



# 2SA1290/2SC3254

## 60V/7A High-Speed Switching Applications

### Applications

- Various inductance lamp drivers for electrical equipment.
- Inverters, converters (strobo, flash, fluorescent lamp lighting circuit).
- Power amp (high power car stereo, motor controller).
- High-speed switching (switching regulator, driver).

### Features

- Low saturation voltage.
- Excellent current dependence of  $h_{FE}$ .
- Short switching time.

( ) : 2SA1290

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-)80	V
Collector-to-Emitter Voltage	$V_{CE0}$		(-)60	V
Emitter-to-Base Voltage	$V_{EB0}$		(-)5	V
Collector Current	$I_C$		(-)7	A
Collector Current (Pulse)	$I_{CP}$		(-)10	A
Collector Dissipation	$P_C$	$T_c=25^\circ\text{C}$	35	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	$I_{CB0}$	$V_{CB}=(-)40\text{V}, I_E=0$			(-)0.1	mA
Emitter Cutoff Current	$I_{EB0}$	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	mA
DC Current Gain	$h_{FE}$	$V_{CE}=(-)2\text{V}, I_C=(-)1\text{A}$	70*		280*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		100		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3.5\text{A}, I_B=(-)0.175\text{A}$			(-)0.4	V

\* : The 2SA1290/2SC3254 are classified by 1A  $h_{FE}$  as follows

Rank	Q	R	S
$h_{FE}$	70 to 140	100 to 200	140 to 280

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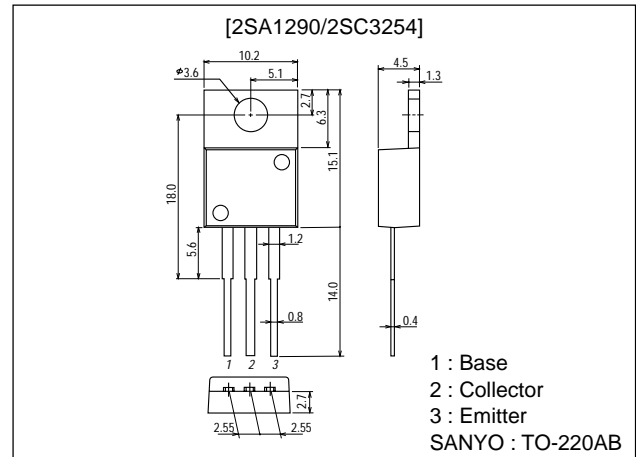
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### Package Dimensions

unit:mm

2010C

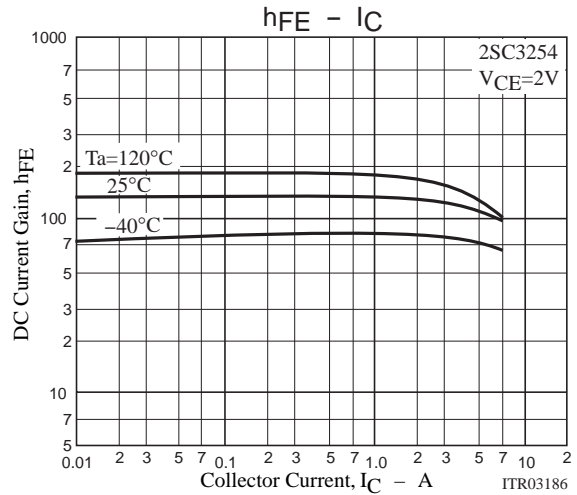
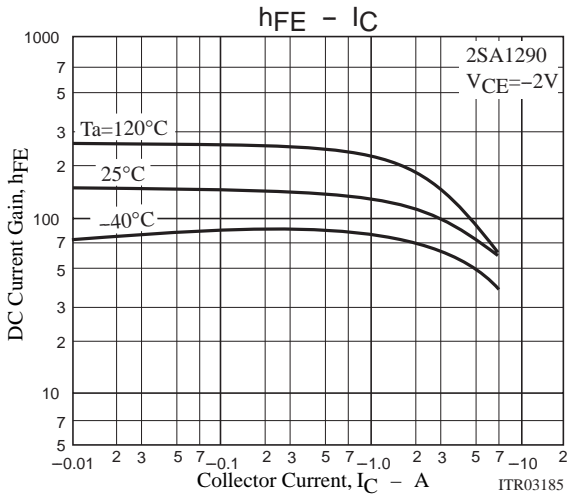
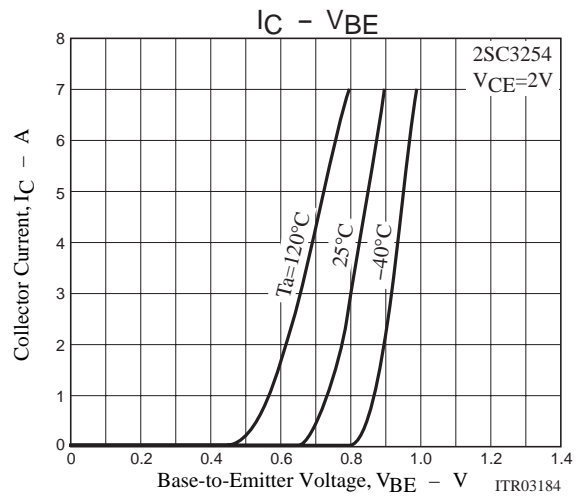
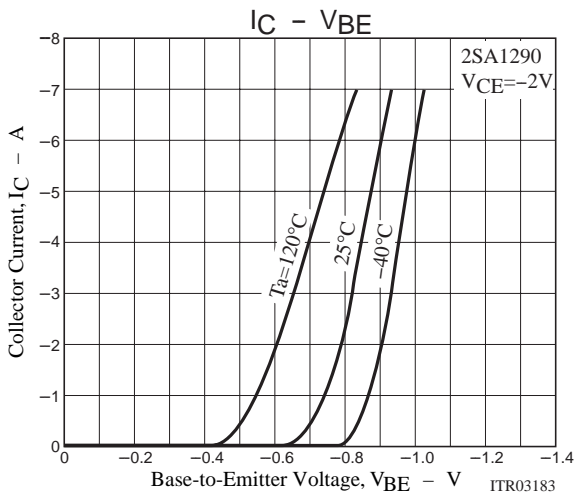
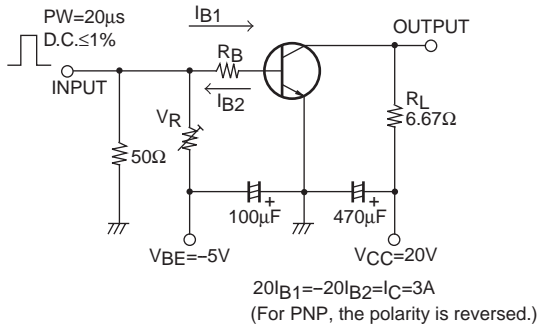


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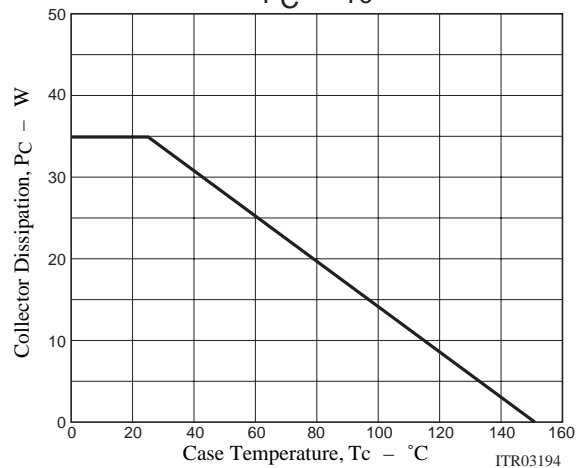
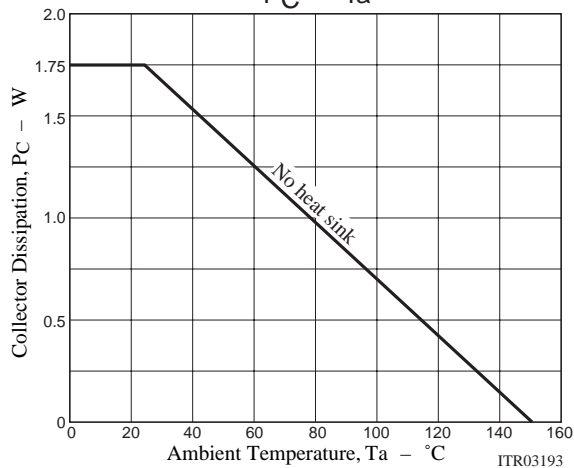
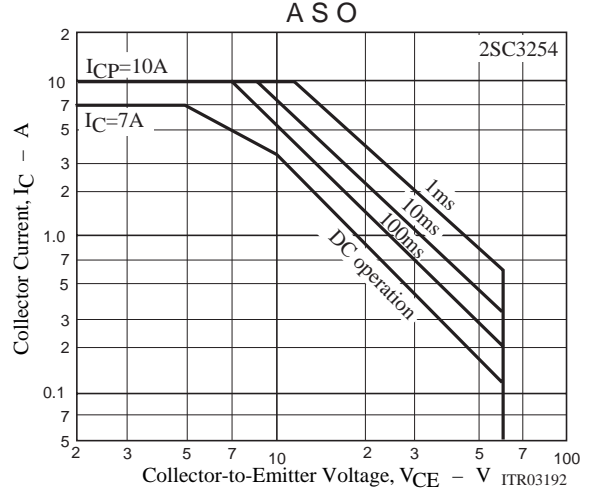
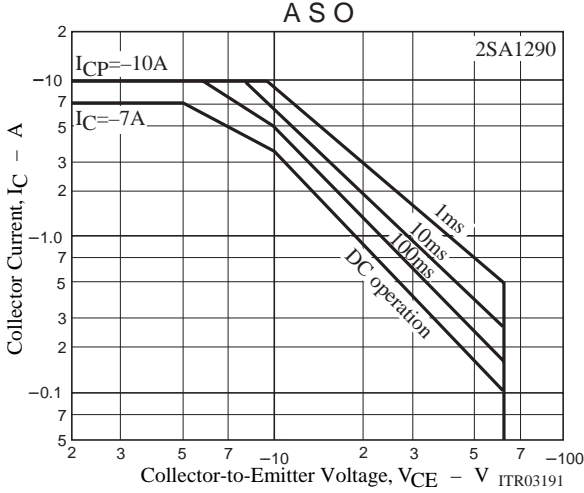
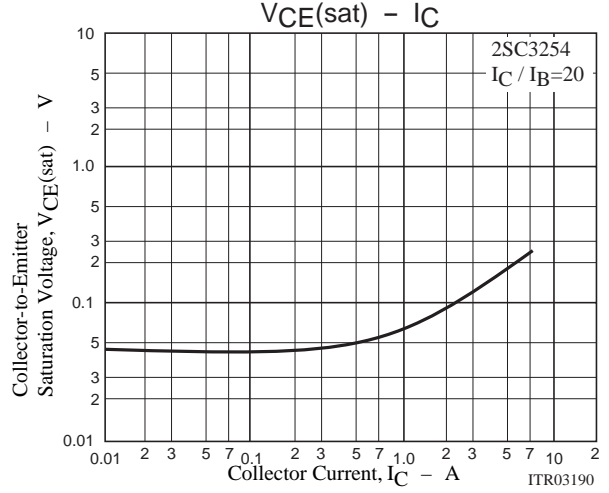
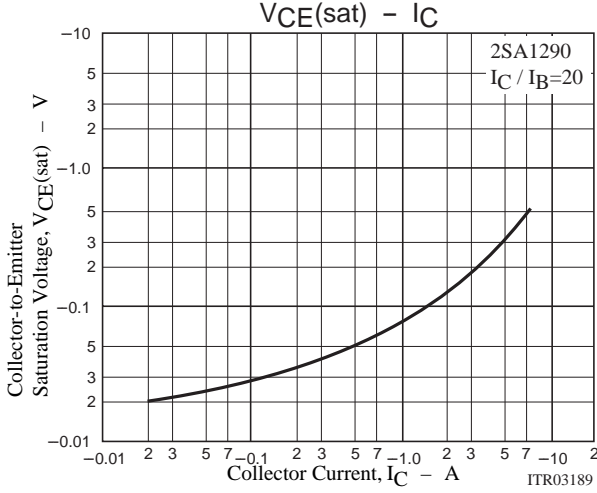
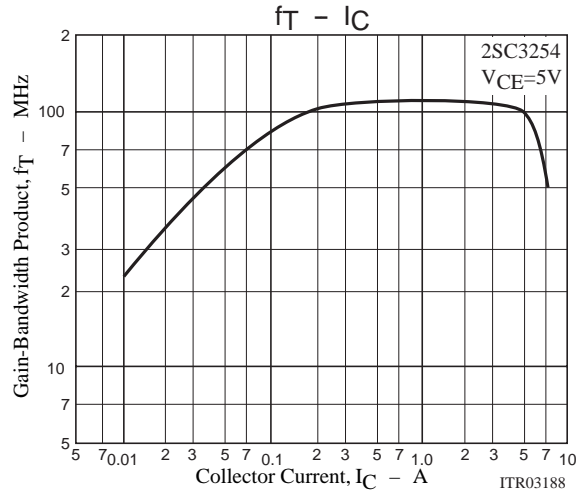
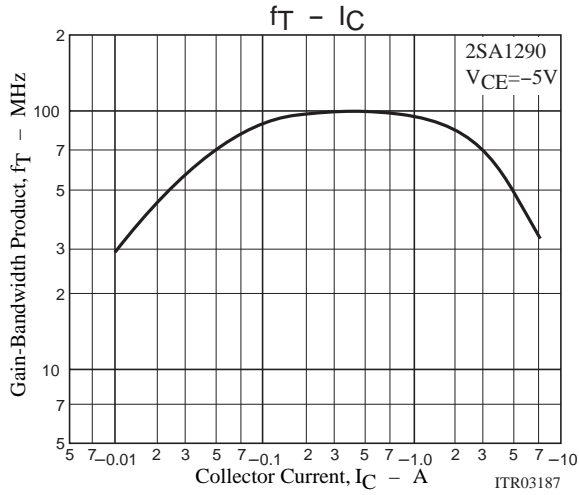
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0$	(-)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)1mA, I_C=0$	(-)5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit		0.1		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit		0.5		$\mu s$
Fall Time	$t_f$	See specified Test Circuit		0.1		$\mu s$

## Switching Time Test Circuit



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