



SANYO Semiconductors

DATA SHEET

2SA2099 / 2SC5888

PNP / NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.

Specifications () : 2SA2099

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		(-50)60	V
Collector-to-Emitter Voltage	V _{CEO}		(-)50	V
Emitter-to-Base Voltage	V _{EBO}		(-)6	V
Collector Current	I _C		(-)10	A
Collector Current (Pulse)	I _{CP}		(-)13	A
Base Current	I _B		(-)2	A
Collector Dissipation	P _C		2	W
		T _c =25°C	25	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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SANYO Semiconductor Co., Ltd.

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2SA2099 / 2SC5888

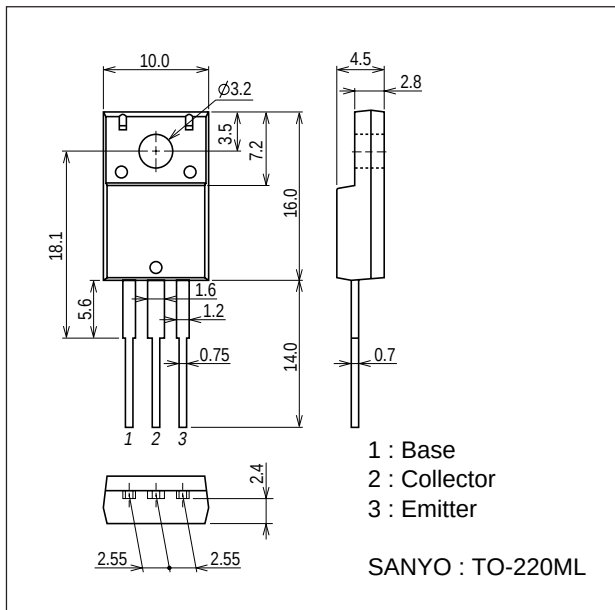
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40V, I_E=0A$			$(-)10$	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0A$			$(-)10$	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)2V, I_C=(-)1A$	200		$(560)700$	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5V, I_C=(-)1A$		$(130)200$		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		$(90)60$		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)5A, I_B=(-)250mA$		$(-250)180$	$(-500)360$	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)5A, I_B=(-)250mA$		$(-)0.93$	$(-)1.4$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)100\mu A, I_E=0A$	$(-50)60$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	$(-)50$			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)100\mu A, I_C=0A$	$(-)6$			V
Turn-ON Time	t_{on}	See specified Test Circuit.		$(70)40$		ns
Storage Time	t_{stg}	See specified Test Circuit.		$(650)1000$		ns
Fall Time	t_f	See specified Test Circuit.		$(60)80$		ns

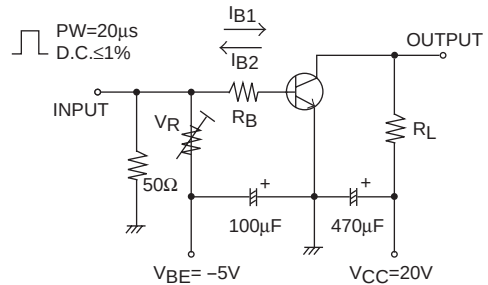
Package Dimensions

unit : mm (typ)

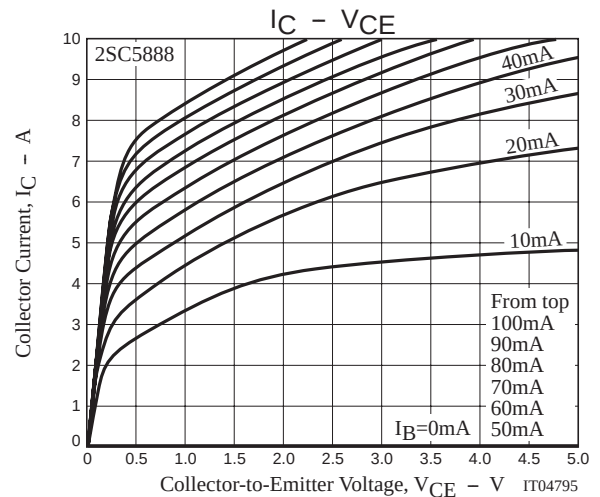
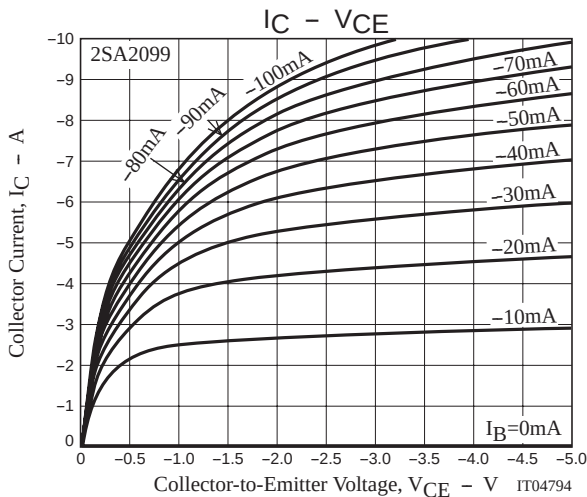
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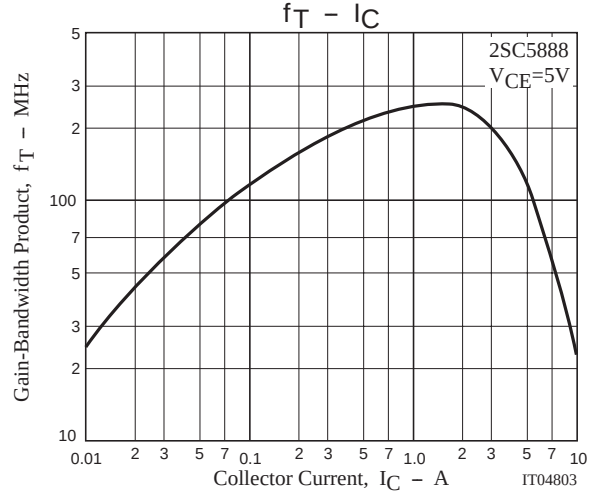
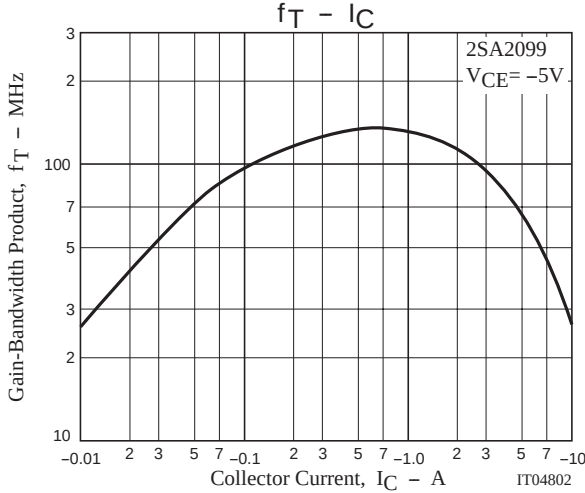
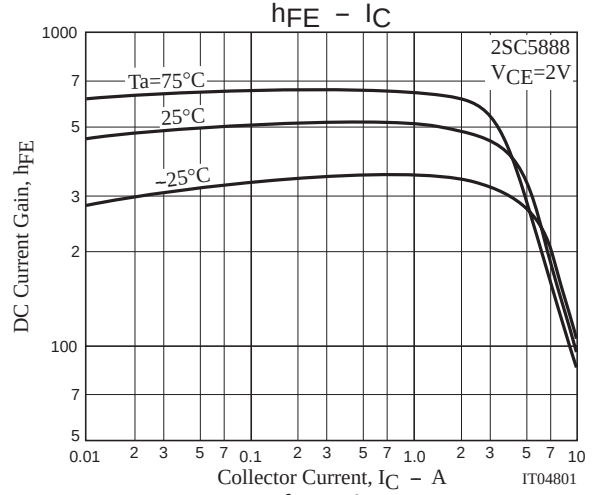
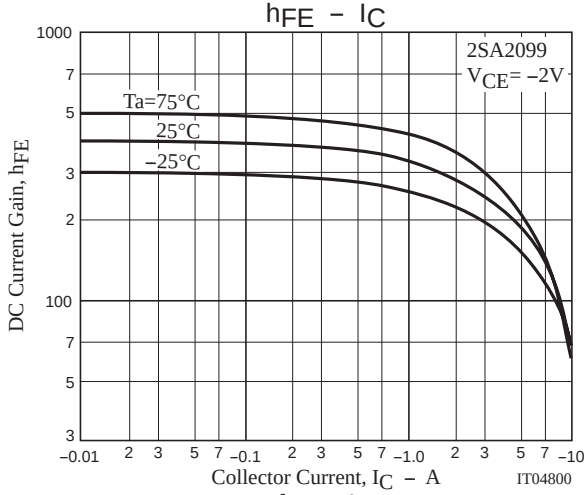
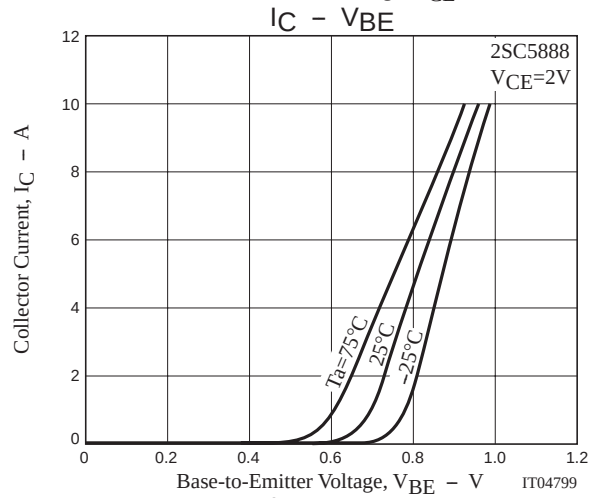
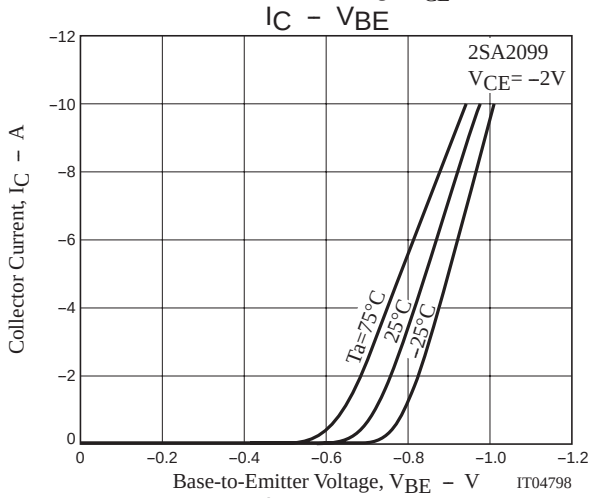
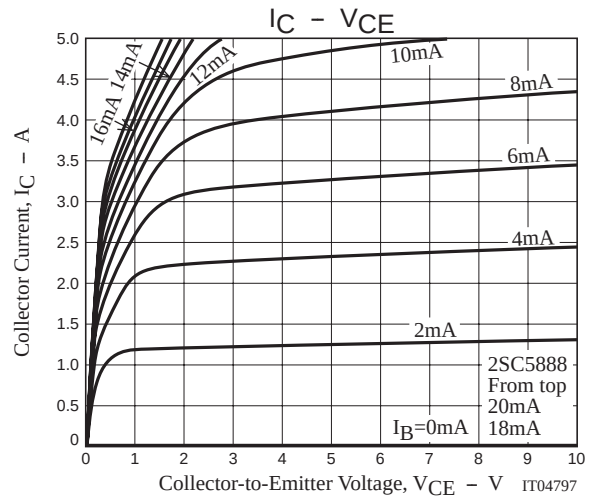
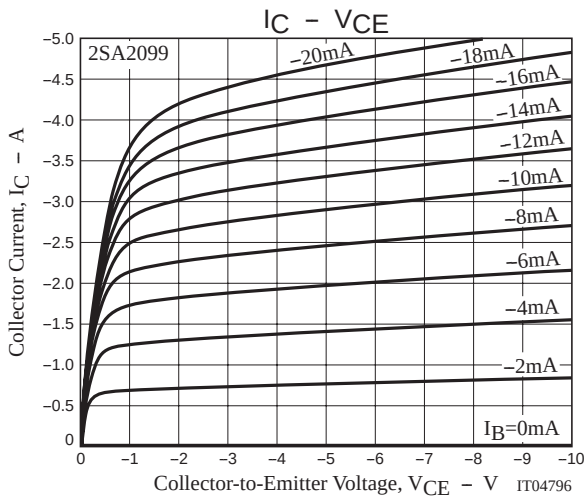


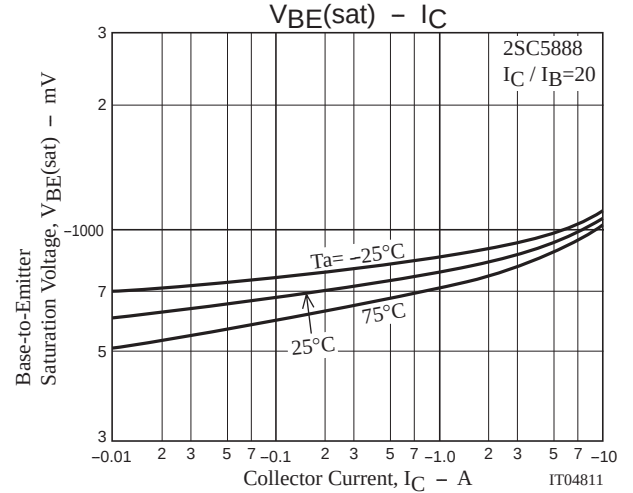
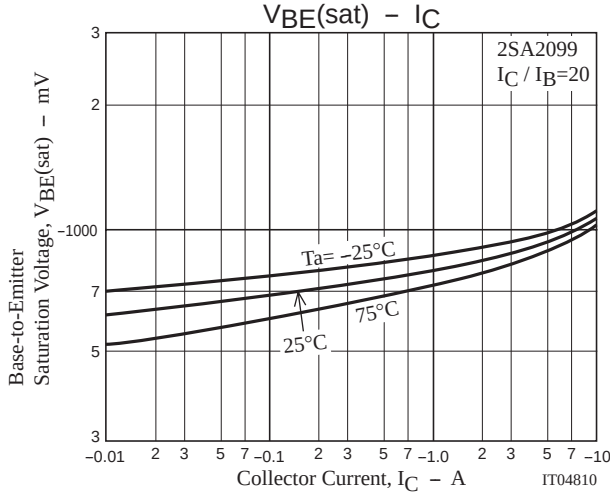
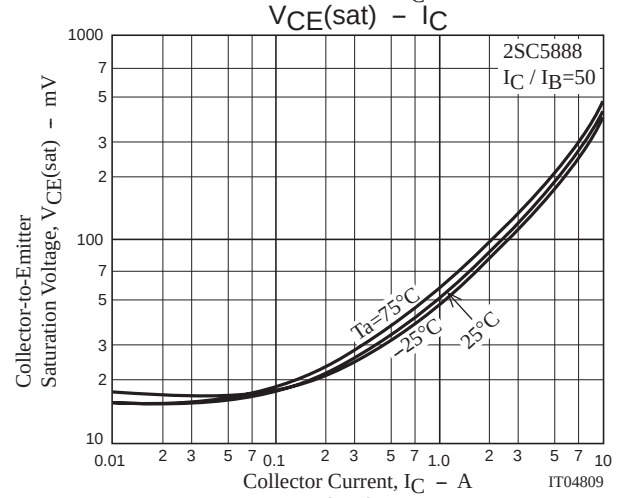
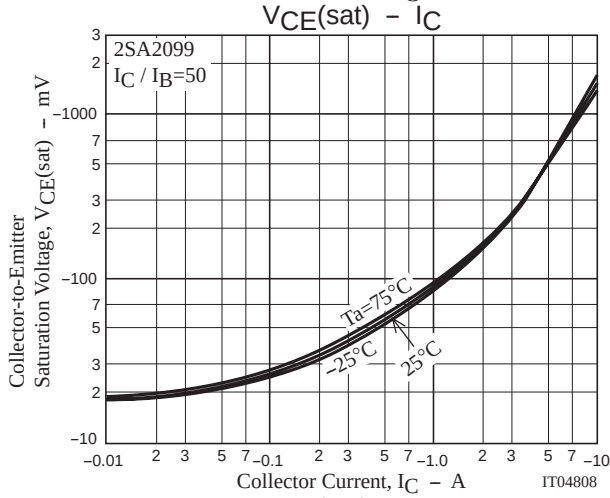
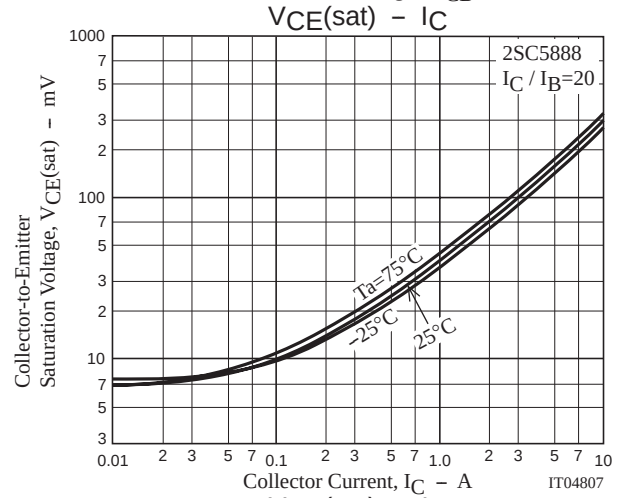
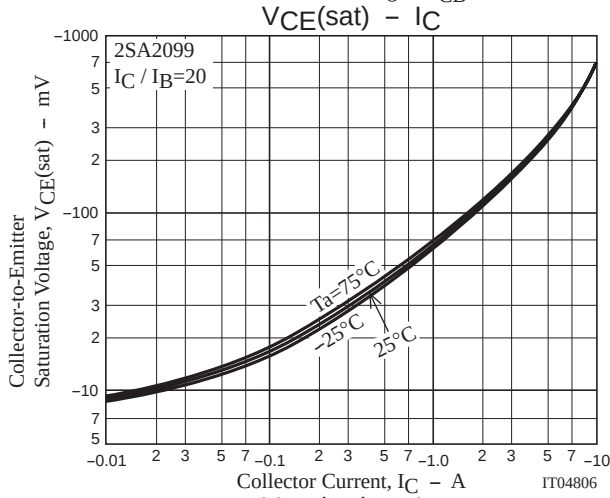
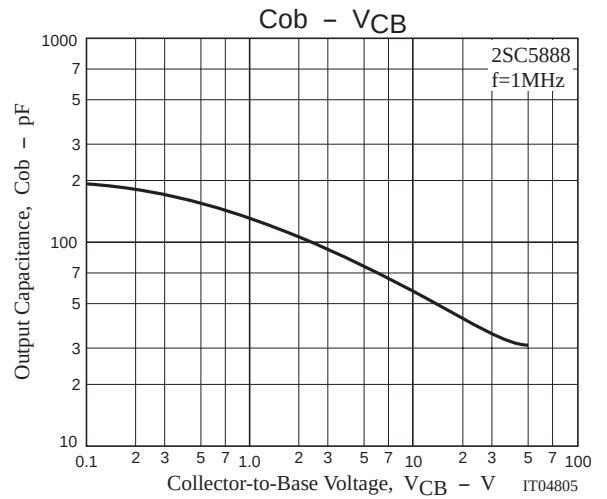
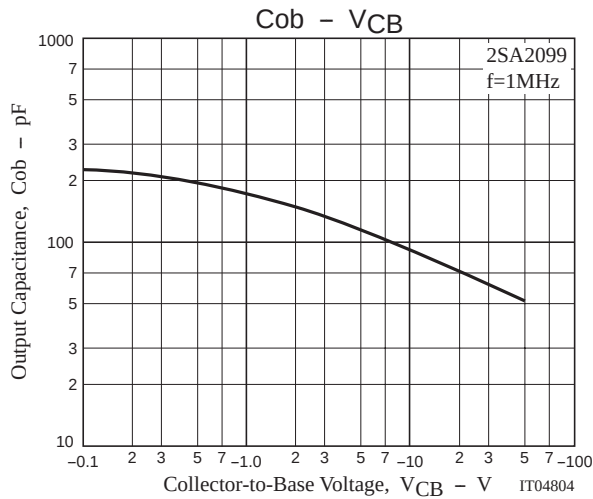
Switching Time Test Circuit

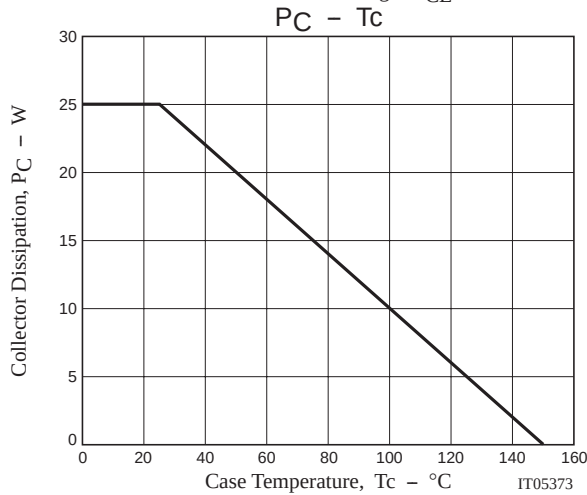
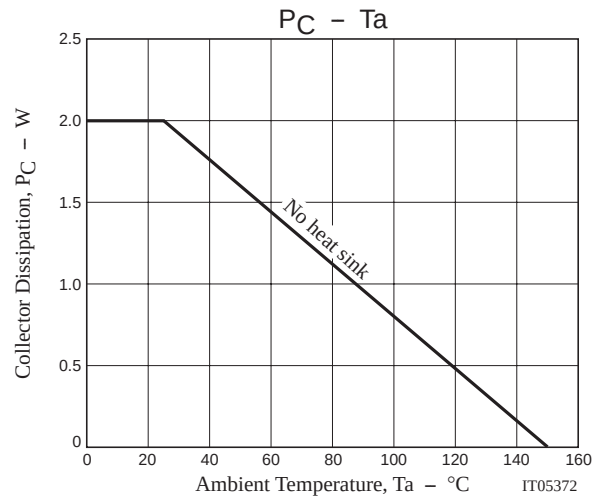
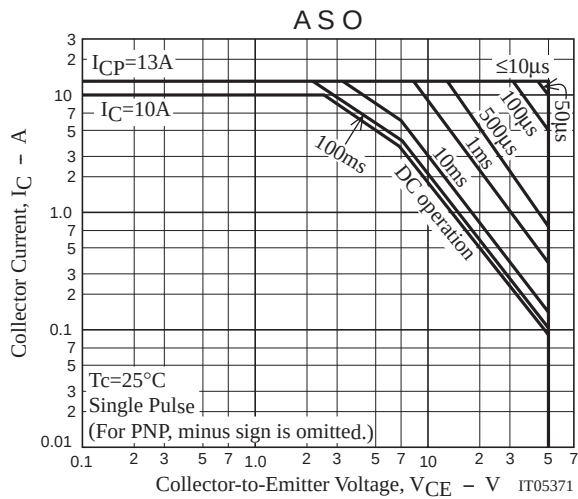


$I_C = 20I_{B1} = -20I_{B2} = 3A$
(For PNP, the polarity is reversed.)









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