



# 2SA1249/2SC3117

## 160V/1.5A Switching Applications

### Uses

- Color TV sound output, converters, inverters.

### Features

- High breakdown voltage.
- Large current capacity.
- Adoption of MBIT process.

( ) : 2SA1249

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-)180	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)160	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)6	V
Collector Current	$I_C$		(-)1.5	A
Collector Current (Pulse)	$I_{CP}$		(-)2.5	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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)1.0	$\mu\text{A}$
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

\* : 2SA1249/2SC3117 are classified by 100mA  $h_{FE}$  as follows:

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Rank	R	S	T
$h_{FE}$	100 to 200	140 to 280	200 to 400

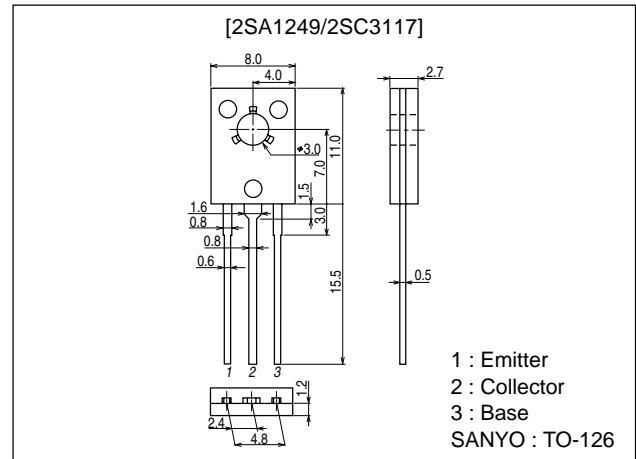
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### Package Dimensions

unit:mm

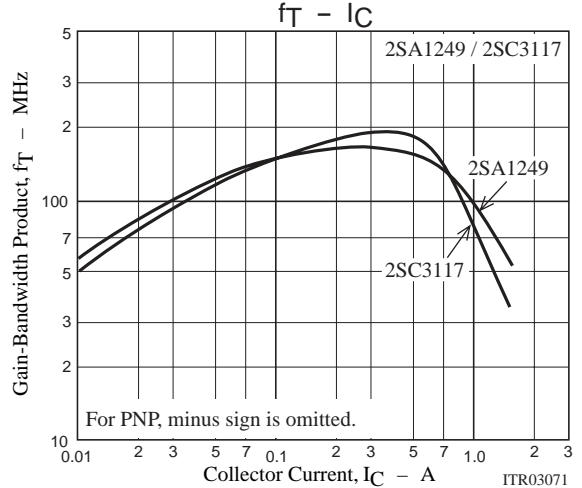
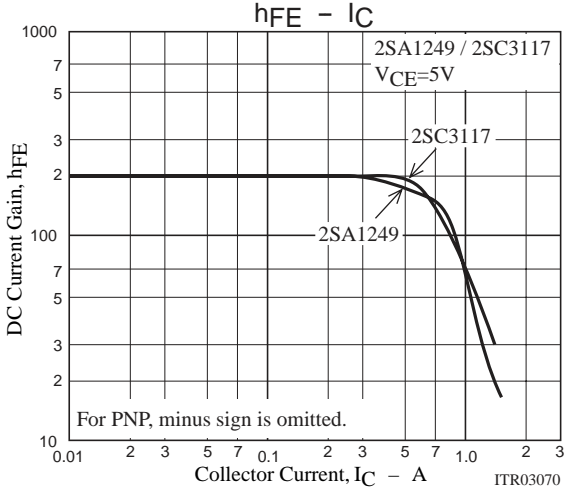
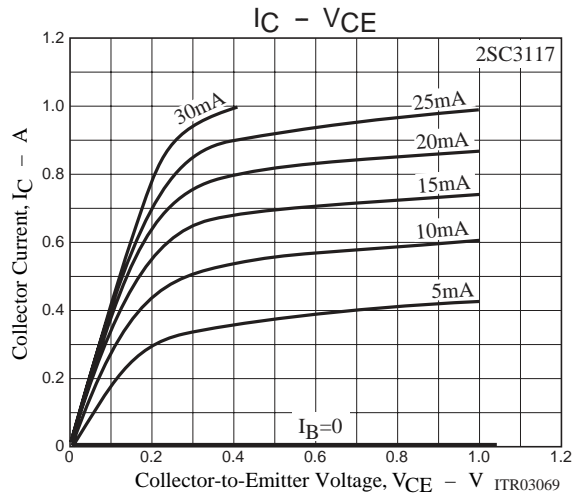
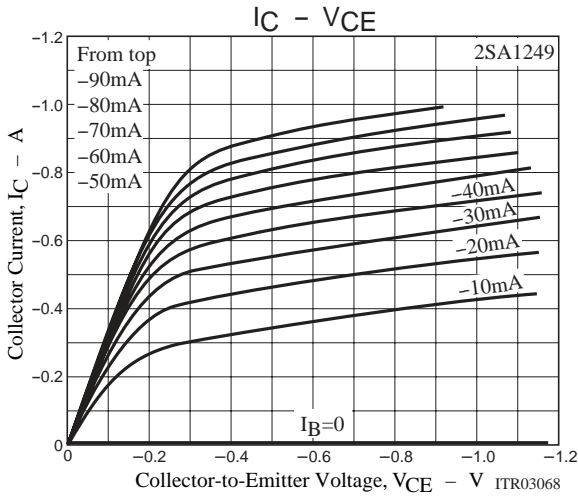
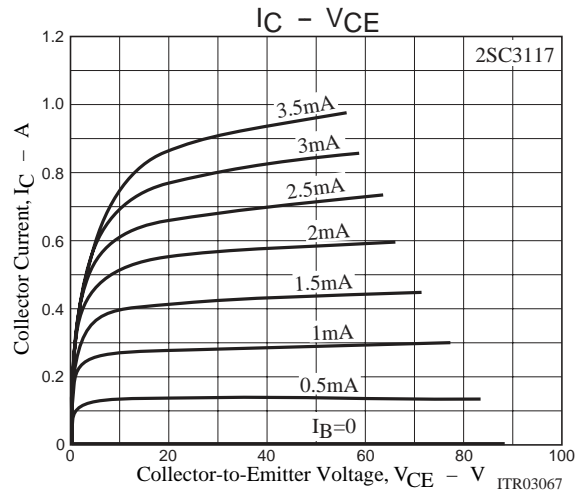
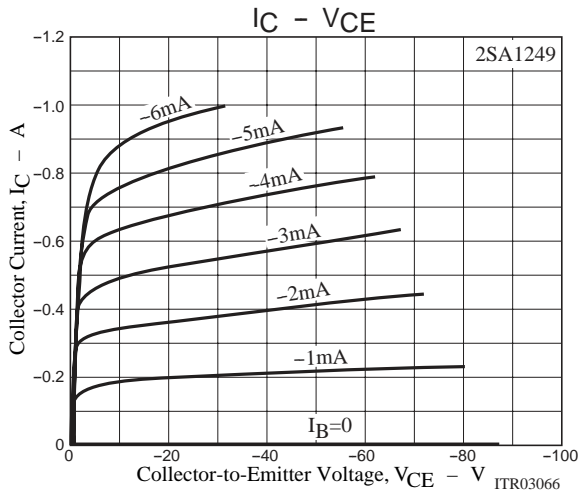
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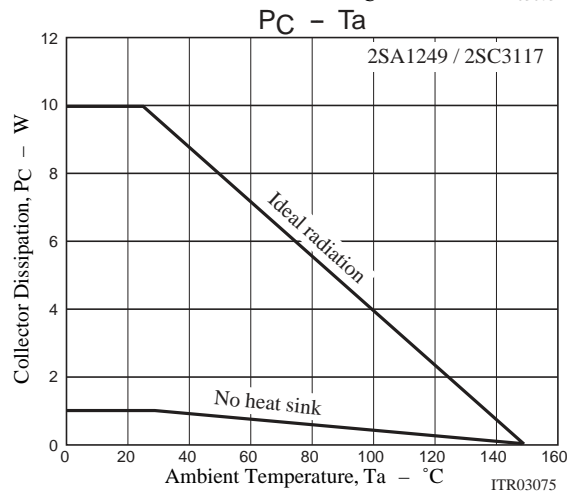
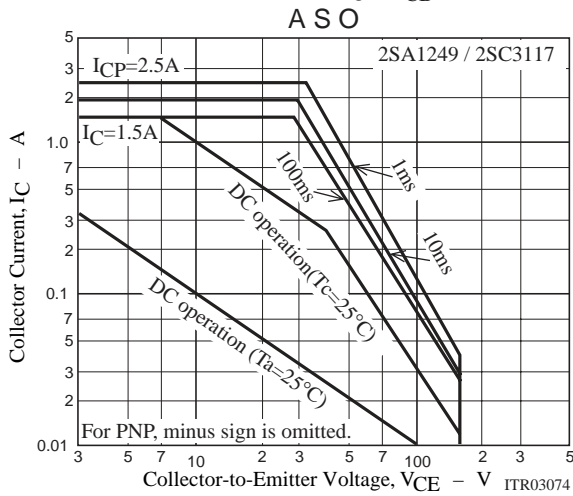
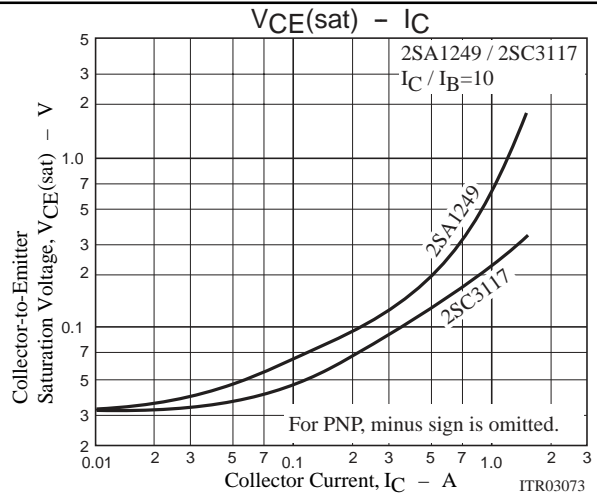
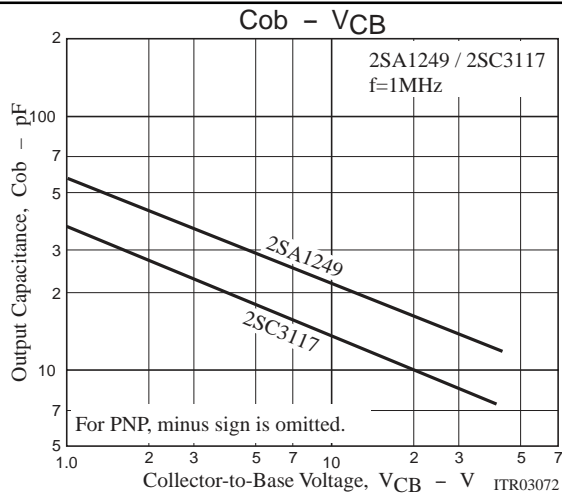
# 2SA1249/2SC3117

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10V, f=1MHz$		(22)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-0.2)	(-0.5)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		0.13	0.45	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-180)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-160)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-6)			V
Turn-ON Time	$t_{on}$	See Specified Test Circuit		0.04		$\mu s$
Storage Time	$t_{stg}$	See Specified Test Circuit		(0.7)	1.2	$\mu s$
Fall Time	$t_f$	See Specified Test Circuit		(0.04)	0.08	$\mu s$



## 2SA1249/2SC3117



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