



# ECH8502 — PNP/NPN Epitaxial Planar Silicon Transistors

## Gate Drive Applications

### Features

- Composite type, facilitating high-density mounting
- Low collector-to-emitter saturation voltage  
 NPN :  $V_{CE(sat)}=0.08V(\text{typ.})@I_C=2.5A$   
 PNP :  $V_{CE(sat)}=-0.12V(\text{typ.})@I_C=-2.5A$
- Halogen free compliance
- Mounting height 0.9mm

### Specifications ( ) : PNP

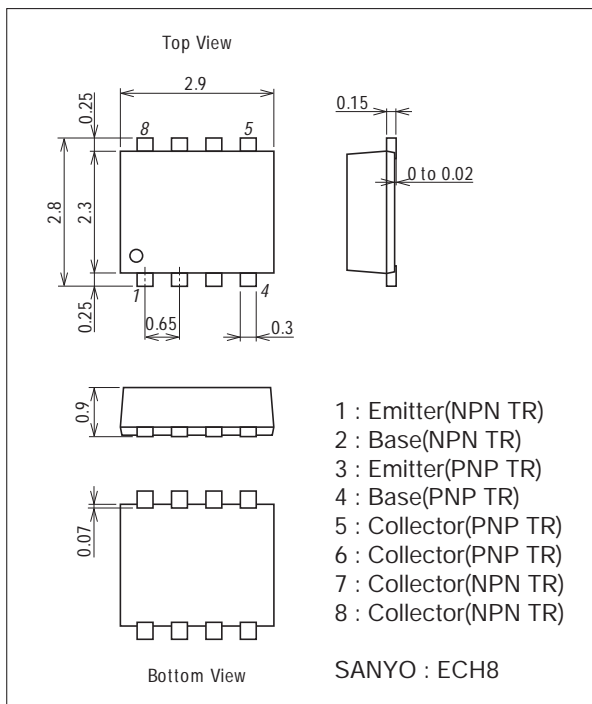
Absolute Maximum Ratings at  $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-50)100	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)50	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 <sup>2</sup> ×0.8mm) 1unit	1.3	W
Total Dissipation	$P_T$	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.6	W
Junction Temperature	$T_j$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

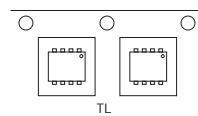
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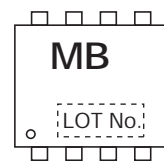
### Product & Package Information

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

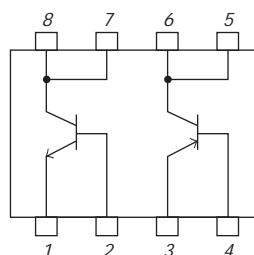
### Packing Type : TL



### Marking



### Electrical Connection

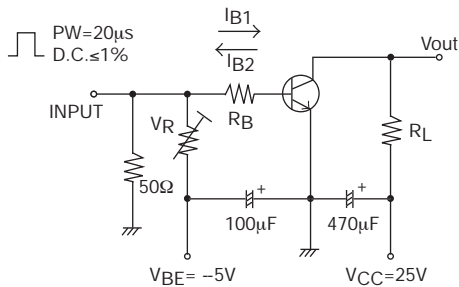


Electrical Characteristics at Ta=25°C

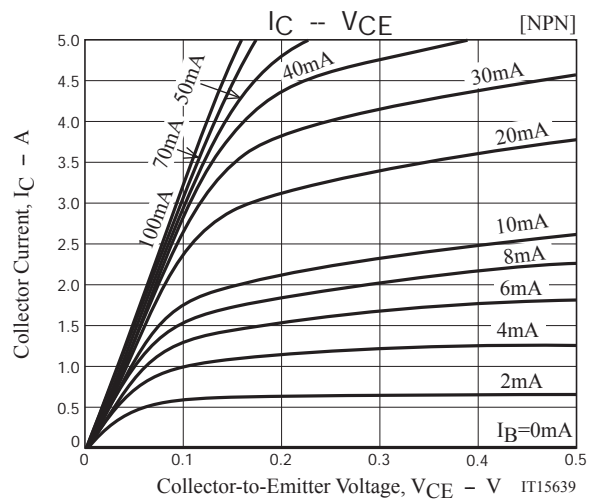
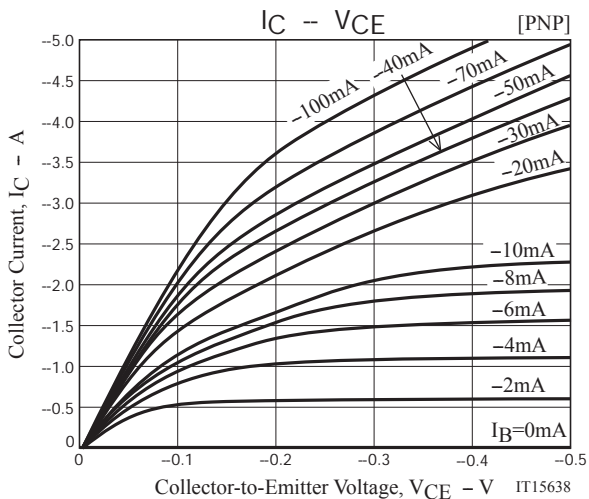
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =(-)50V, I <sub>E</sub> =0A			(-)0.1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0A			(-)0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)500mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)500mA		(260)290		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		(45)25		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)2.5A, I <sub>B</sub> =(-)125mA		(-120)80	(-200)120	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =(-)2.5A, I <sub>B</sub> =(-)125mA		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =(-)10μA, I <sub>E</sub> =0A	(-50)100			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =(-)1mA, R <sub>BE</sub> =∞	(-)50			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =(-)10μA, I <sub>C</sub> =0A	(-)6			V
Turn-On Time	t <sub>on</sub>	See specified Test Circuit.		(30)30		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		(180)280		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		(20)25		ns

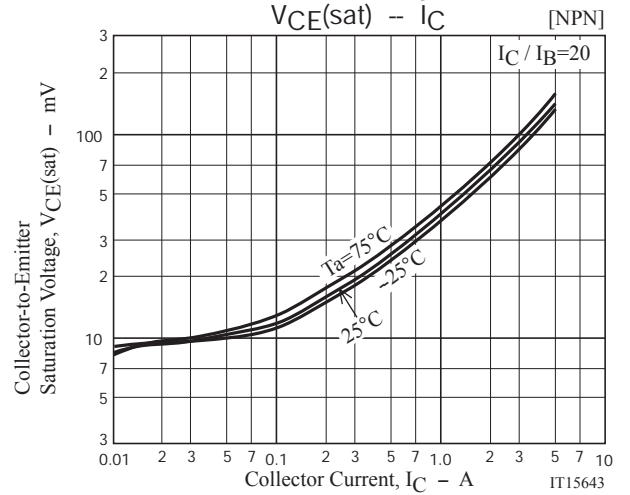
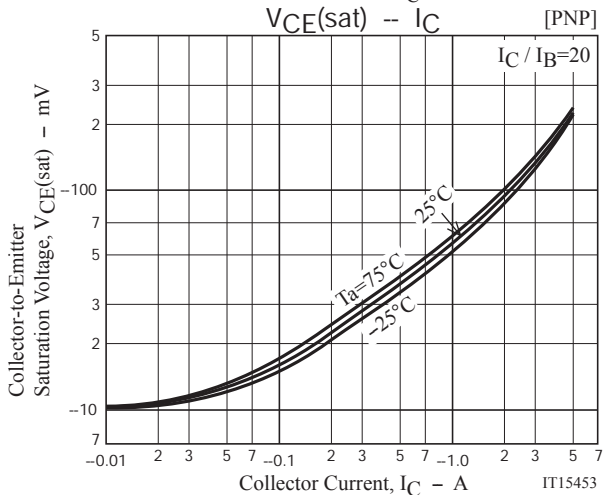
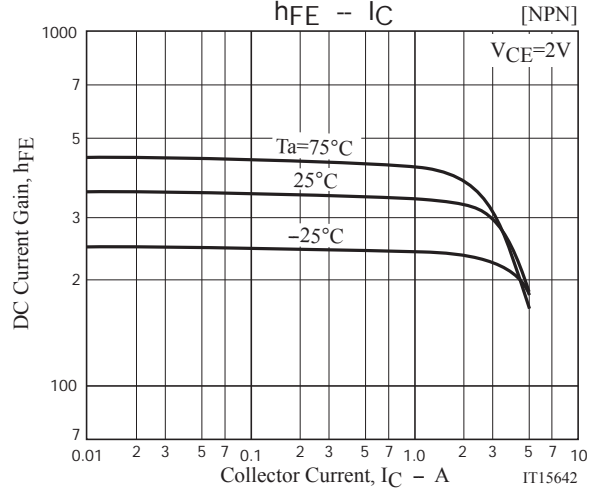
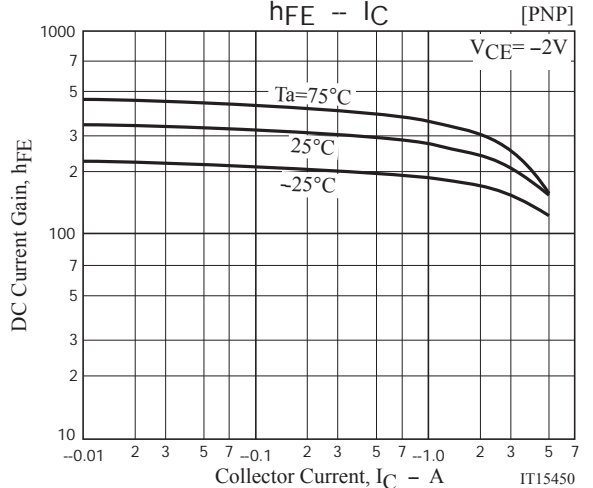
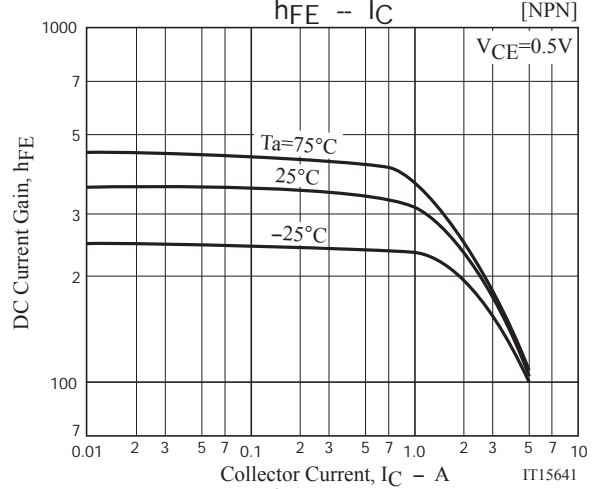
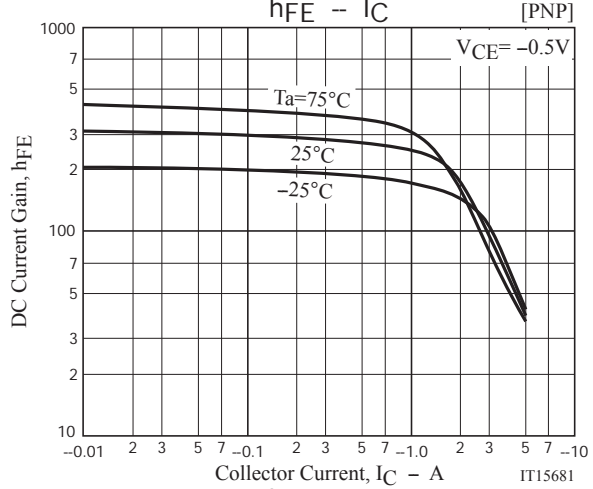
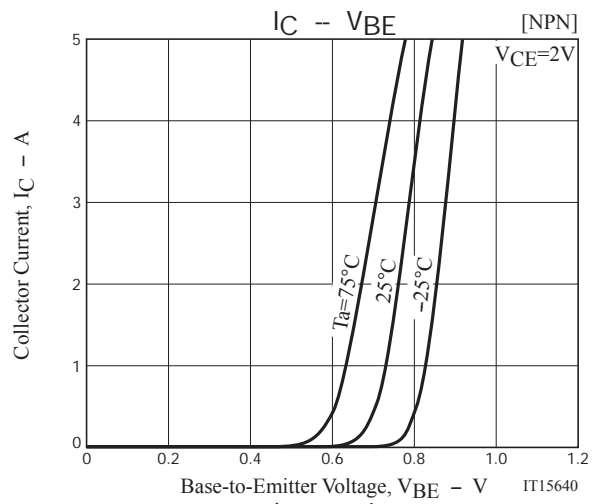
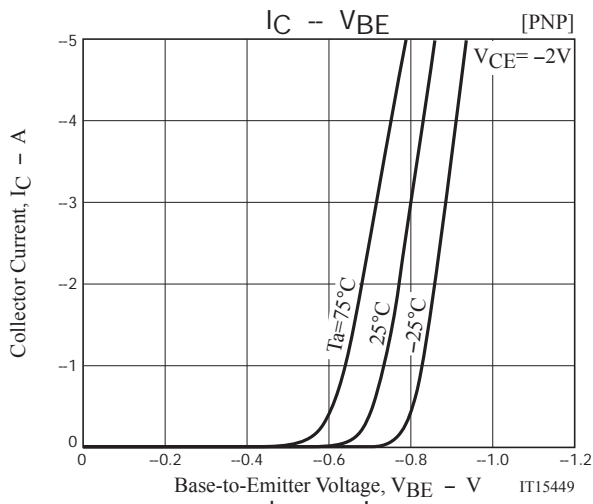
Note : The specifications shown above are for each individual transistor.

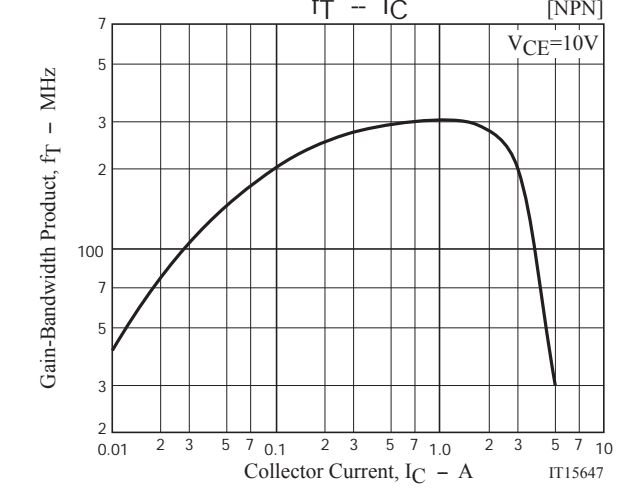
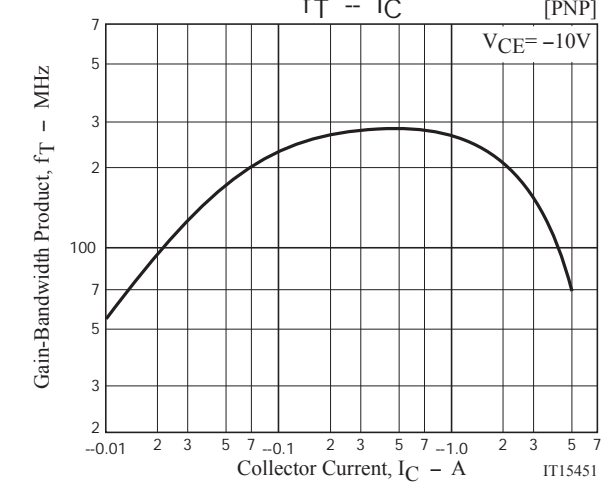
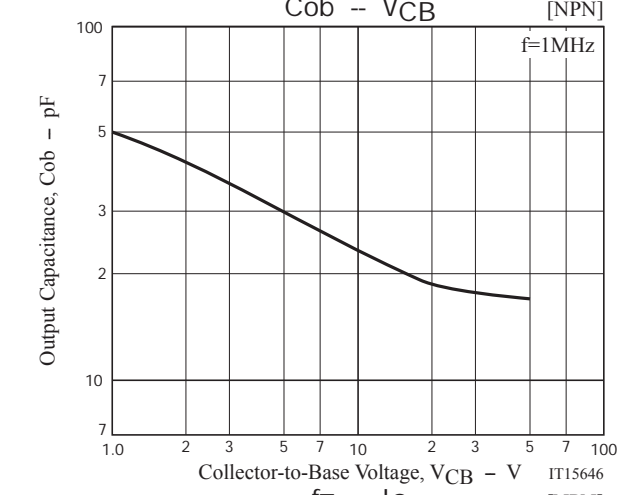
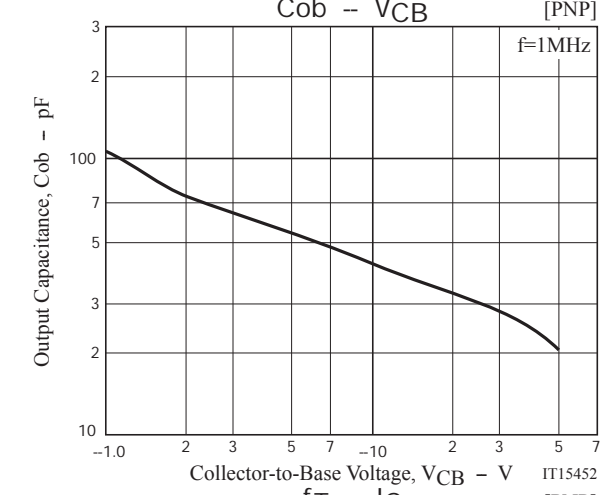
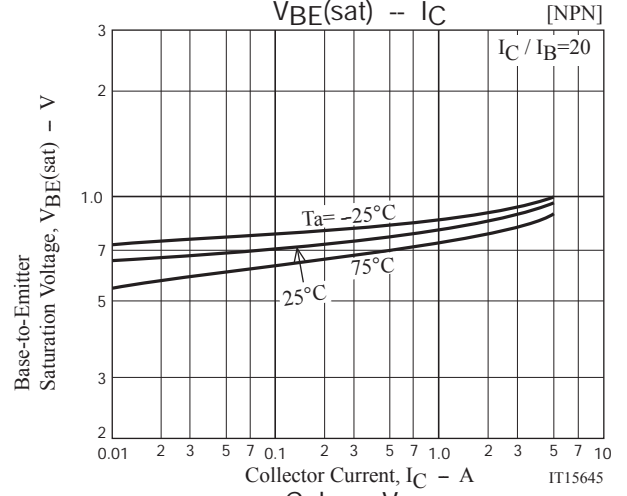
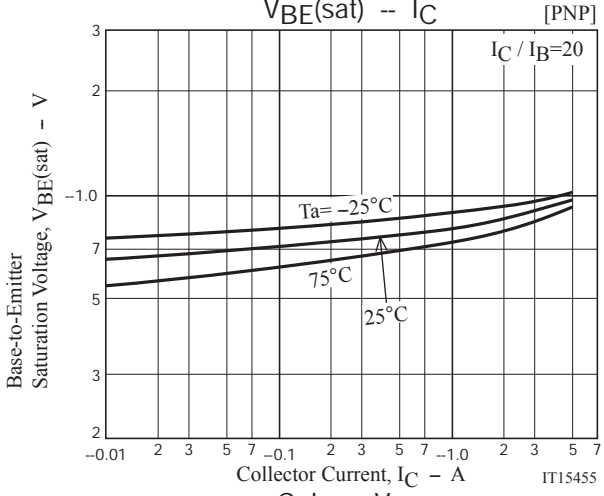
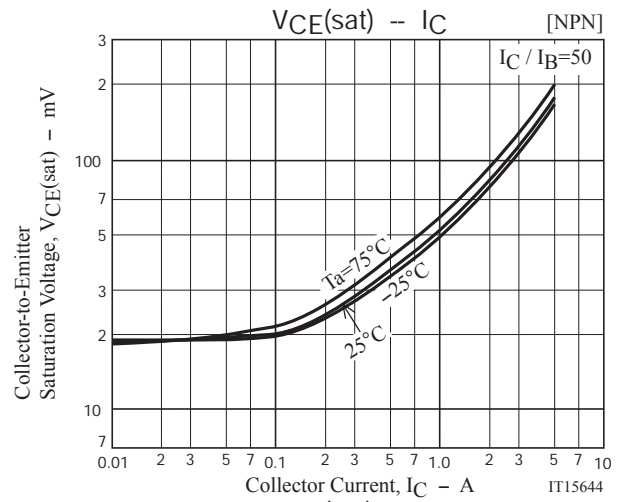
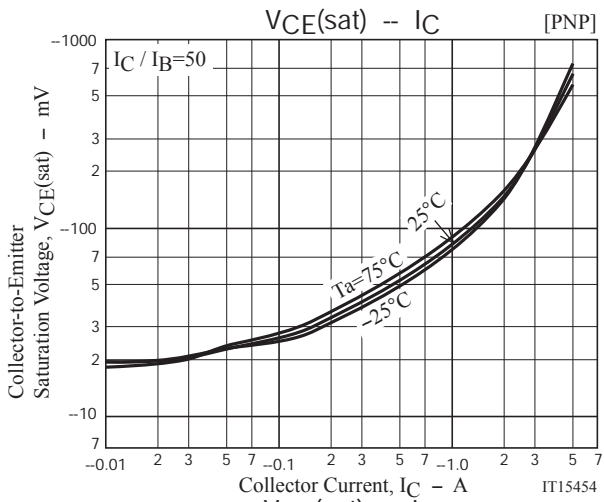
Switching Time Test Circuit

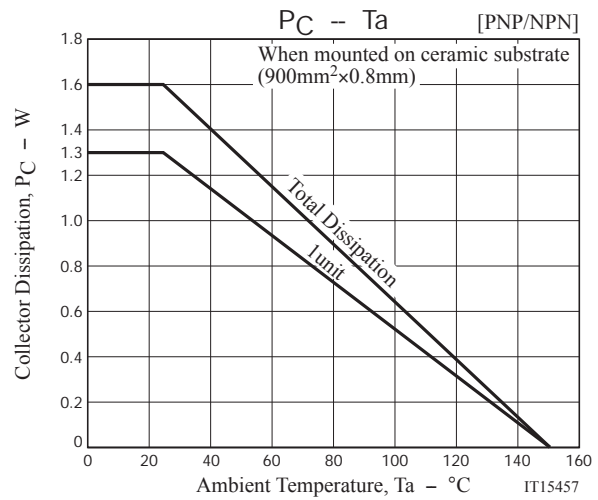
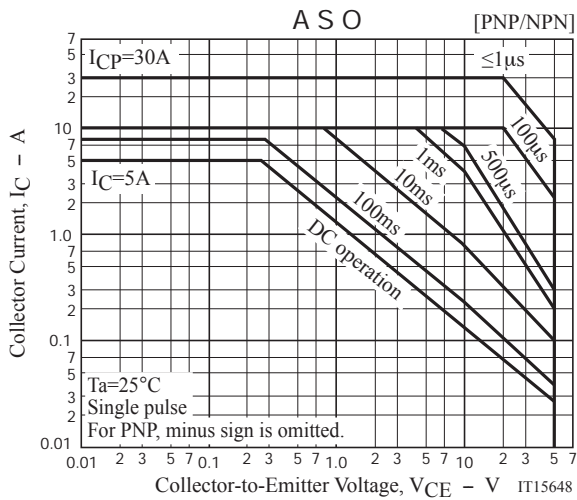


IC=20IB1= -20IB2=2.5A  
(For PNP, the polarity is reversed.)









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