

**2SA1291/2SC3255****60V/10A 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.

() : 2SA1291

**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	$I_C$		(-)10	A
Collector Current (Pulse)	$I_{CP}$		(-)12	A
Collector Dissipation	$P_C$	$T_c=25^\circ\text{C}$	40	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	$I_{CBO}$	$V_{CB} = (-)40\text{V}, I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)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	$V_{CE(sat)}$	$I_C = (-)5\text{A}, I_B = (-)0.25\text{A}$			(-)0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1\text{mA}, I_E = 0$	(-)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	(-)60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)1\text{mA}, I_C = 0$	(-)5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit		0.1		$\mu\text{s}$
Storage Time	$t_{stg}$	See specified Test Circuit		0.5		$\mu\text{s}$
Fall Time	$t_f$	See specified Test Circuit		0.1		$\mu\text{s}$

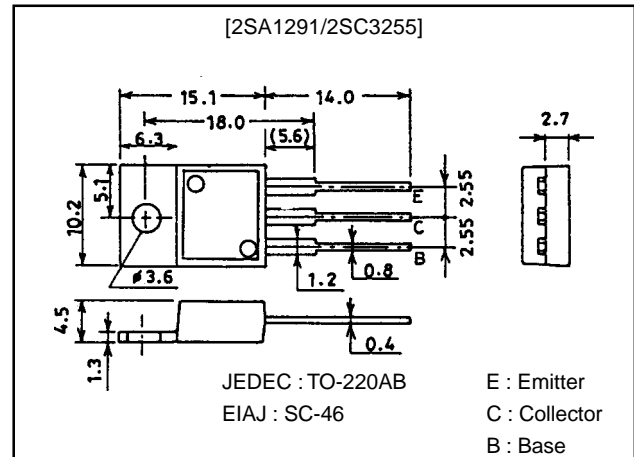
\* : The 2SA1291/2SC3255 are classified by 1A  $h_{FE}$  as follows :

70	Q	140	100	R	200	140	S	280
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**Package Dimensions**

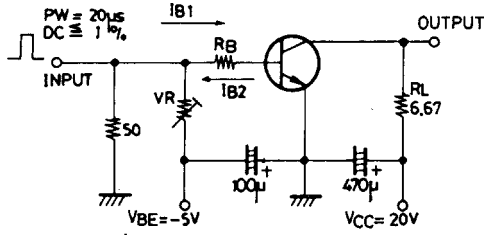
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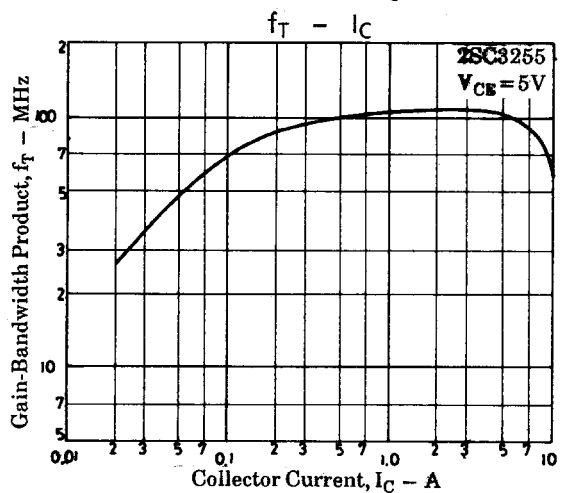
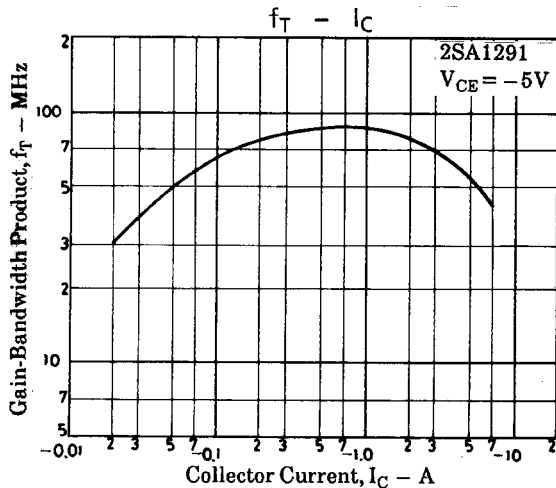
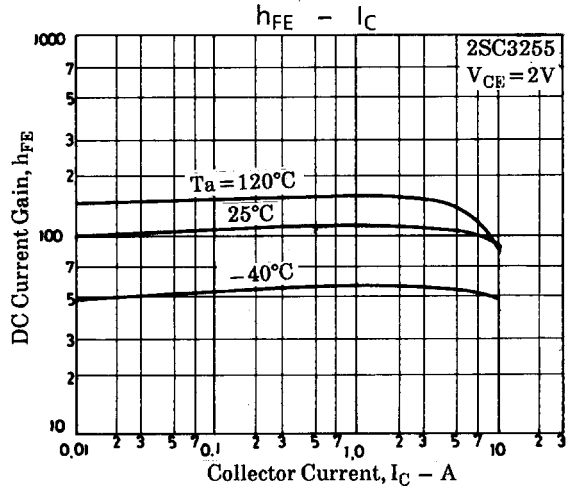
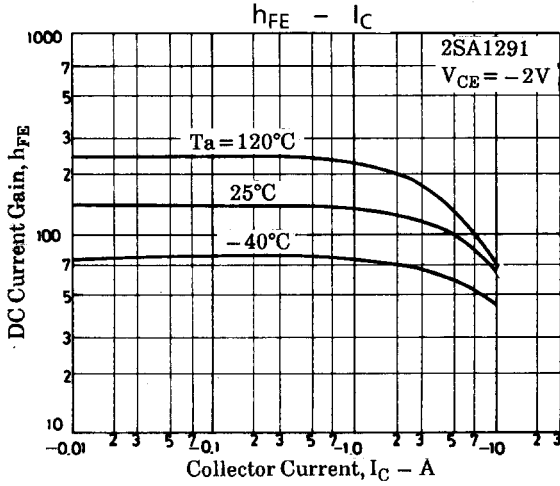
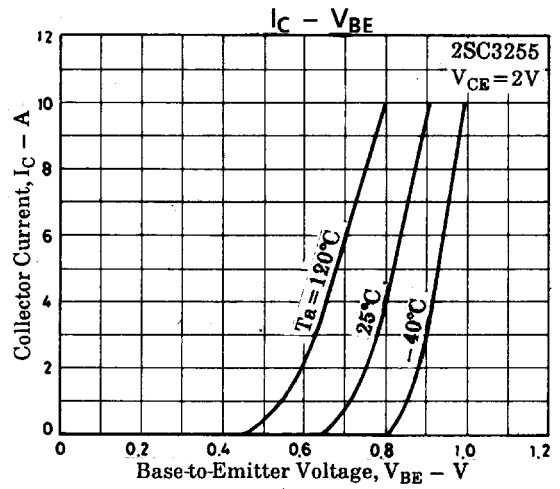
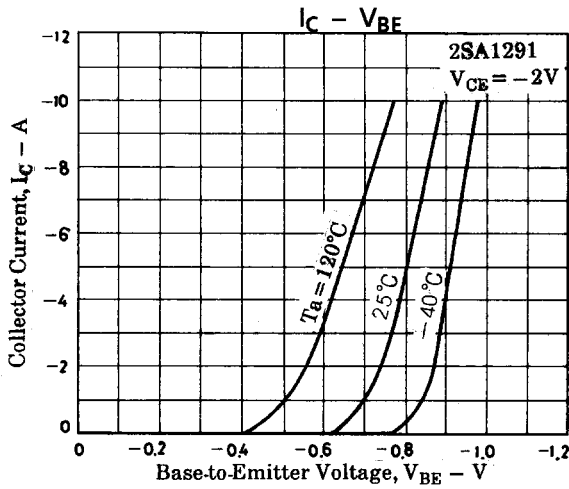


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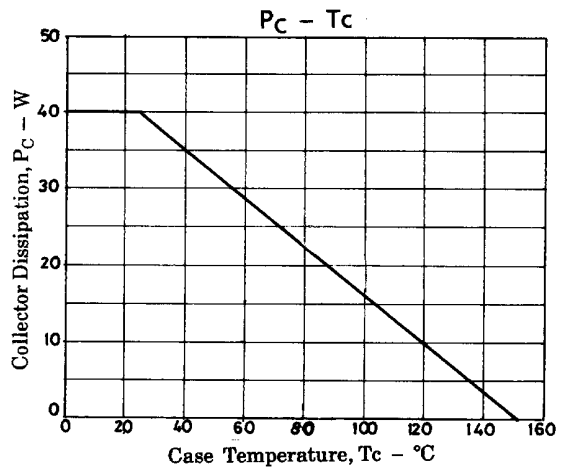
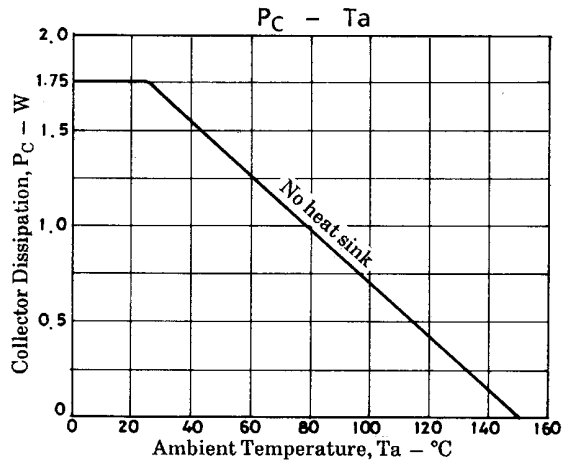
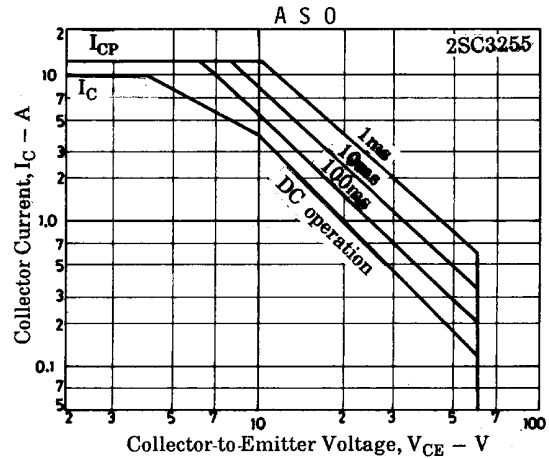
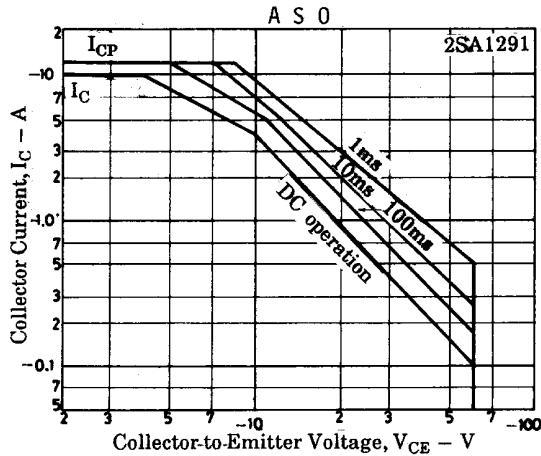
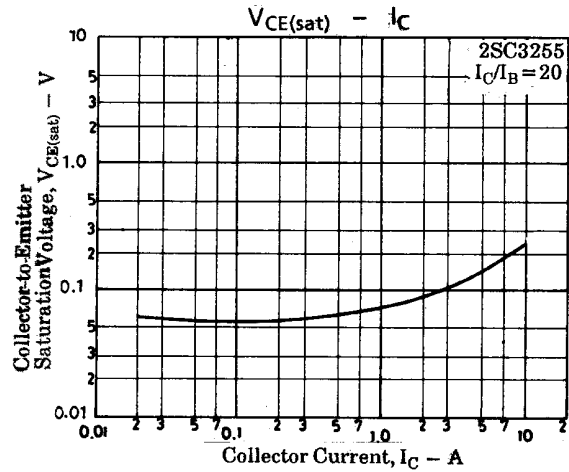
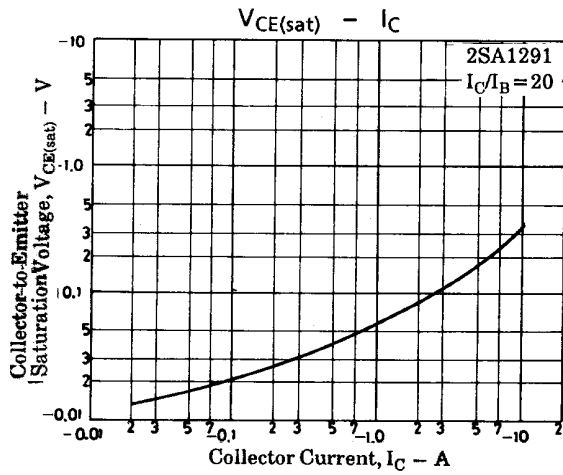
## Switching Time Test Circuit



$20I_{B1} = -20I_{B2} = I_C = 5A$   
 (For PNP, the polarity is reversed)  
 Unit (resistance :  $\Omega$ , capacitance : F)



## 2SA1291/2SC3255



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