



2SC6096

Bipolar Transistor 100V, 2A, Low $V_{CE(sat)}$, NPN Single PCP

ON Semiconductor®

<http://onsemi.com>

Applicaitons

- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter

Features

- Adoption of FBET, MBIT process
- Low collector-to-emitter saturation voltage
- High allowable power dissipation
- Large current capacity
- High-speed switching
- Halogen free compliance

Specifications

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

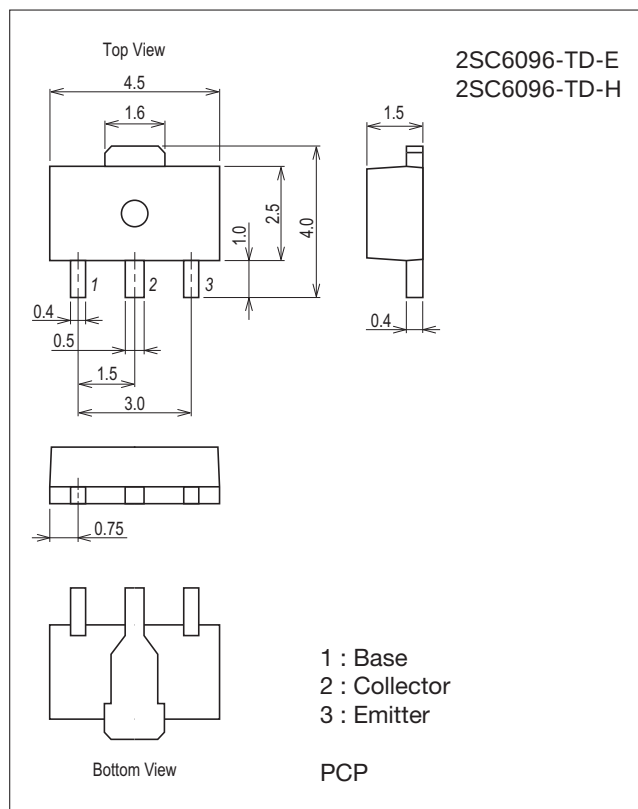
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		120	V
Collector-to-Emitter Voltage	V_{CES}		120	V
	V_{CEO}		100	V
Emitter-to-Base Voltage	V_{EBO}		6.5	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		3	A

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Package Dimensions

unit : mm (typ)

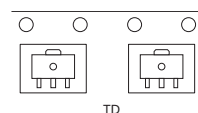
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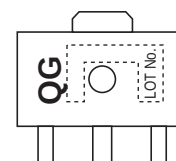
Product & Package Information

- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

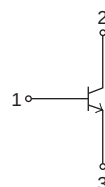
Packing Type: TD



Marking



Electrical Connection



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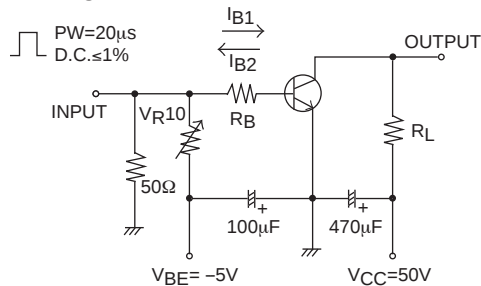
Parameter	Symbol	Conditions	Ratings	Unit
Base Current	I_B		400	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (250mm ² ×0.8mm) $T_C=25^{\circ}\text{C}$	1.3 3.5	W
Junction Temperature	T_j		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=80\text{V}$, $I_E=0\text{A}$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0\text{A}$			1	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=100\text{mA}$	300		600	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=300\text{mA}$		300		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}$, $f=1\text{MHz}$		13		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}$, $I_B=100\text{mA}$		100	150	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1\text{A}$, $I_B=100\text{mA}$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}$, $I_E=0\text{A}$	120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu\text{A}$, $R_{BE}=0\Omega$	120			V
	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $R_{BE}=\infty$	100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$, $I_C=0\text{A}$	6.5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	t_{stg}			1100		ns
Fall Time	t_f			40		ns

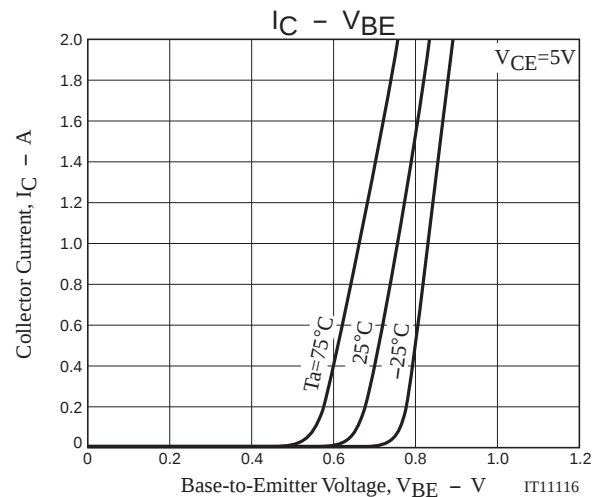
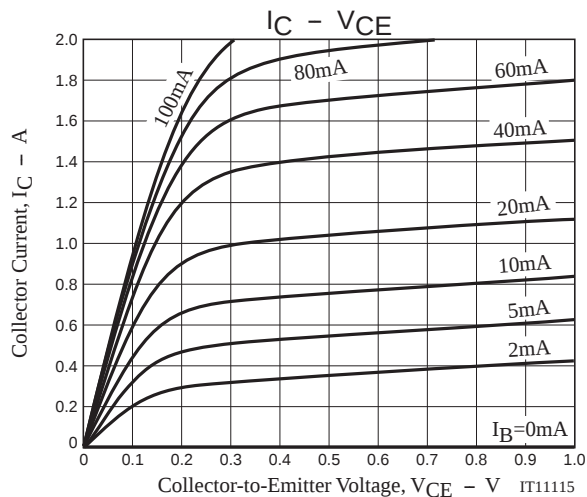
Switching Time Test Circuit

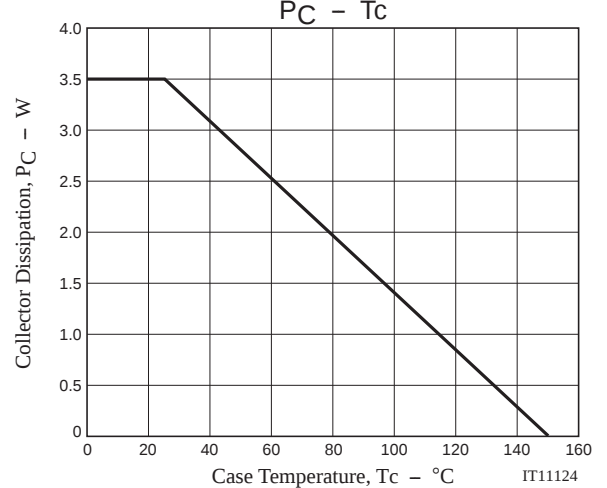
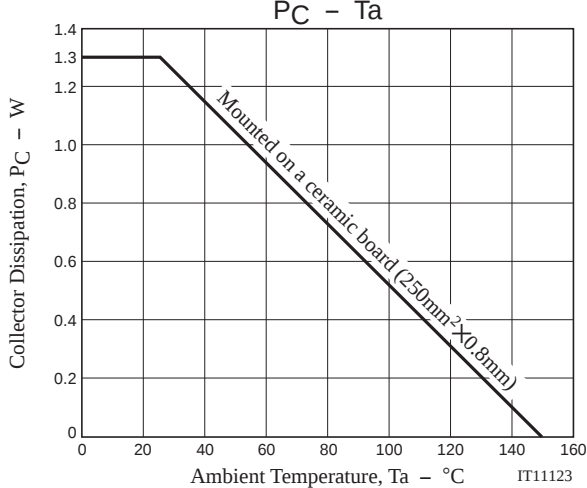
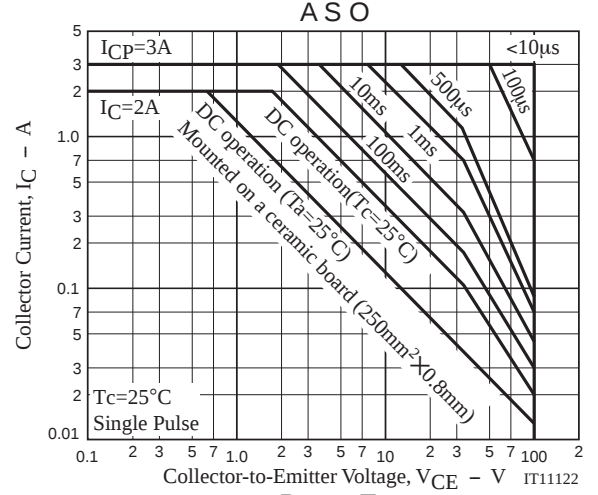
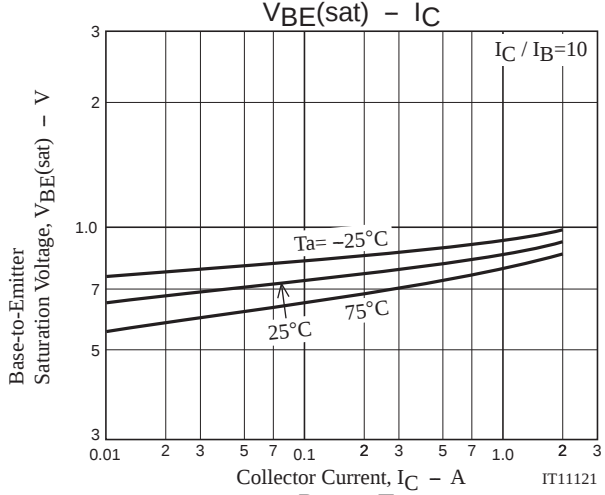
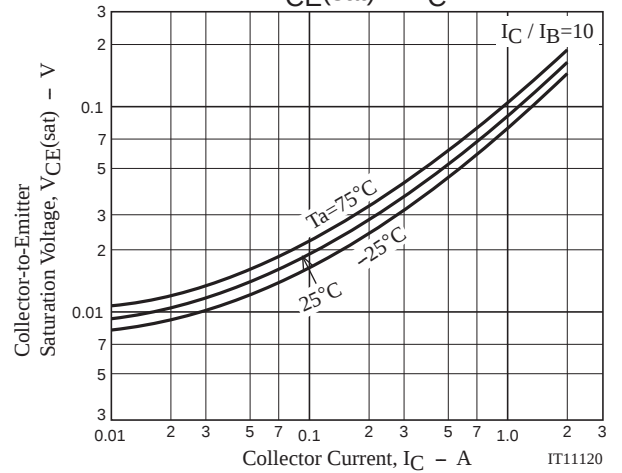
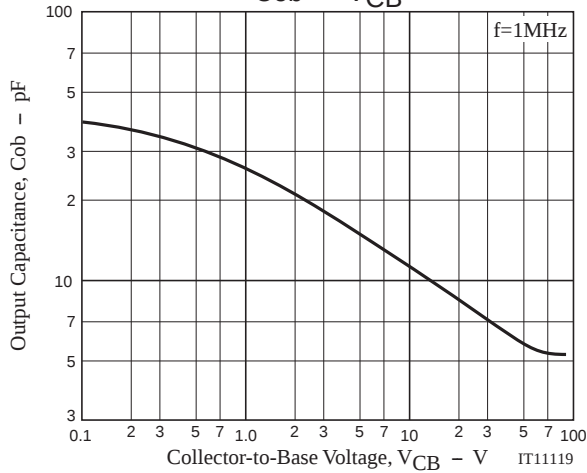
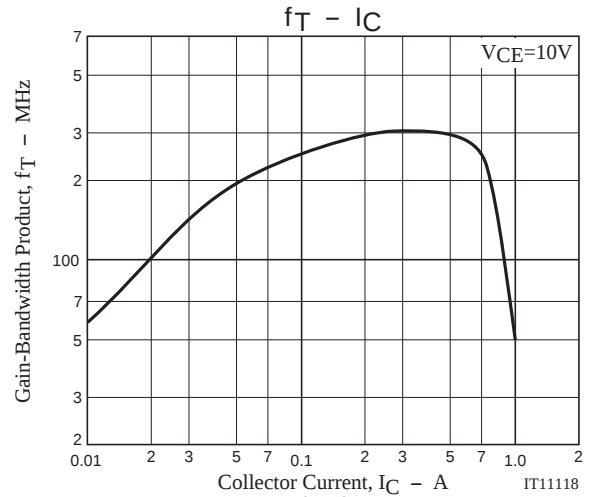
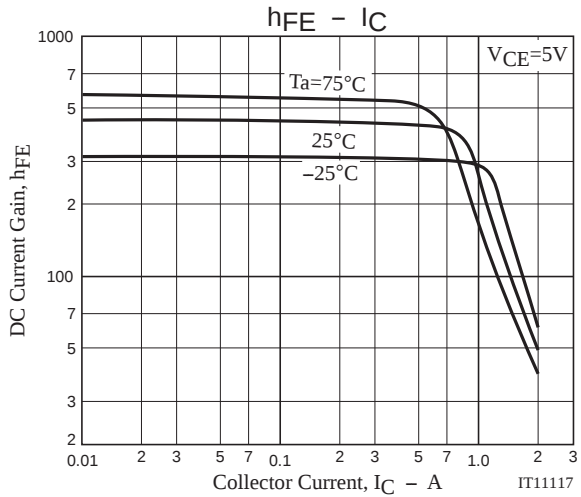


$$I_C=10I_{B1}=-10I_{B2}=0.5\text{A}$$

Ordering Information

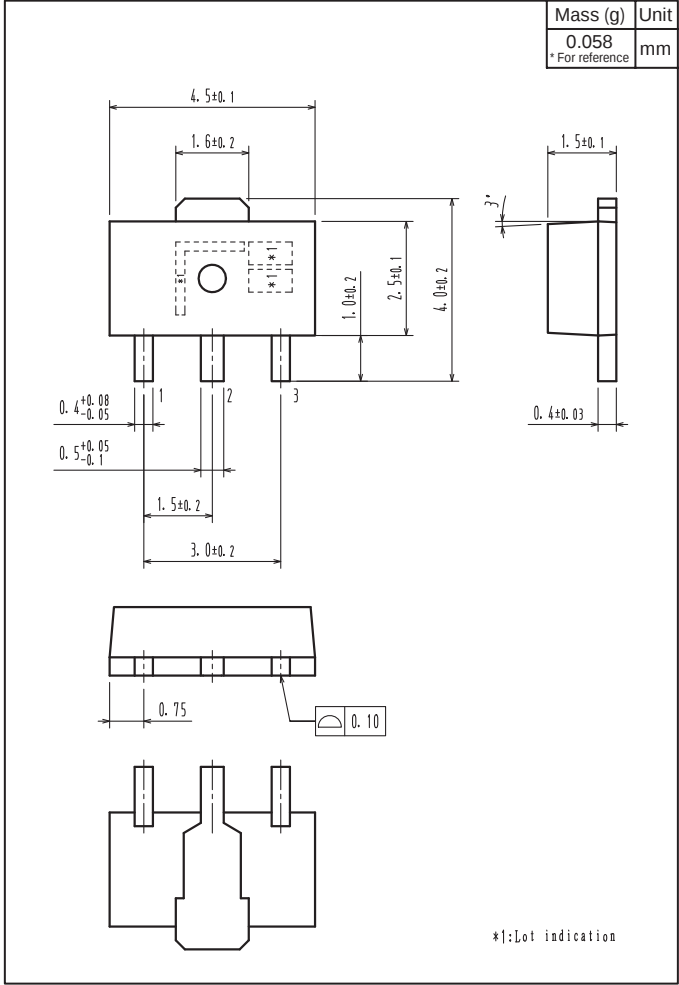
Device	Package	Shipping	memo
2SC6096-TD-E	PCP	1,000pcs./reel	Pb Free
2SC6096-TD-H	PCP	1,000pcs./reel	Pb Free and Halogen Free



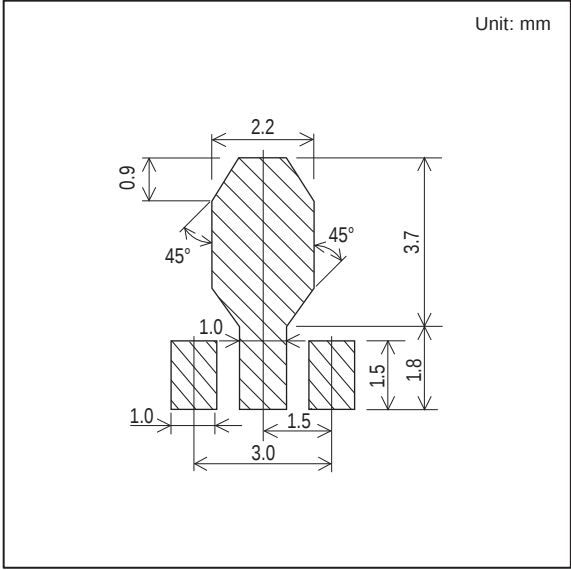


Outline Drawing

2SC6096-TD-E, 2SC6096-TD-H



Land Pattern Example



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