



## 2SA1740/2SC4548

### High-Voltage Driver Applications

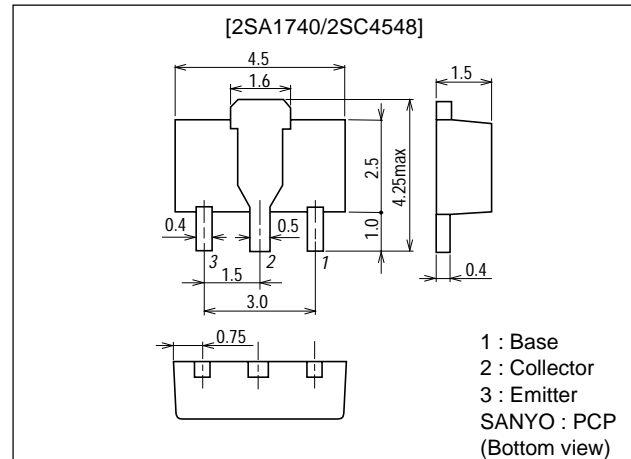
#### Features

- High breakdown voltage.
- Adoption of MBIT process.
- Excellent  $h_{FE}$  linearity.

#### Package Dimensions

unit:mm

2038A



() : 2SA1740

#### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-400)	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-400)	V
Emitter-to-Base Voltage	$V_{EBO}$		(-5)	V
Collector Current	$I_C$		(-200)	mA
Collector Current (Pulse)	$I_{CP}$		(-400)	mA
Collector Dissipation	$P_C$	Mounted on ceramic board (250mm <sup>2</sup> ×0.8mm)	1.3	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	$I_{CBO}$	$V_{CB} = (-)300\text{V}, I_E = 0$			(-)0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = (-)10\text{V}, I_C = (-)50\text{mA}$	60*		200*	

\* The 2SA1740/2SC4548 are classified by 50mA  $h_{FE}$  as follows :

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Rank	D	E
$h_{FE}$	60 to 120	100 to 200

Marking 2SA1740 : AK

2SC4548 : CN

 $h_{FE}$  rank : D, E

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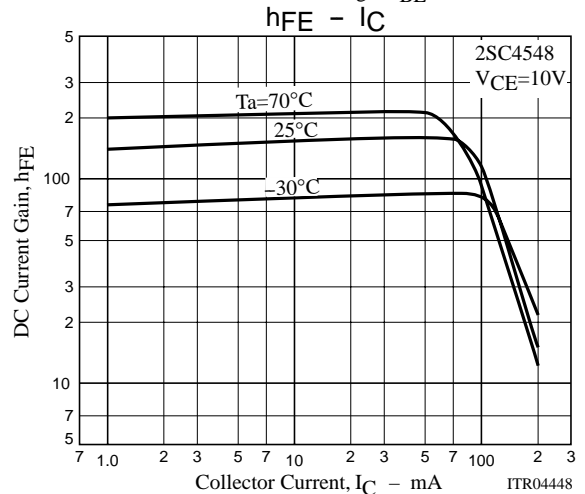
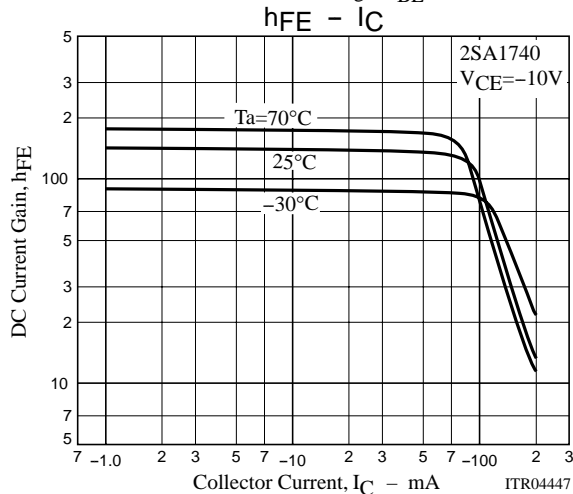
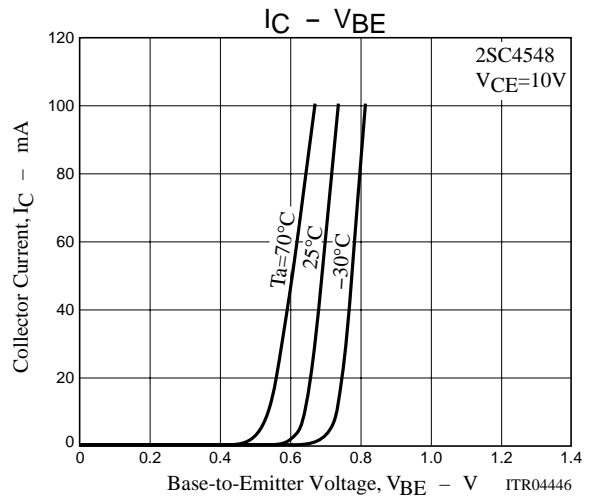
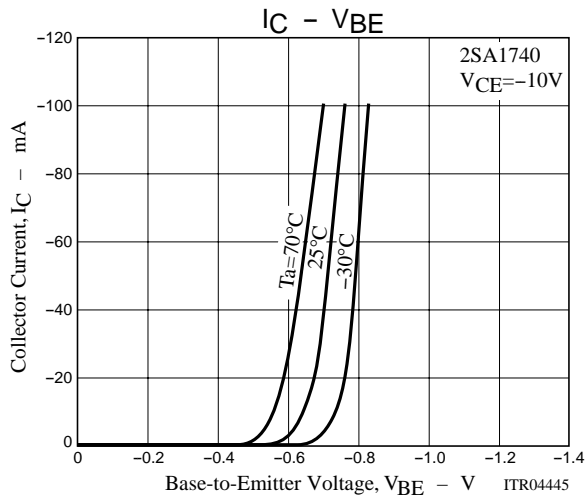
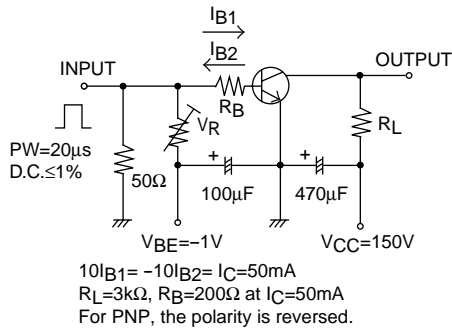
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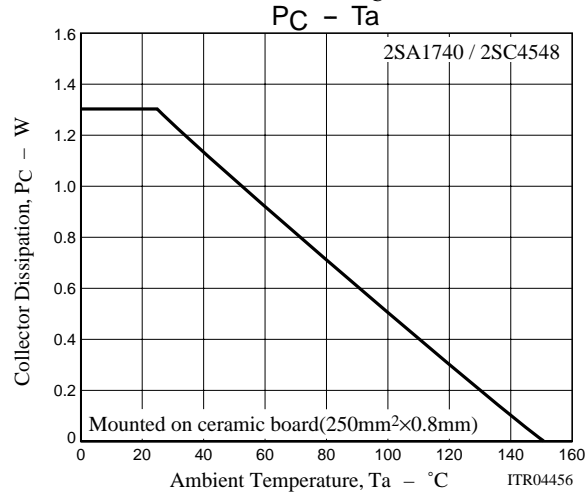
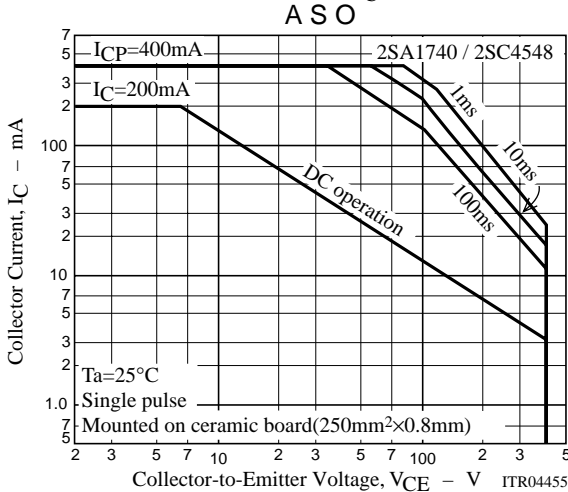
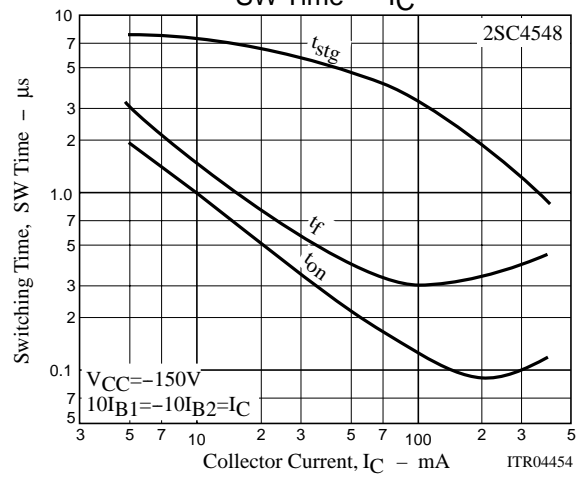
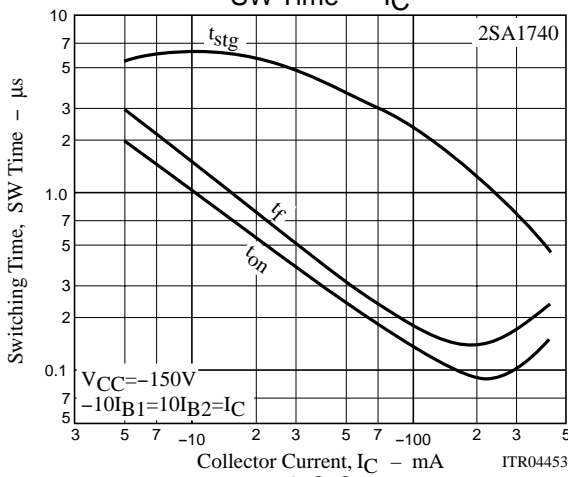
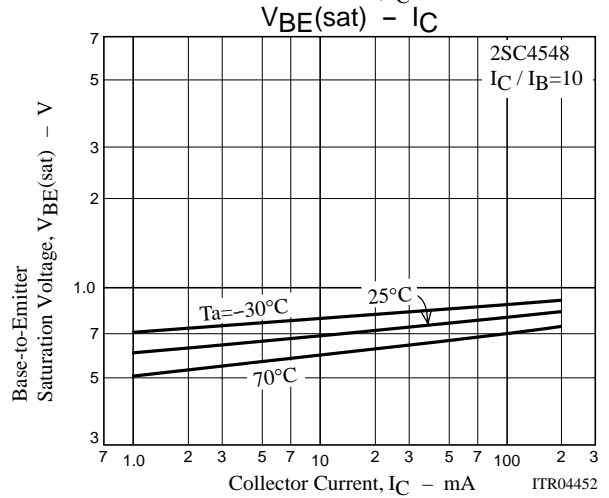
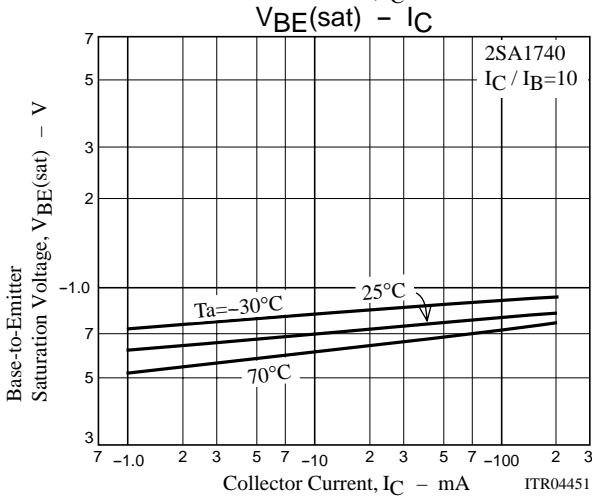
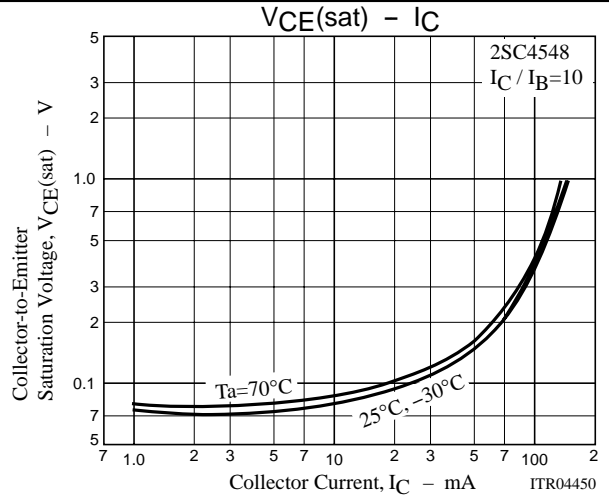
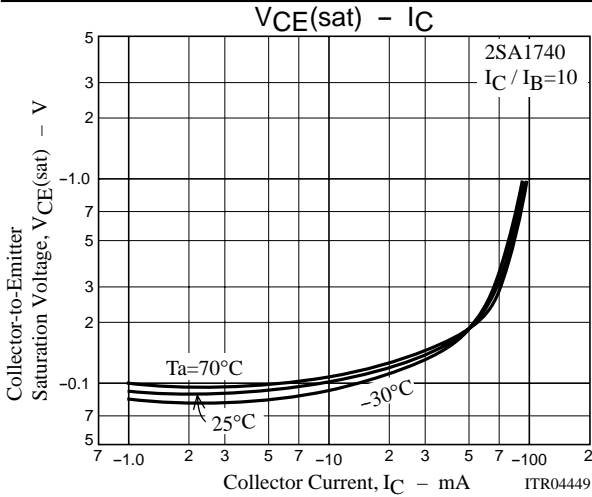
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)30V, I_C=(-)10mA$		70		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)30V, f=1MHz$		(5)4		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=(-)30V, f=1MHz$		(4)3		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)50mA, I_B=(-)5mA$		(-)0.8		V
				0.6		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)50mA, I_B=(-)5mA$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)400			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit		0.25		$\mu s$
Turn-OFF Time	$t_{off}$	See specified Test Circuit		5.0		$\mu s$

## Switching Time Test Circuit



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