



# PCP1208 — NPN Epitaxial Planar Silicon Transistor LED Back Light

## Features

- $V_{CE0}=200V$ ,  $I_C=0.7A$
- High allowable power dissipation
- Halogen free compliance
- Low collector-to-emitter saturation voltage  $V_{CE(sat)}=0.115V$ (typ.)@ $I_C=0.35A$
- High-speed switching  $t_f=70ns$ (typ.)@ $I_C=0.3A$

## Specifications

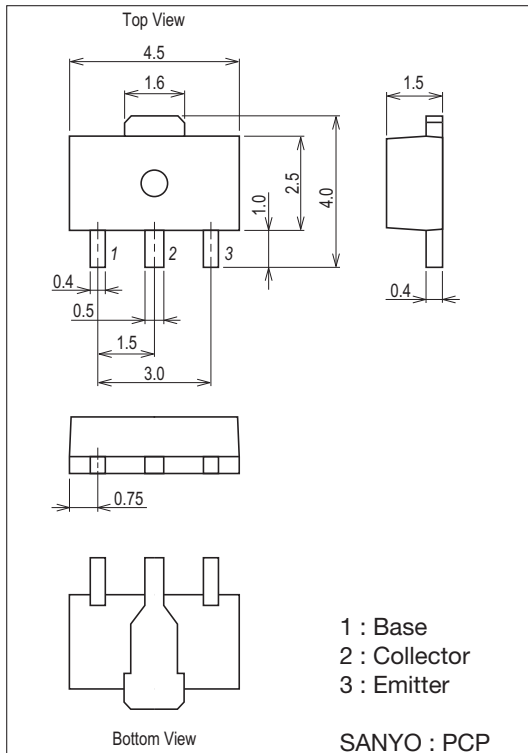
Absolute Maximum Ratings at  $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		220	V
Collector-to-Emitter Voltage	$V_{CEO}$		200	V
Emitter-to-Base Voltage	$V_{EBO}$		8	V
Collector Current	$I_C$		0.7	A
Collector Current (Pulse)	$I_{CP}$		2	A
Base Current	$I_B$		140	mA
Collector Dissipation	$P_C$	When mounted on ceramic substrate (450mm <sup>2</sup> x0.8mm)	1.3	W
		$T_c=25^\circ C$	3.5	W
Junction Temperature	$T_j$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

## Package Dimensions

unit : mm (typ)

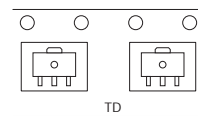
7007B-004



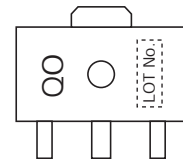
## Product & Package Information

- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1000 pcs./reel

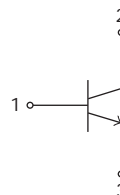
## Packing Type : TD



## Marking



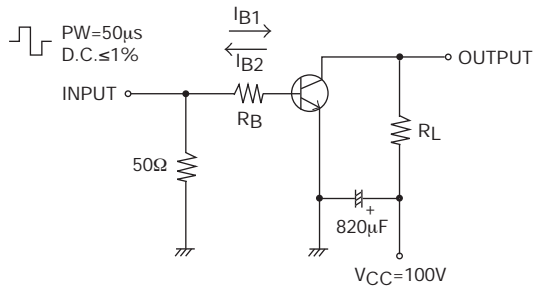
## Electrical Connection



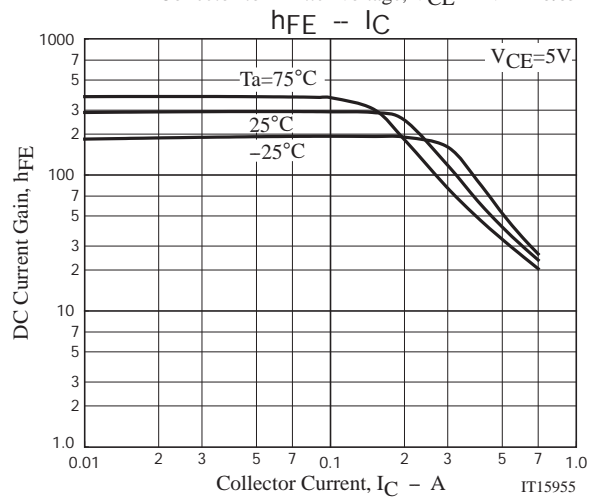
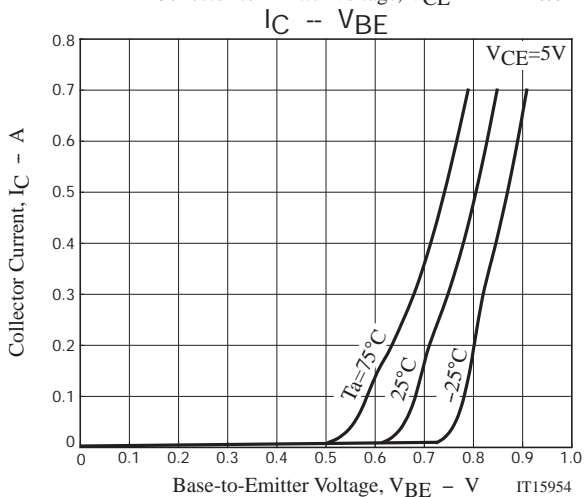
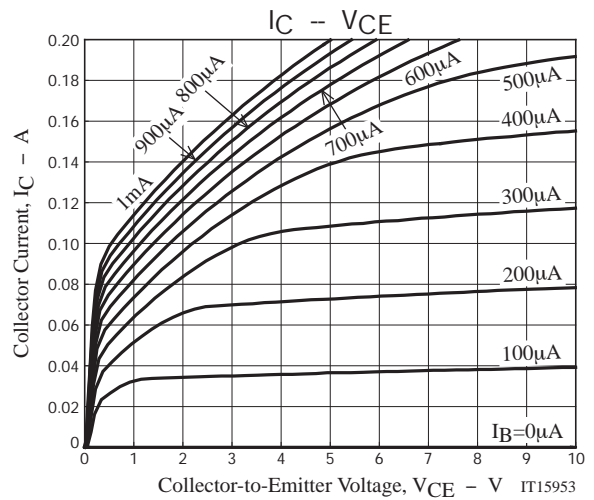
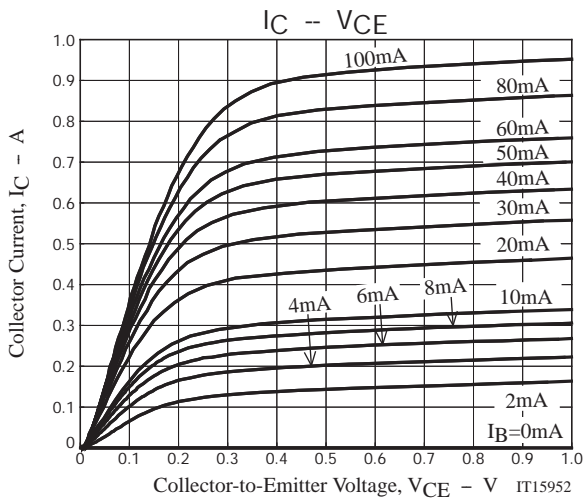
Electrical Characteristics at  $T_a=25^\circ\text{C}$

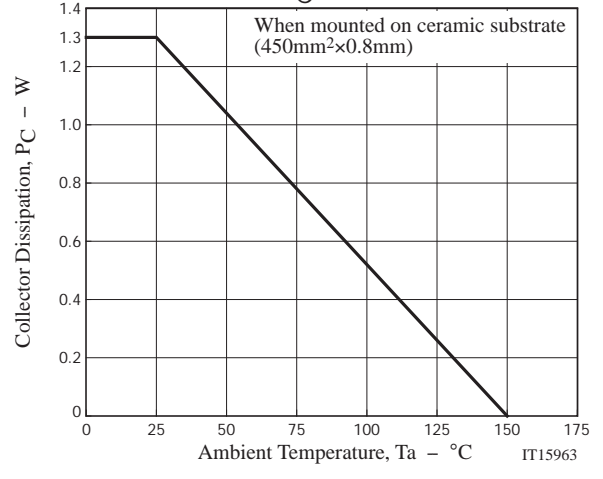
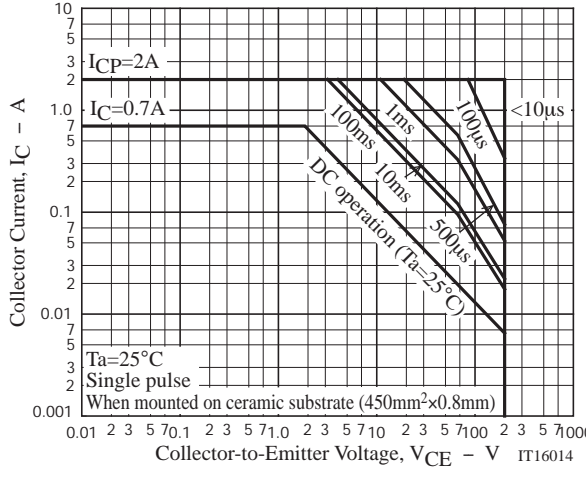
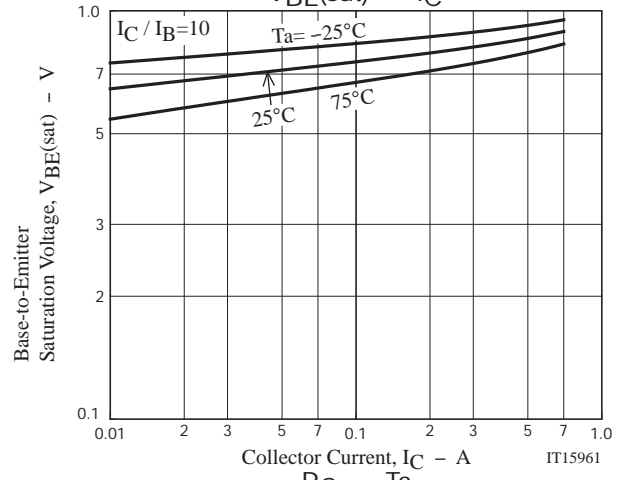
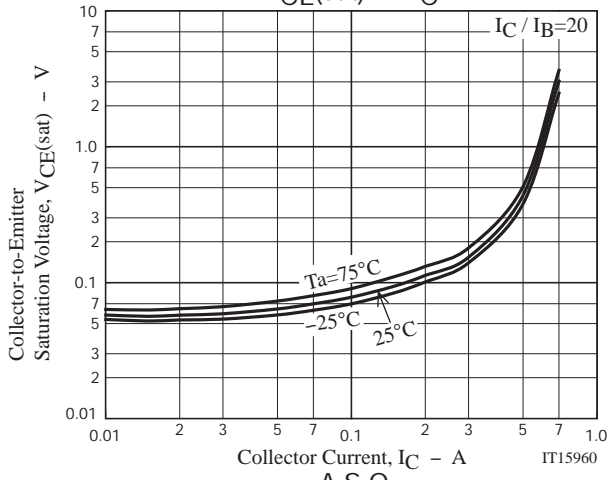
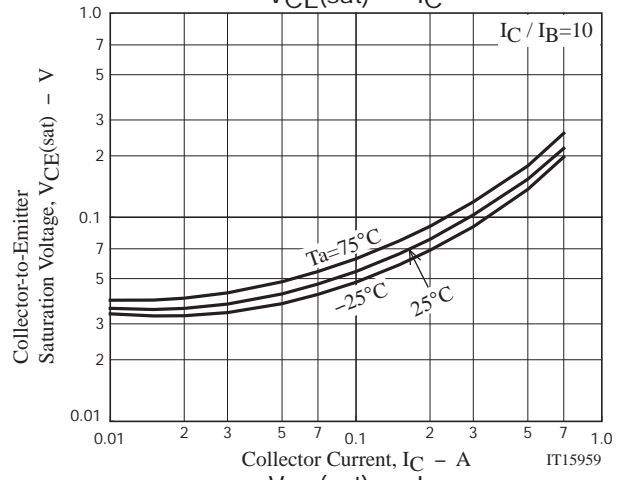
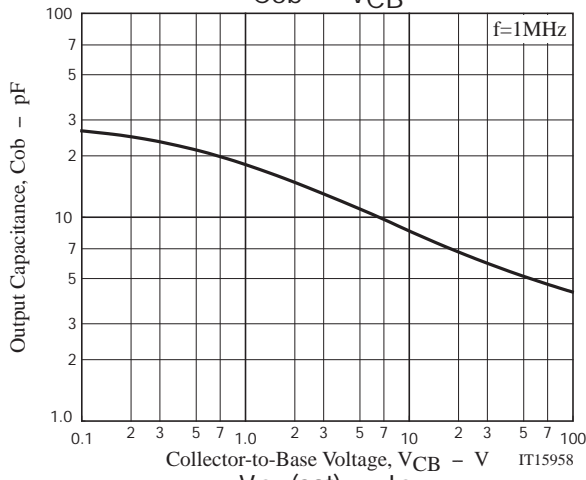
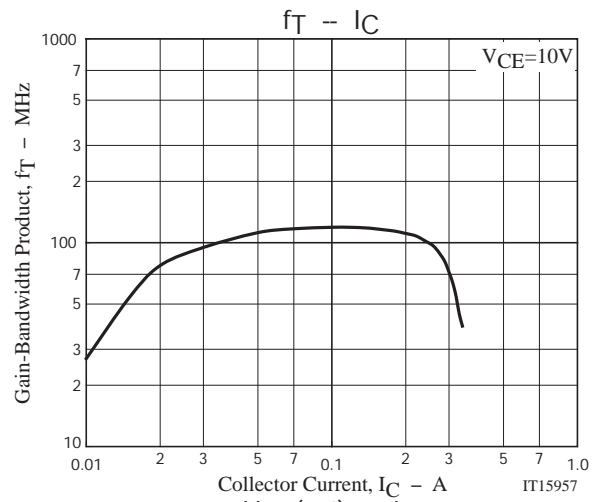
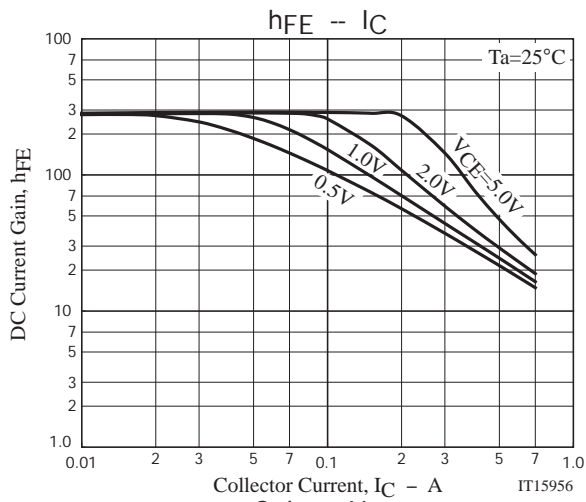
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=100\text{V}, I_E=0\text{A}$			1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0\text{A}$			1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}, I_C=100\text{mA}$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}$		120		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		9		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.35\text{A}, I_B=35\text{mA}$		115	200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.35\text{A}, I_B=35\text{mA}$		0.82	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	220			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	200			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0\text{A}$	8			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		50		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		2		$\mu\text{s}$
Fall Time	$t_f$	See specified Test Circuit.		70		ns

Switching Time Test Circuit



$I_C=10I_B, I_{B1} = -10I_{B2}=0.3\text{A}$





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