



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

ECH8501 — PNP/NPN Epitaxial Planar Silicon Transistors Gate Drive Applications

Features

- Composite type, facilitating high-density mounting
- Low collector-to-emitter saturation voltage
NPN : $V_{CE(sat)}=0.075V(\text{typ.})@I_C=2.5A$
PNP : $V_{CE(sat)}=-0.1V(\text{typ.})@I_C=-2.5A$
- Halogen free compliance
- Mounting height 0.9mm

Specifications () : PNP

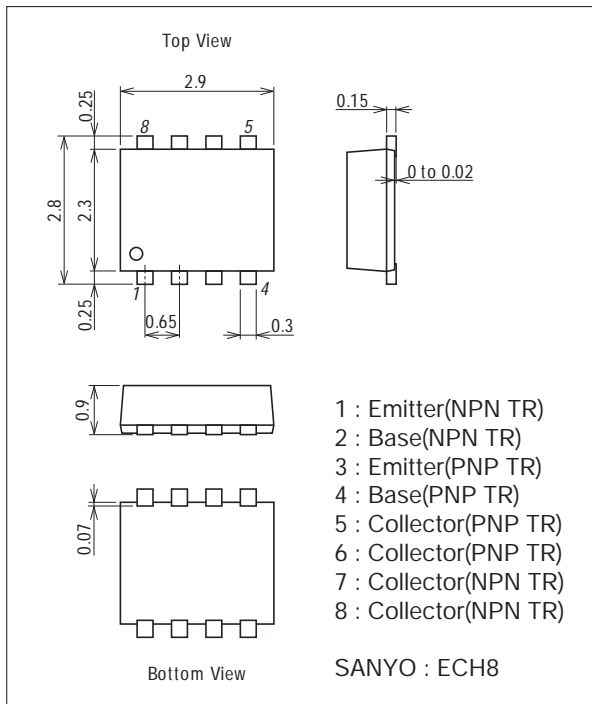
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-30)40	V
Collector-to-Emitter Voltage	V_{CEO}		(-)30	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)5	A
Collector Current (Pulse)	I_{CP}	$PW \leq 1\mu s, \text{ duty cycle} \leq 1\%$	(-)30	A
Base Current	I_B		(-)600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.6	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

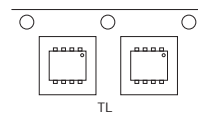
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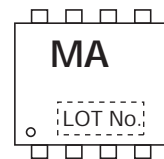
Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

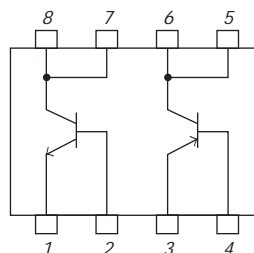
Packing Type : TL



Marking



Electrical Connection

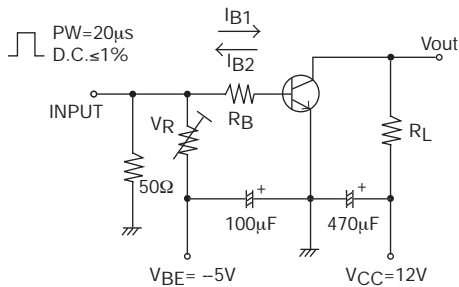


Electrical Characteristics at Ta=25°C

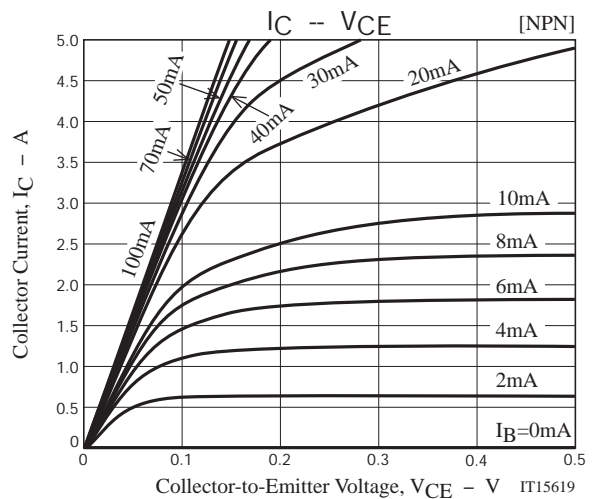
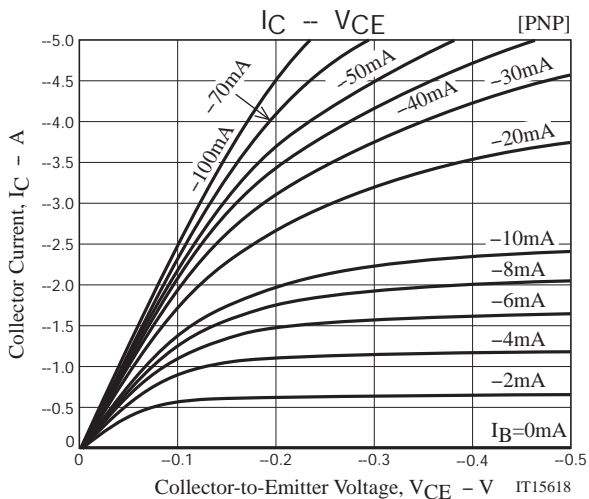
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =(-)30V, I _E =0A			(-)0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =(-)4V, I _C =0A			(-)0.1	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)500mA	200		560	
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)500mA		(260)280		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(49)32		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)2.5A, I _B =(-)125mA		(-100)75	(-170)110	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =(-)2.5A, I _B =(-)125mA		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =(-)10μA, I _E =0A	(-30)40			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =(-)1mA, R _{BE} =∞	(-)30			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =(-)10μA, I _C =0A	(-)6			V
Turn-On Time	t _{on}	See specified Test Circuit.		(37)30		ns
Storage Time	t _{stg}	See specified Test Circuit.		(147)220		ns
Fall Time	t _f	See specified Test Circuit.		(14)12		ns

Note : The specifications shown above are for each individual transistor.

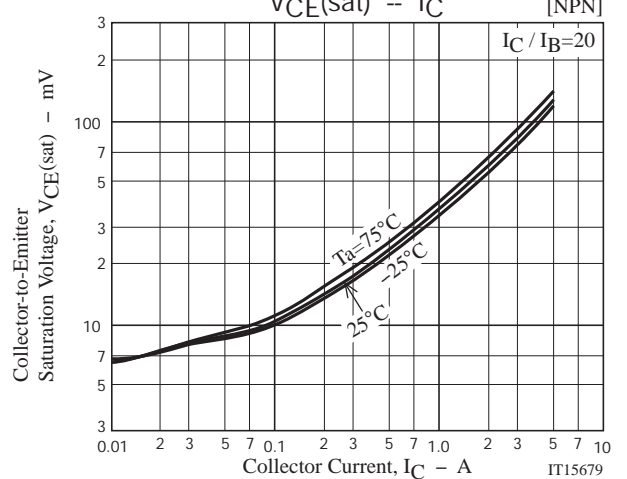
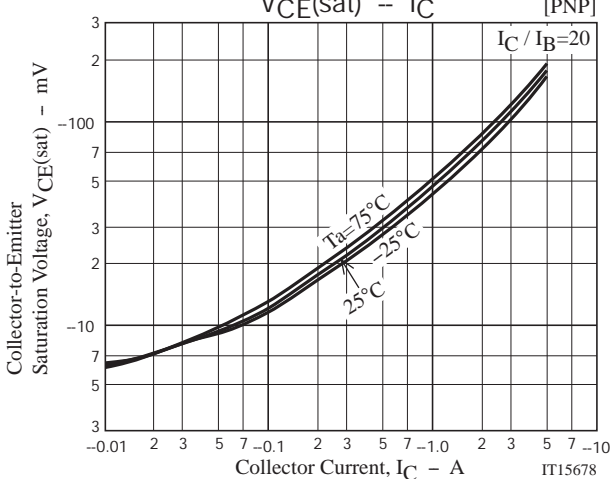
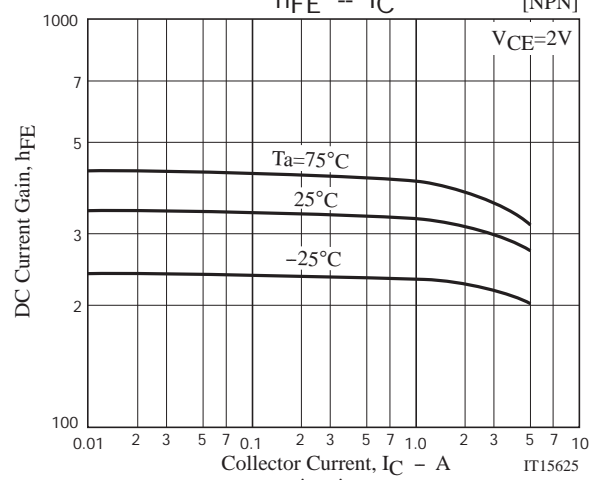
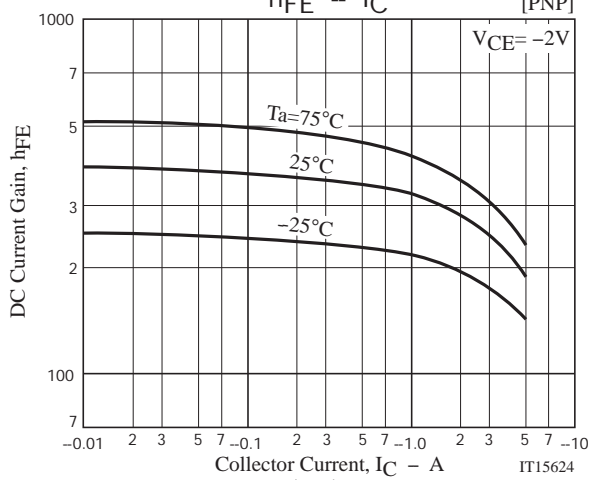
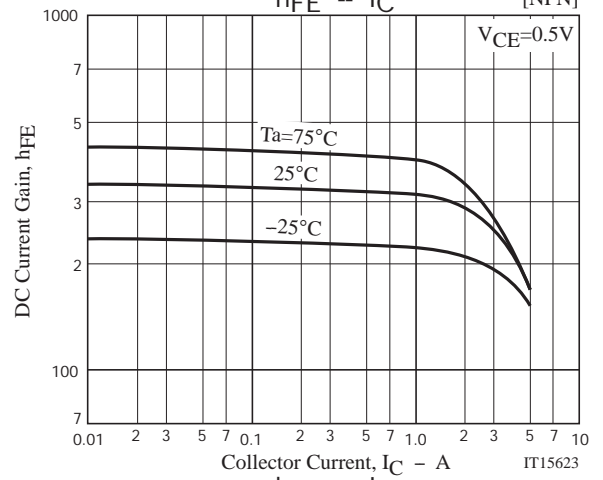
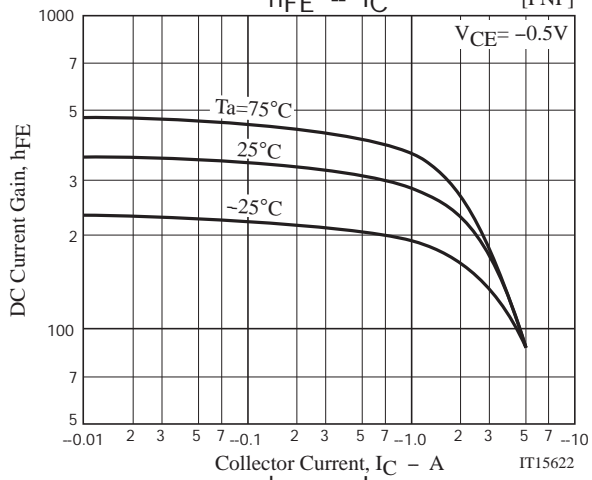
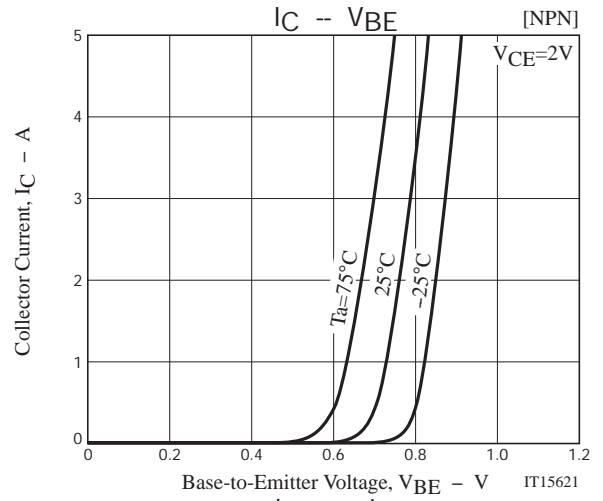
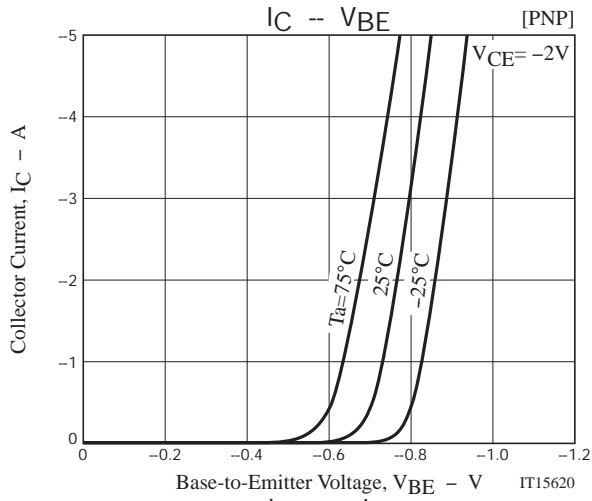
Switching Time Test Circuit

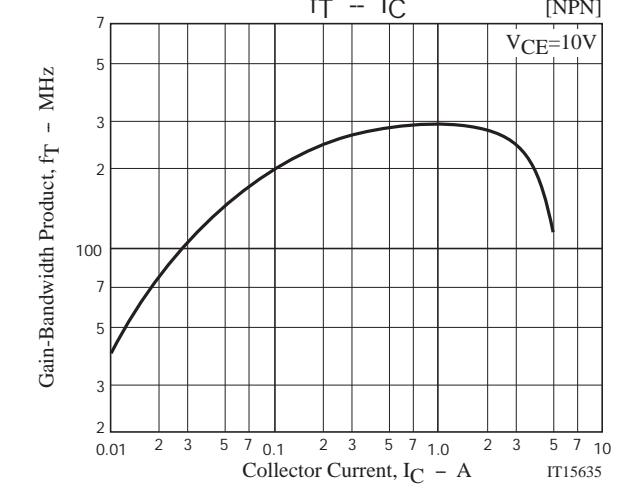
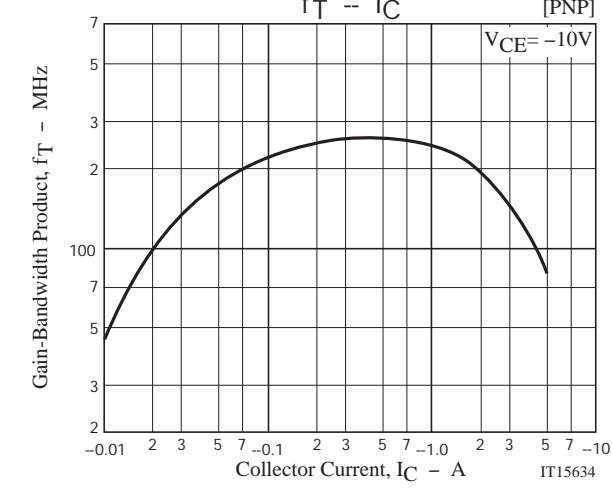
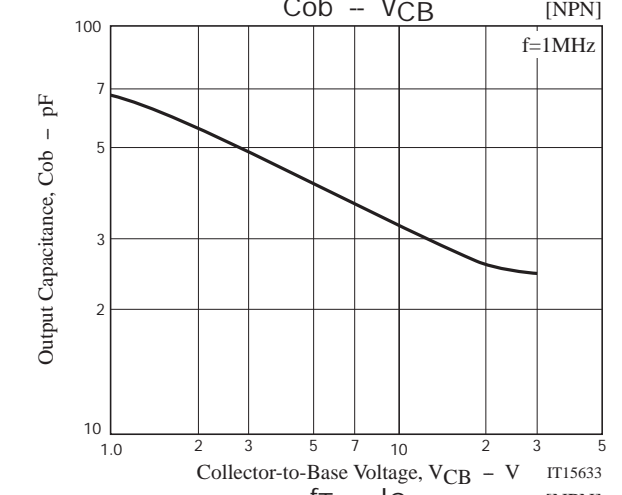
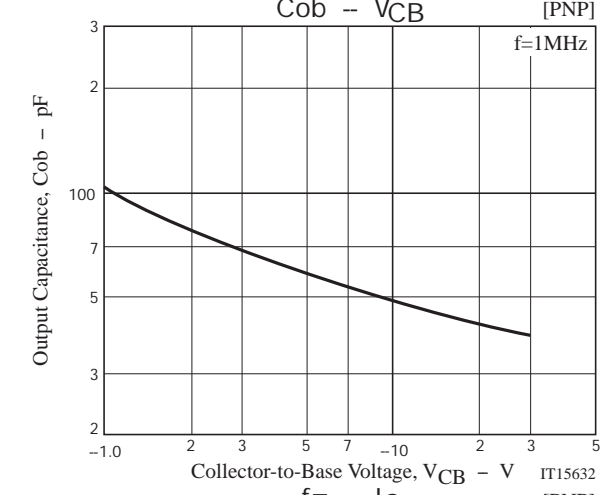
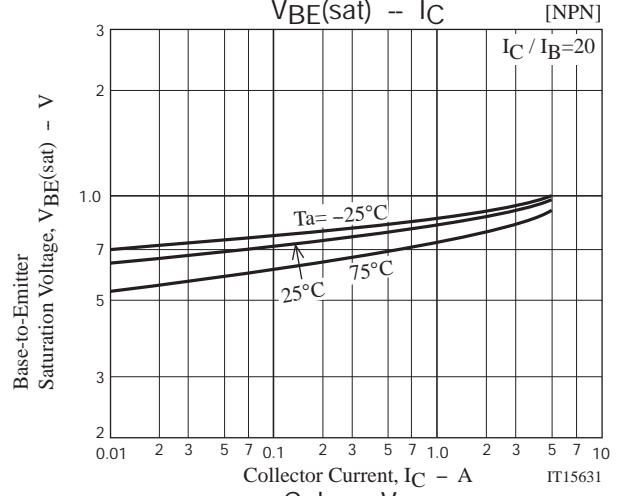
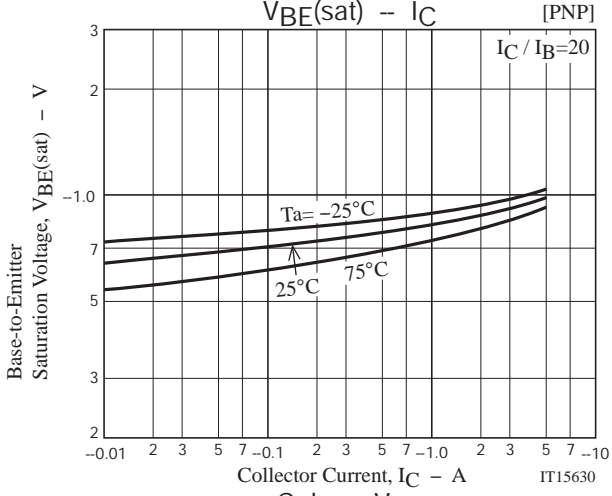
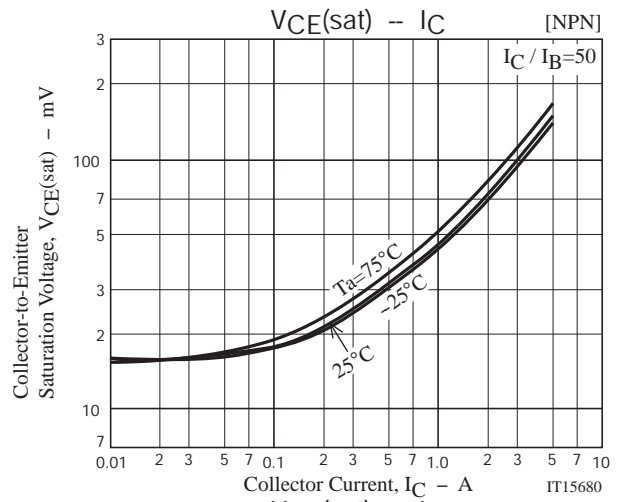
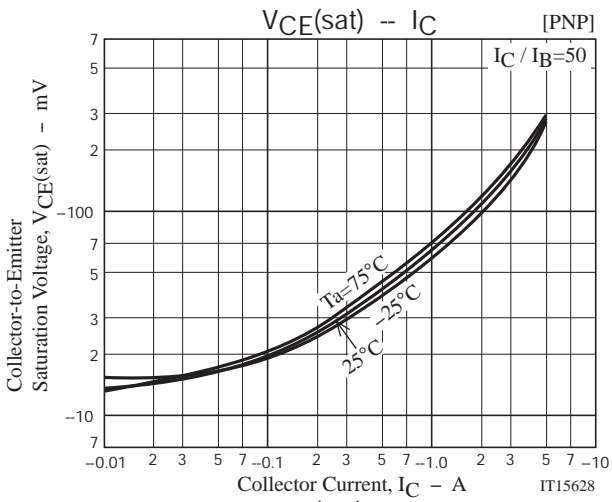


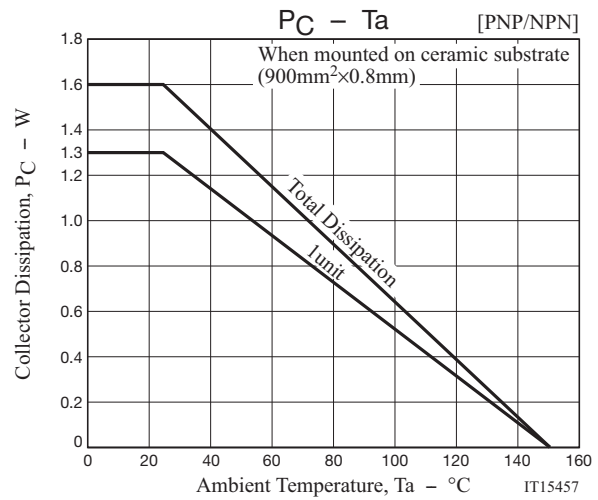
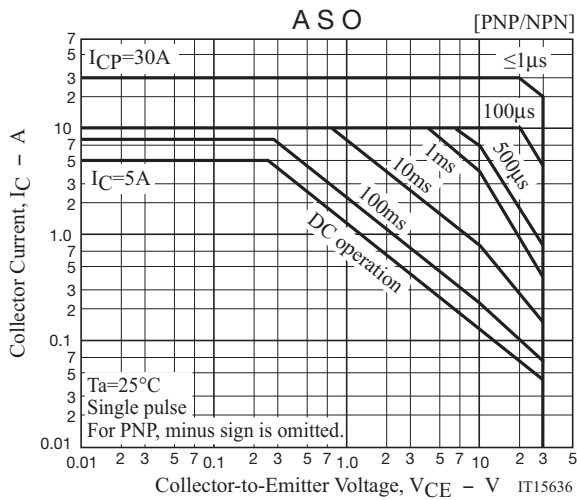
IC=20IB1= -20IB2=2.5A
(For PNP, the polarity is reversed.)



ECH8501







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