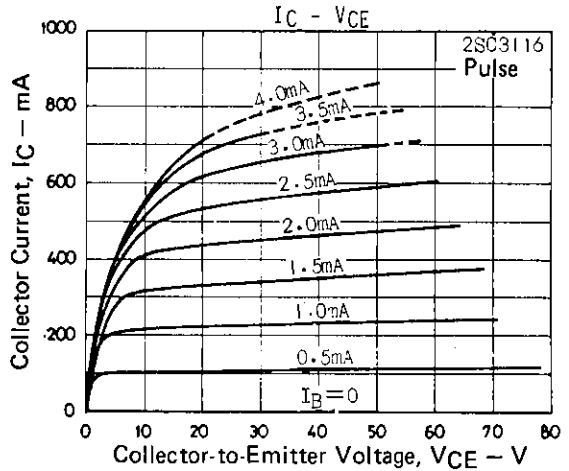
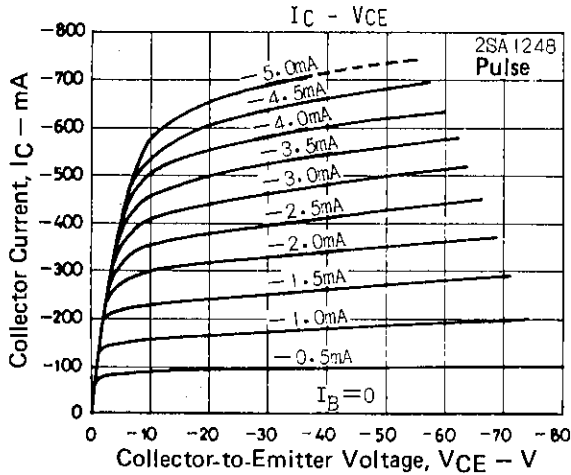
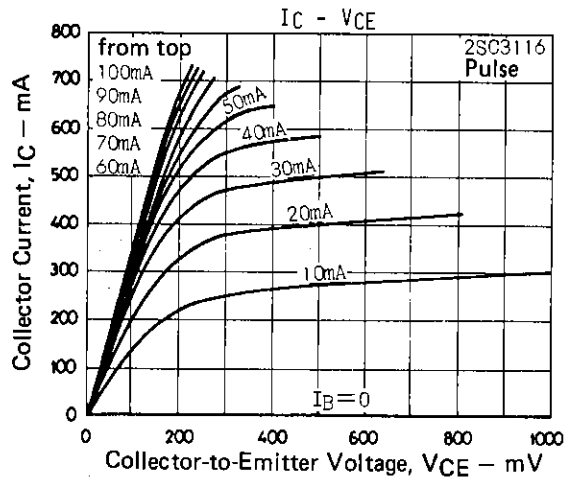
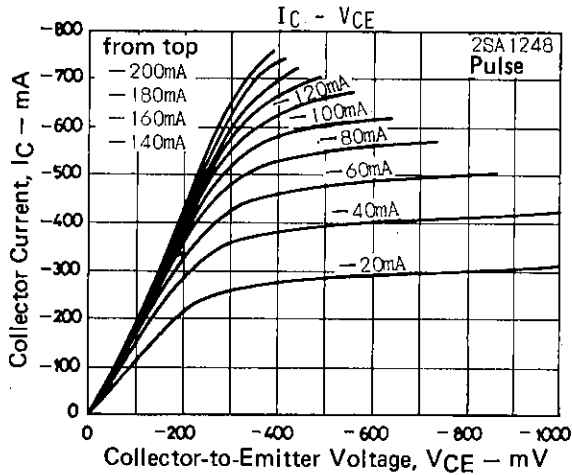
Unit (resistance: Ω , capacitance: F)

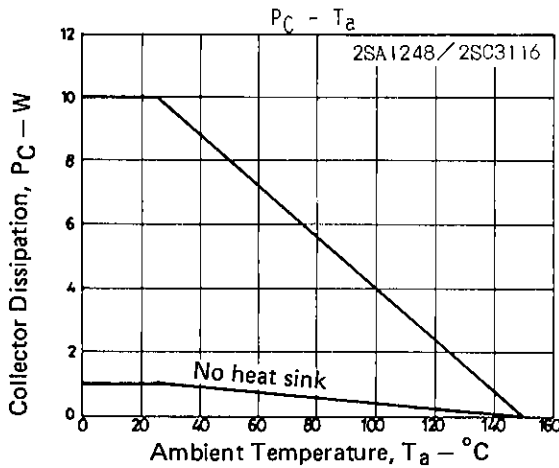
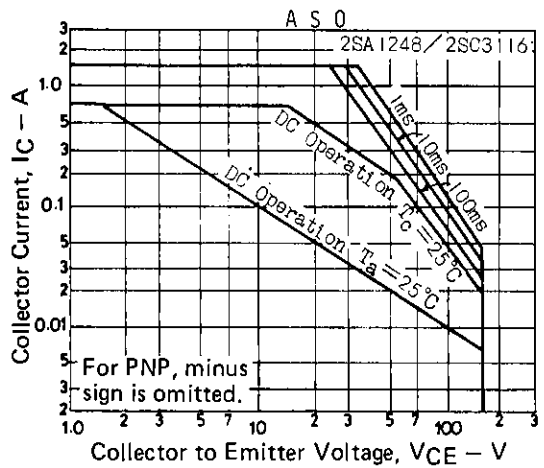
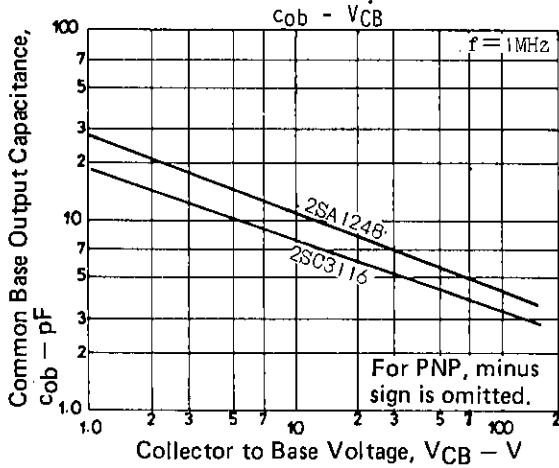
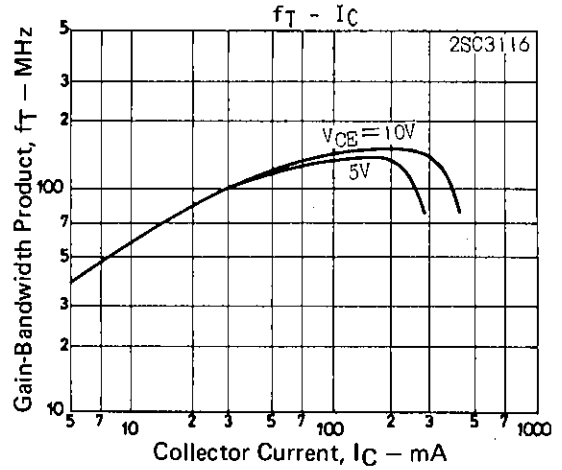
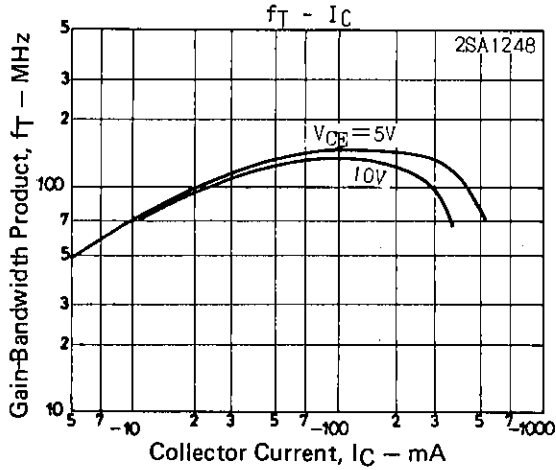
Package Dimensions 2009A

(unit: mm)



B: Base
C: Collector
E: Emitter





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