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2SA2202

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

Applicaitons

- DC / DC converters, relay drivers, lamp drivers, motor drivers, flash

Features

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

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CB0}		-100	V
Collector to Emitter Voltage	V_{CES}		-100	V
	V_{CEO}		-100	V
Emitter to Base Voltage	V_{EBO}		-7	V
Collector Current	I_C		-2	A
Collector Current (Pulse)	I_{CP}		-3	A

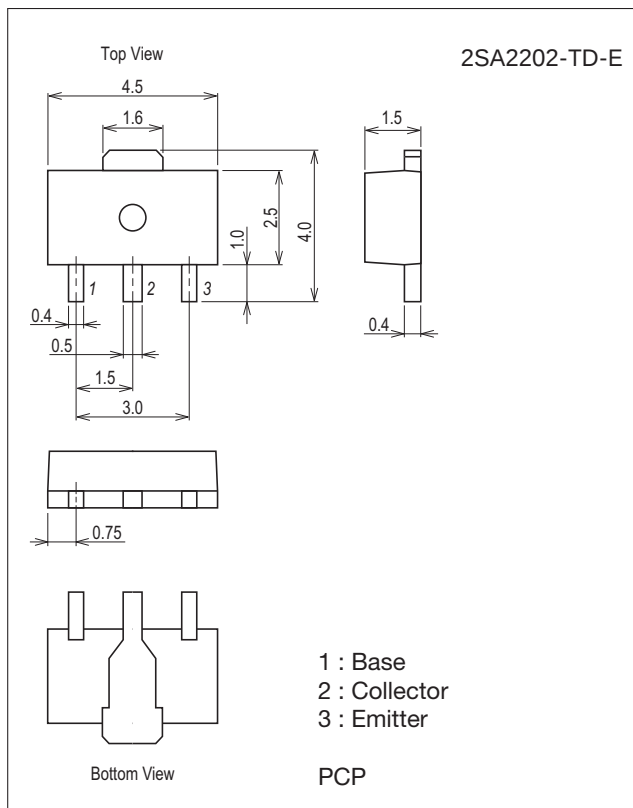
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Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions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

Package Dimensions

unit : mm (typ)

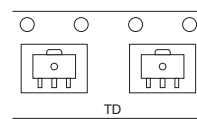
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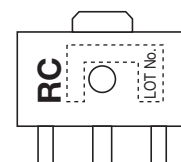
Product & Package Information

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

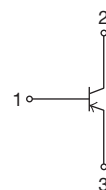
Packing Type: TD



Marking



Electrical Connection



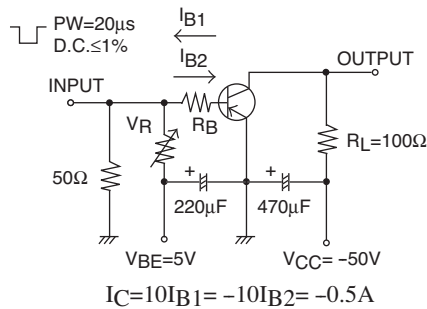
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Parameter	Symbol	Conditions	Ratings	Unit
Base Current	I_B		-400	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (250mm ² ×0.8mm) $T_C=25^{\circ}\text{C}$	1.3 3.5	W
Junction Temperature	T_j		150	$^{\circ}\text{C}$
Storage Temperature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

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

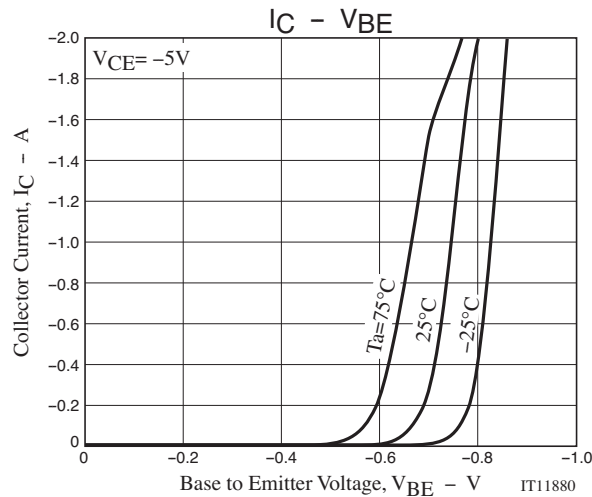
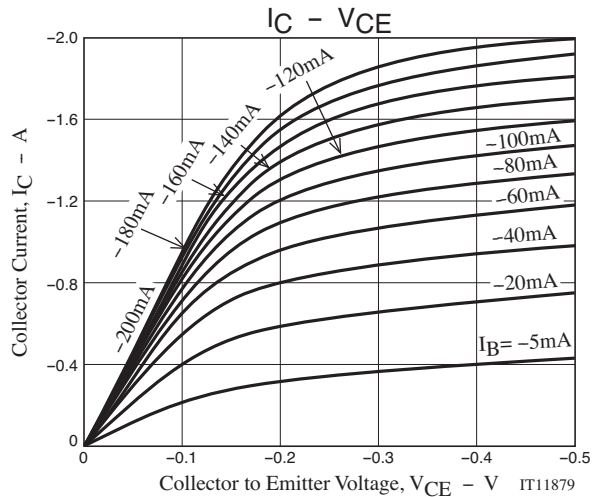
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-80\text{V}$, $I_E=0\text{A}$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}$, $I_C=0\text{A}$			-1	μA
DC Current Gain	h_{FE}	$V_{CE}=-5\text{V}$, $I_C=-100\text{mA}$	200		400	
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}$, $I_C=-500\text{mA}$		300		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$		23		pF
Collector to Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=-1\text{A}$, $I_B=-100\text{mA}$		-120	-240	mV
Base to Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C=-1\text{A}$, $I_B=-100\text{mA}$		-0.85	-1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$, $I_E=0\text{A}$	-100			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=-100\mu\text{A}$, $R_{BE}=0\Omega$	-100			V
	$V_{(BR)CEO}$	$I_C=-1\text{mA}$, $R_{BE}=\infty$	-100			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}$, $I_C=0\text{A}$	-7			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	t_{stg}			600		ns
Fall Time	t_f			30		ns

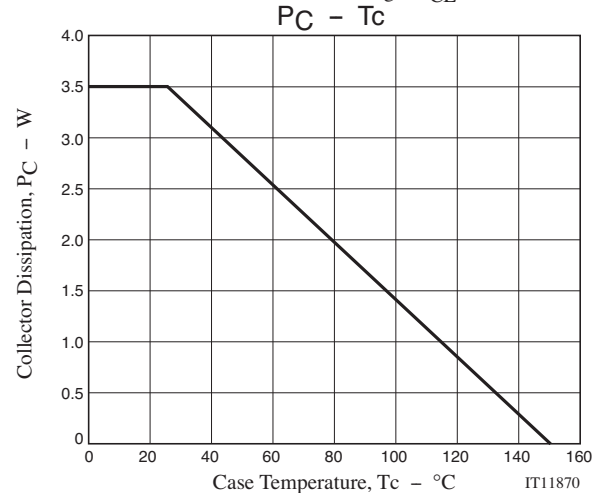
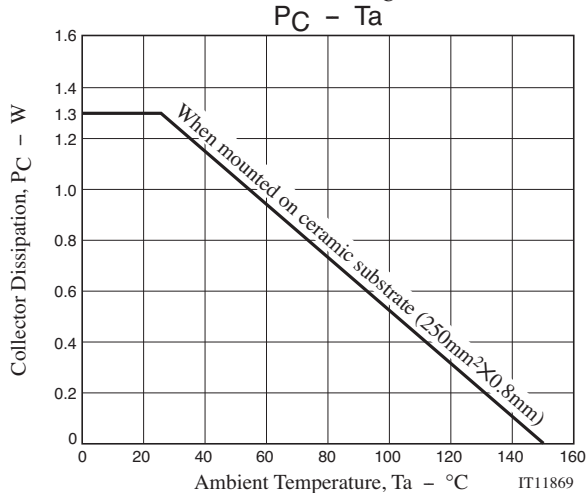
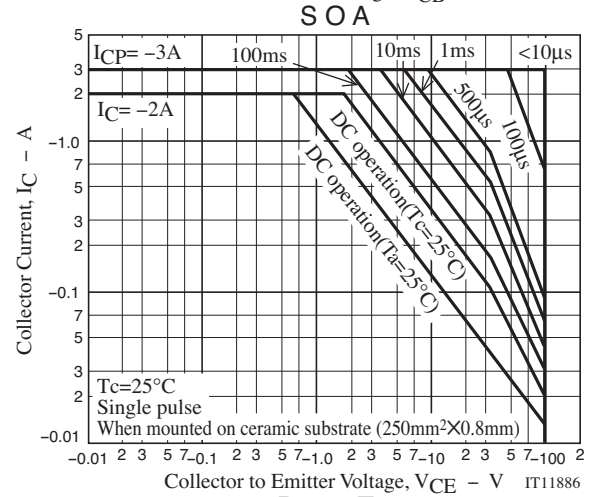
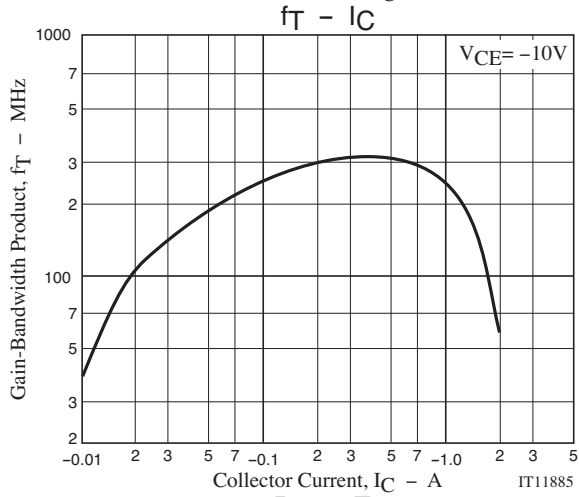
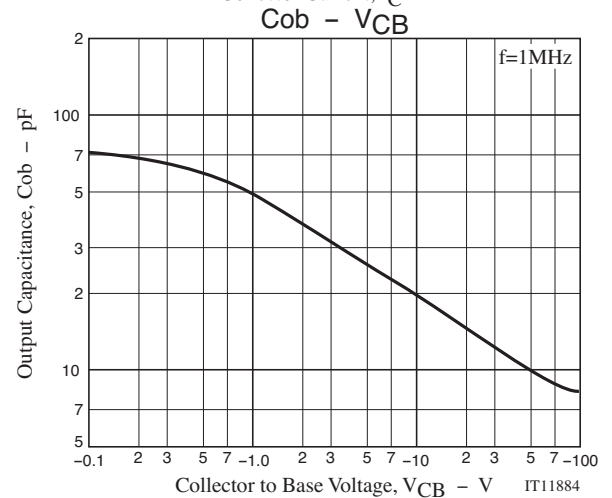
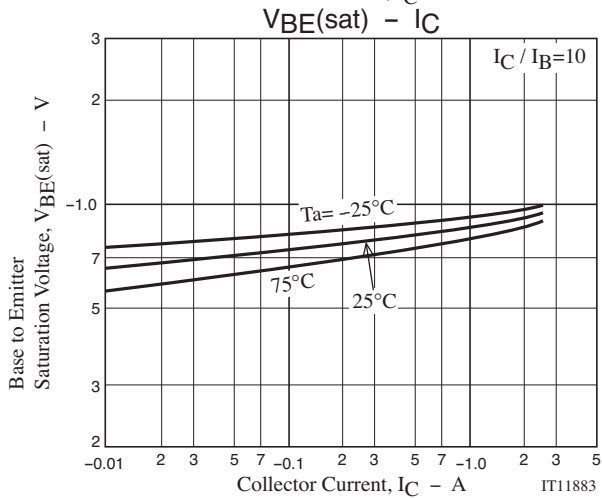
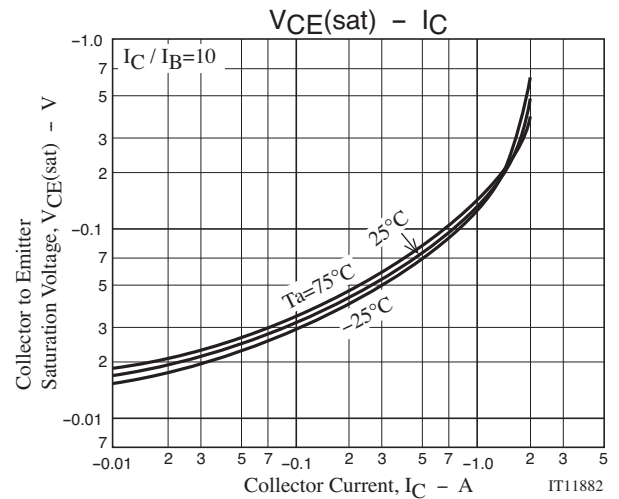
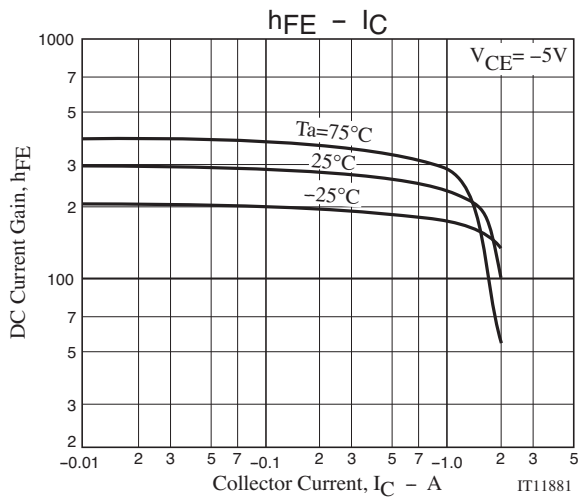
Switching Time Test Circuit



Ordering Information

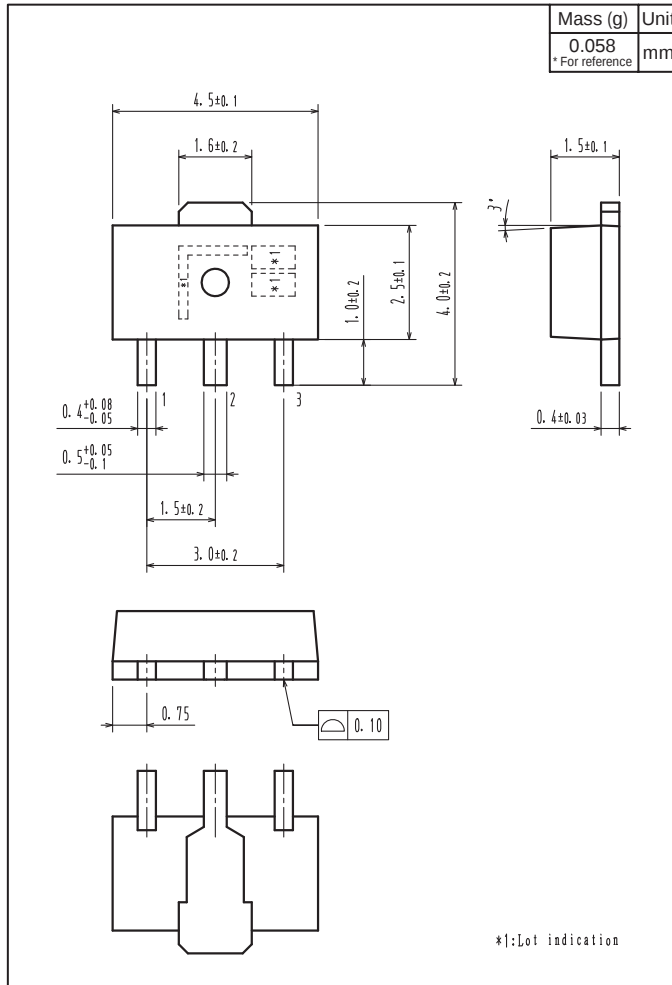
Device	Package	Shipping	memo
2SA2202-TD-E	PCP	1,000pcs./reel	Pb Free



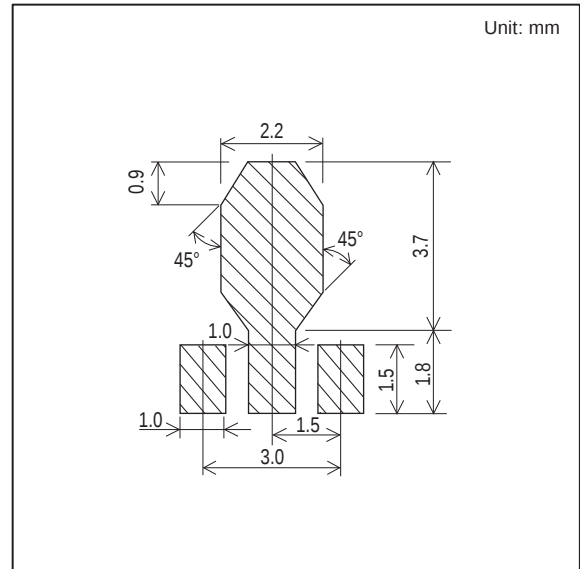


Outline Drawing

2SA2202-TD-E



Land Pattern Example



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