



SANYO Semiconductors

## DATA SHEET

## 2SA1773 / 2SC4616

2SA1773 : PNP Epitaxial Planar Silicon Transistor  
 2SC4616 : NPN Triple Diffused Planar Silicon Transistor  
**High-Voltage Driver Applications**

## Features

- Large current capacity ( $I_C=2A$ ).
- High breakdown voltage ( $V_{CEO} \geq 400V$ ).

## Specifications ( ) : 2SA1773

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-)400	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)400	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)5	V
Collector Current	$I_C$		(-)2	A
Collector Current (Pulse)	$I_{CP}$		(-)4	A
Collector Dissipation	$P_C$	$T_C=25^\circ C$	1	W
			15	W
Junction Temperature	$T_j$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

Electrical Characteristics at  $T_a=25^\circ C$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)300V, I_E=0A$			(-)1.0	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4V, I_C=0A$			(-)1.0	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=(-)10V, I_C=(-)100mA$	40*		200*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)10V, I_C=(-)100mA$		(40)60		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)30V, f=1MHz$		(25)15		pF

Continued on next page.

\* : The 2SA1773 / 2SC4616 are classified by 100mA  $h_{FE}$  as follows:

Rank	C	D	E
$h_{FE}$	40 to 80	60 to 120	100 to 200

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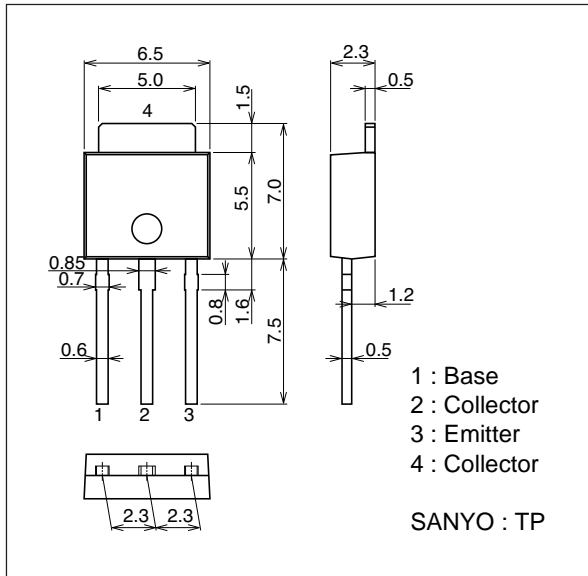
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$			(-1.0)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$			(-1.0)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-400)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-400)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-5)			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		(0.12)0.085		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit.		(3.0)4.0		$\mu s$
Fall Time	$t_f$	See specified Test Circuit.		(0.3)0.6		$\mu s$

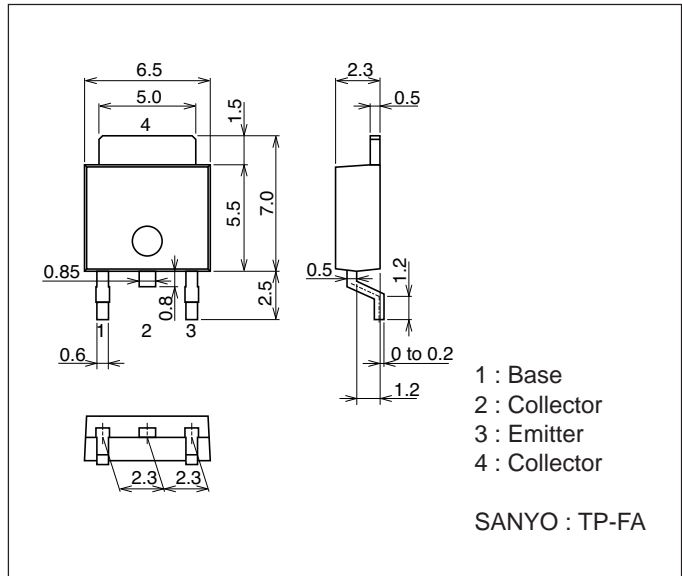
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unit : mm (typ)  
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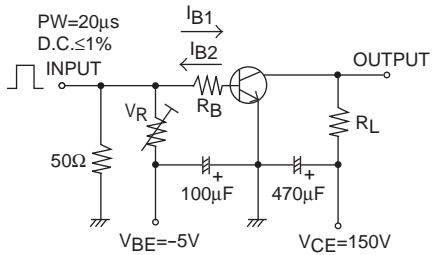


## Package Dimensions

unit : mm (typ)  
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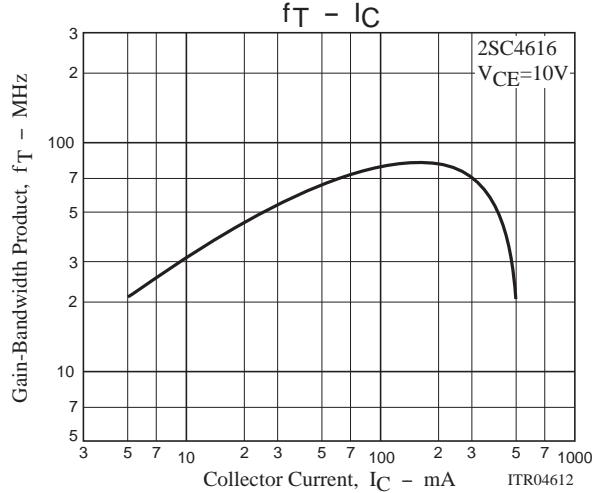
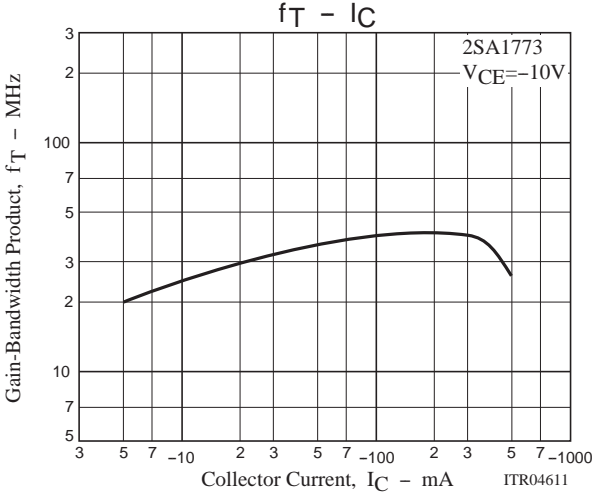
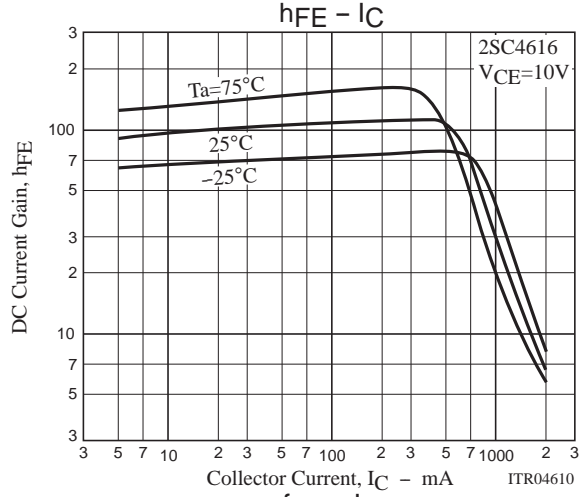
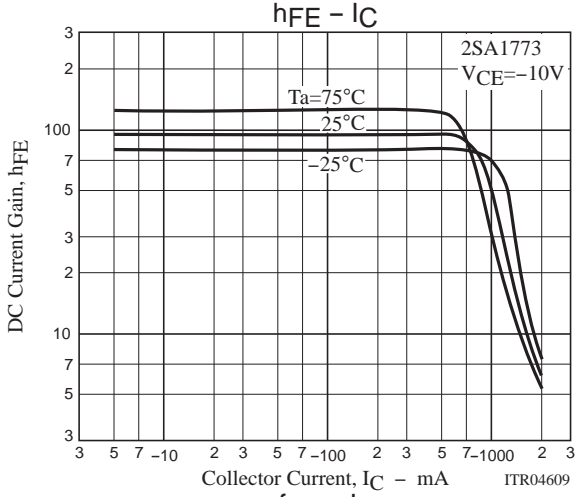
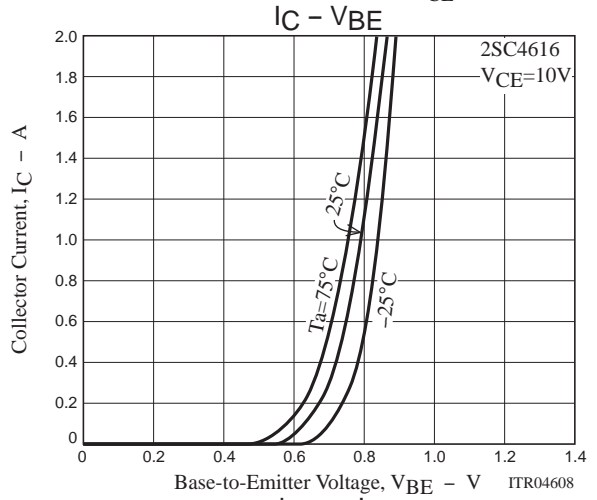
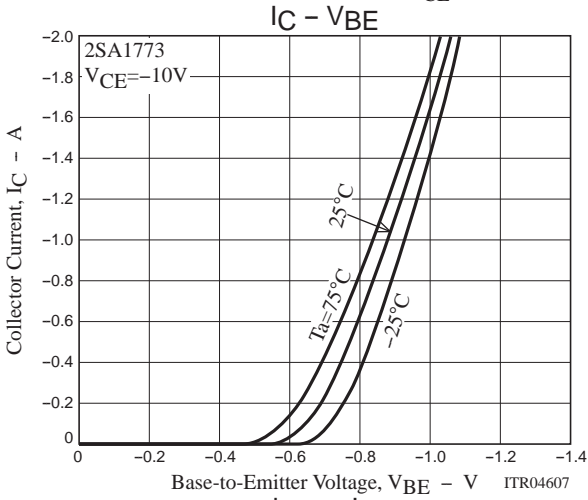
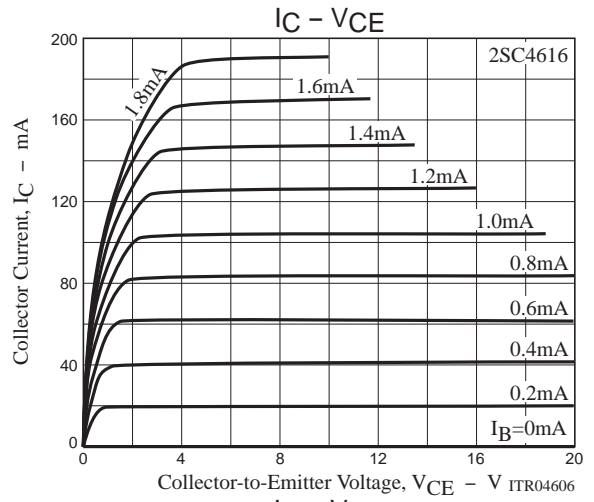
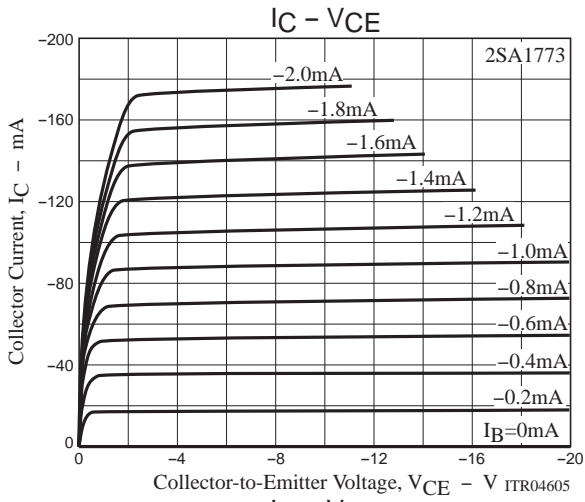


## Switching Time Test Circuit

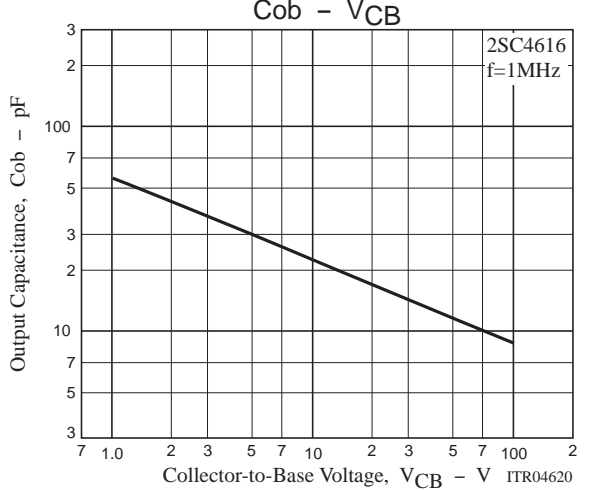
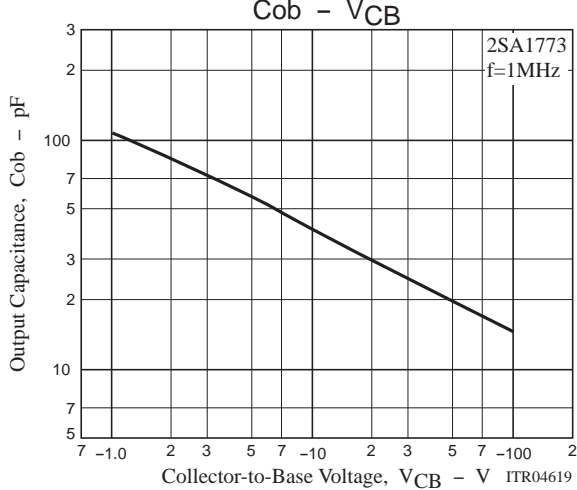
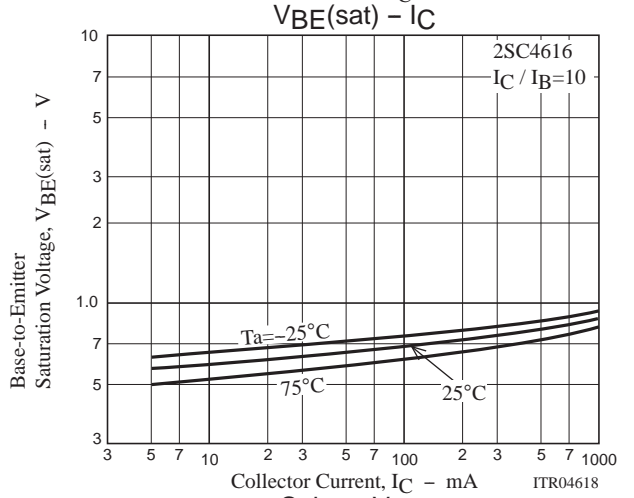
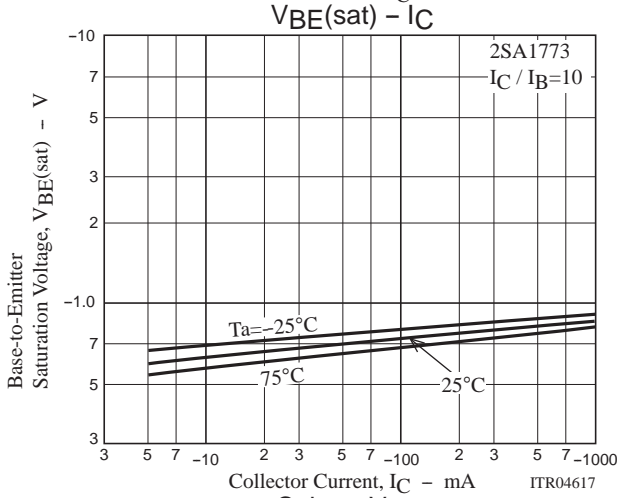
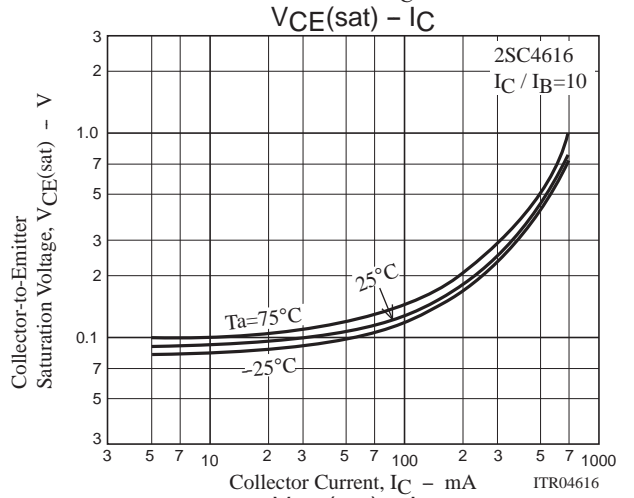
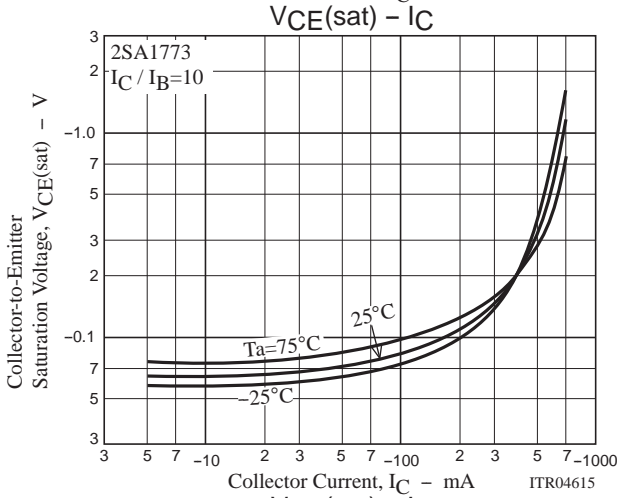
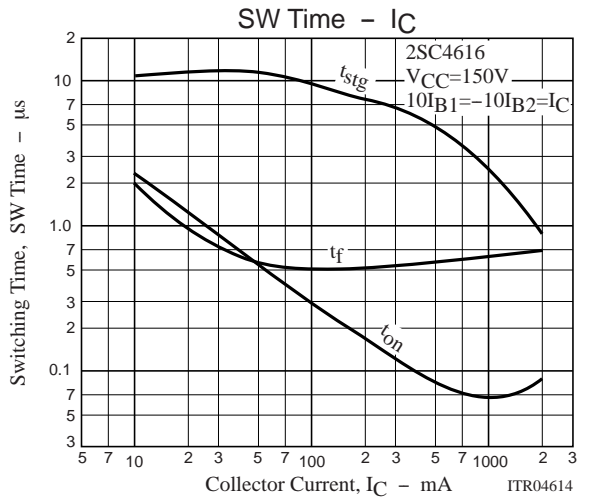
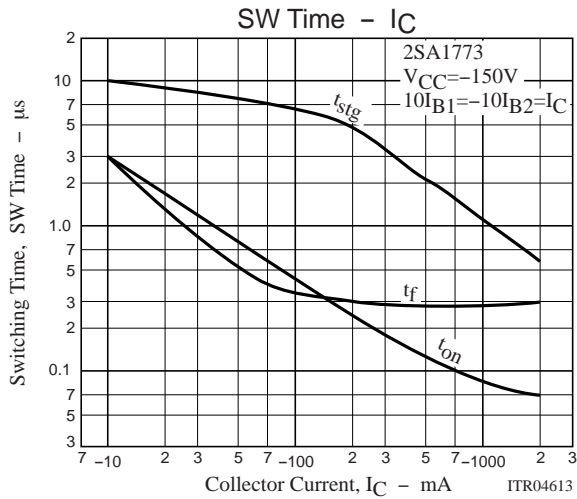


$I_C=10I_B1 = -10I_B2=500mA$   
 $R_L=300\Omega, R_B=20\Omega, \text{ at } I_C=500mA$   
 For PNP, the polarity is reversed.

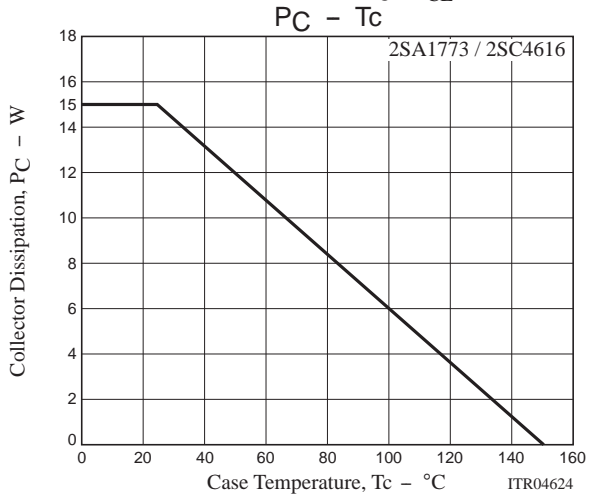
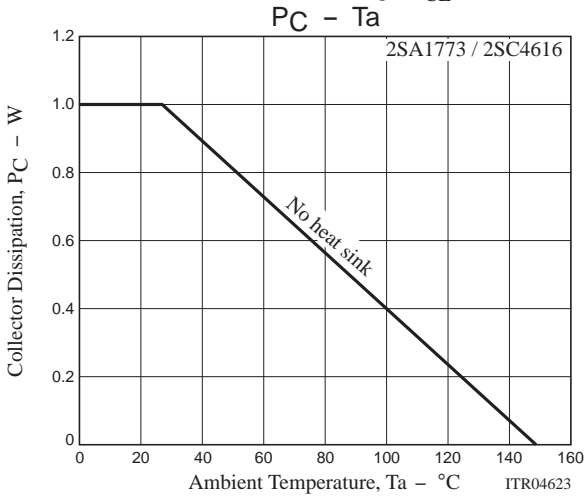
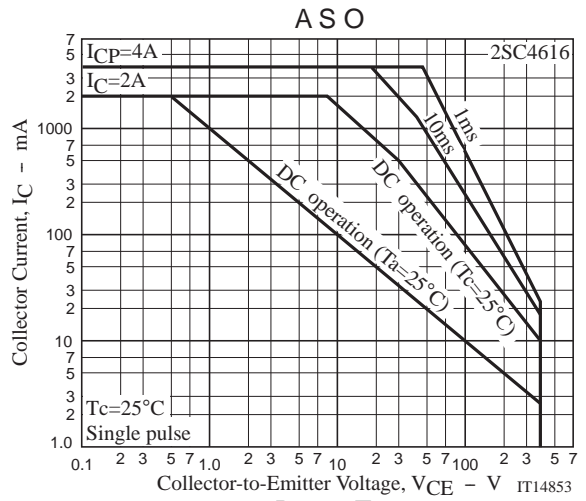
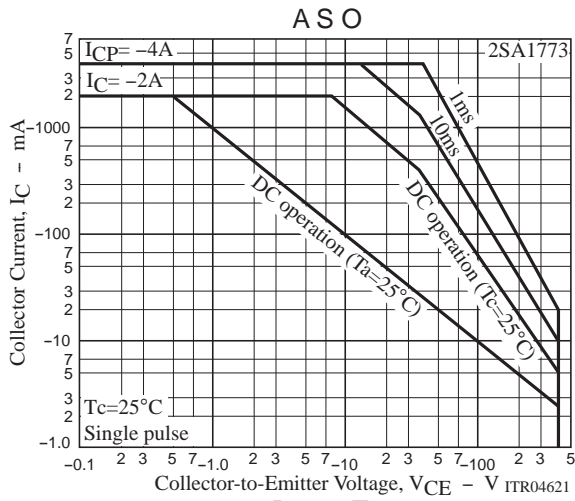
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