



2SA1248/2SC3116

160V/700mA Switching Applications

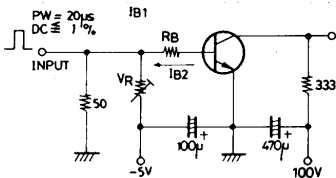
Uses

- Color TV sound output, converters, inverters.

Features

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

Switching Time Test Circuit



$I_C=20I_{B1}=-20I_{B2}=300\text{mA}$
 (For PNP, the polarity is reversed)
 Unit (resistance : Ω , capacitance : F)

() : 2SA1248

Specifications

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

Parameter	Symbol	Conditions	Ratings	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	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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_{FE1}	$V_{CE}=(-)5\text{V}, I_C=(-)100\text{mA}$	100*		400*	
	h_{FE2}	$V_{CE}=(-)5\text{V}, I_C=(-)10\text{mA}$	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 (11)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)250\text{mA}, I_B=(-)25\text{mA}$		0.12 (-0.2)	0.4 (-0.5)	V
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	$V_{(BR)CEO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-)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
				(60)60		ns

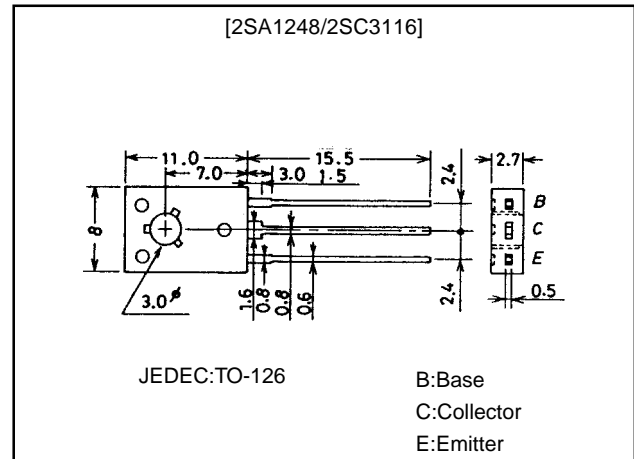
* : 2SA1248/2SC3116 are classified by follows according to h_{FE} at 100mA.

100	R	200	140	S	280	200	T	400
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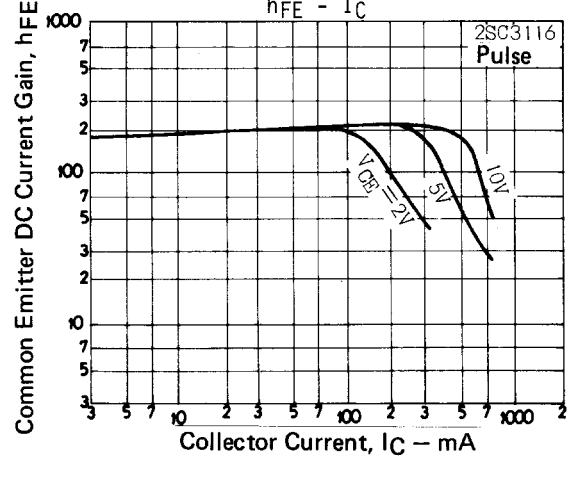
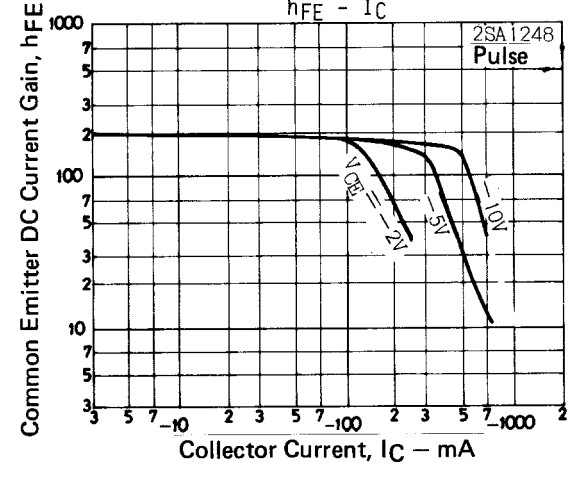
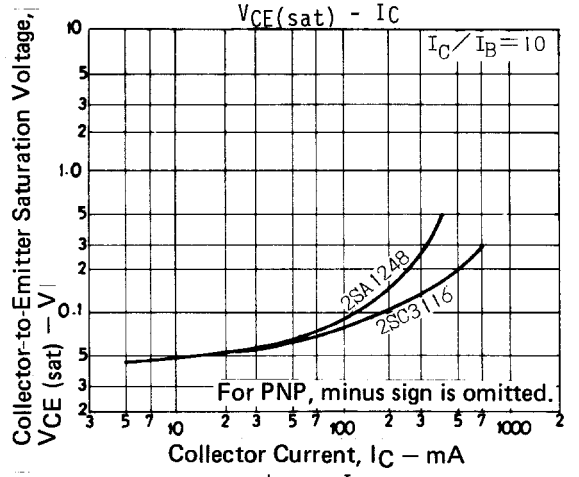
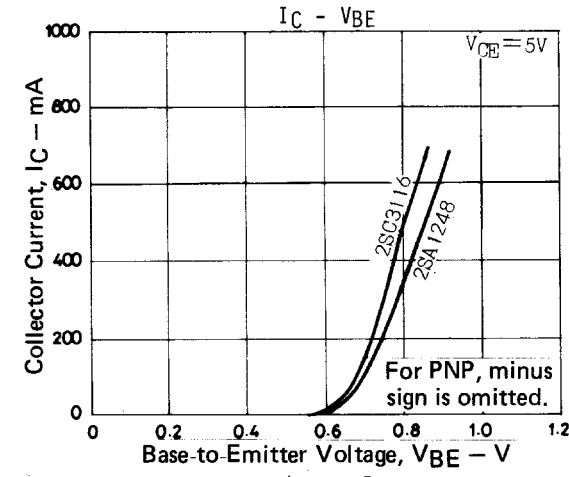
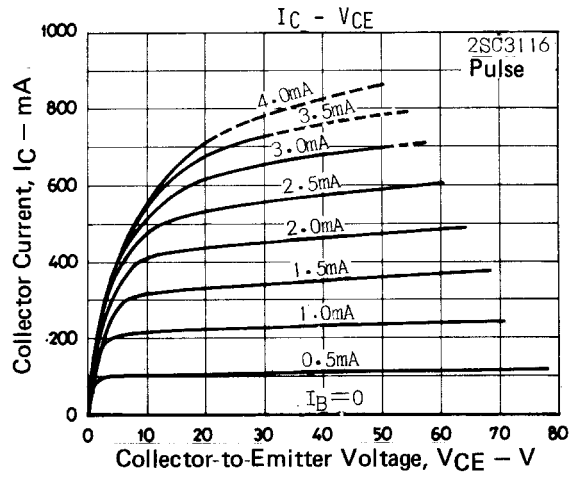
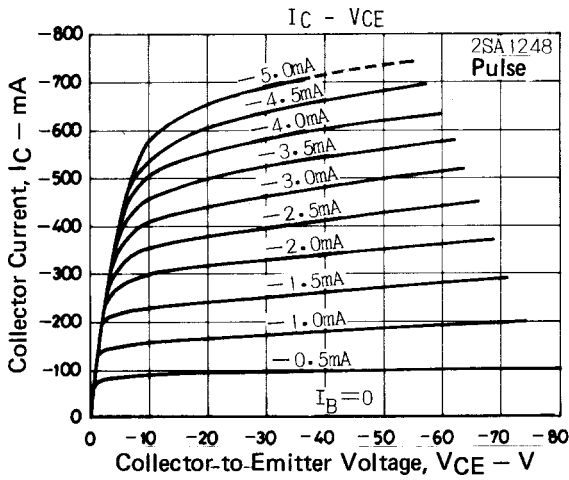
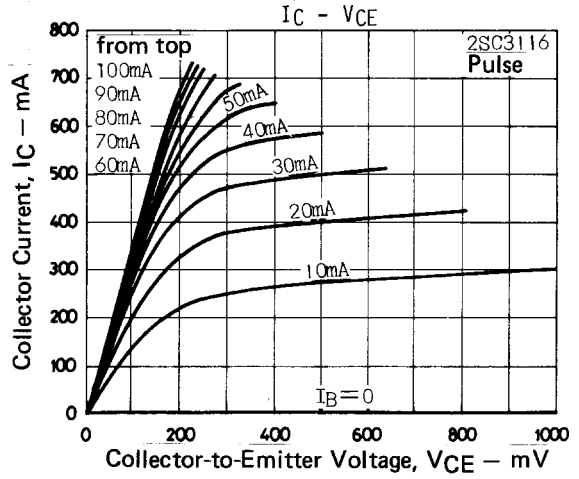
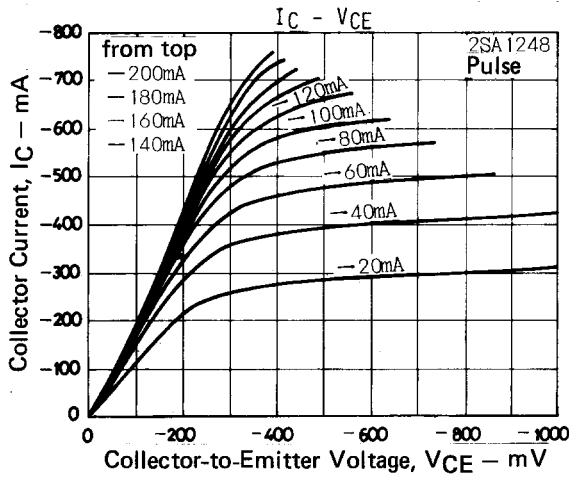
Package Dimensions

unit:mm

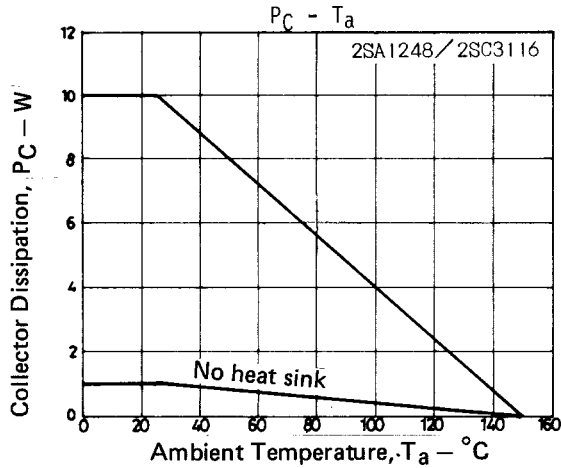
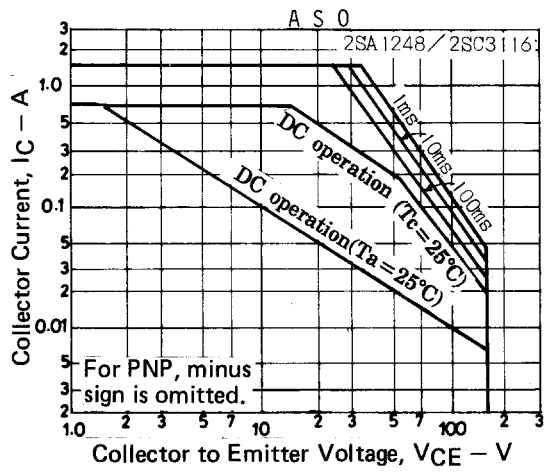
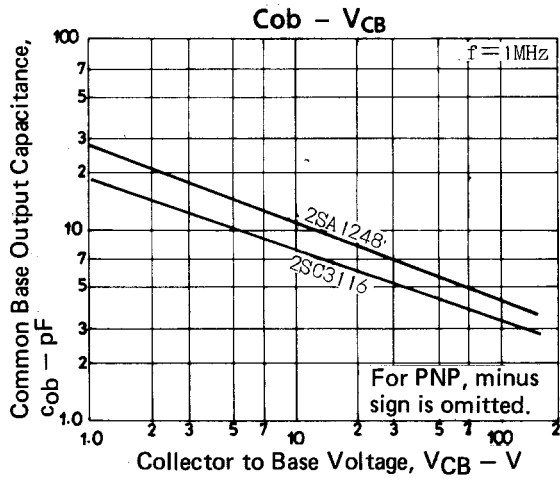
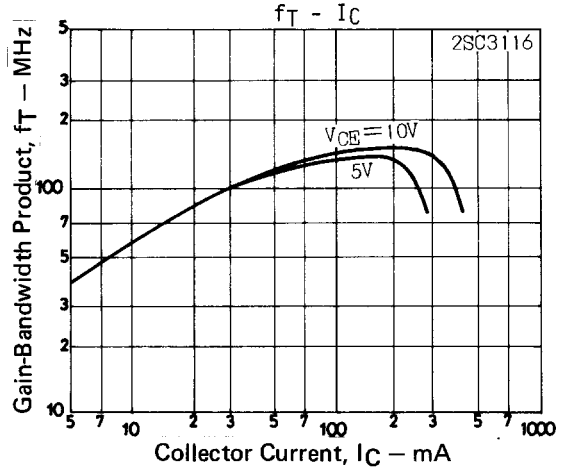
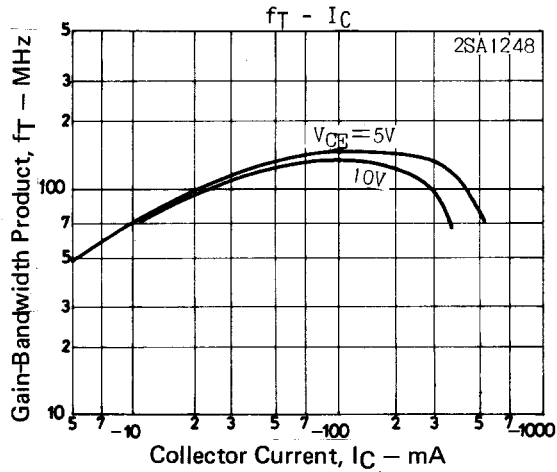
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