Ordering number : ENA0583A

2SA2202

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

ON Semiconductor®
http://onsemi.com

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

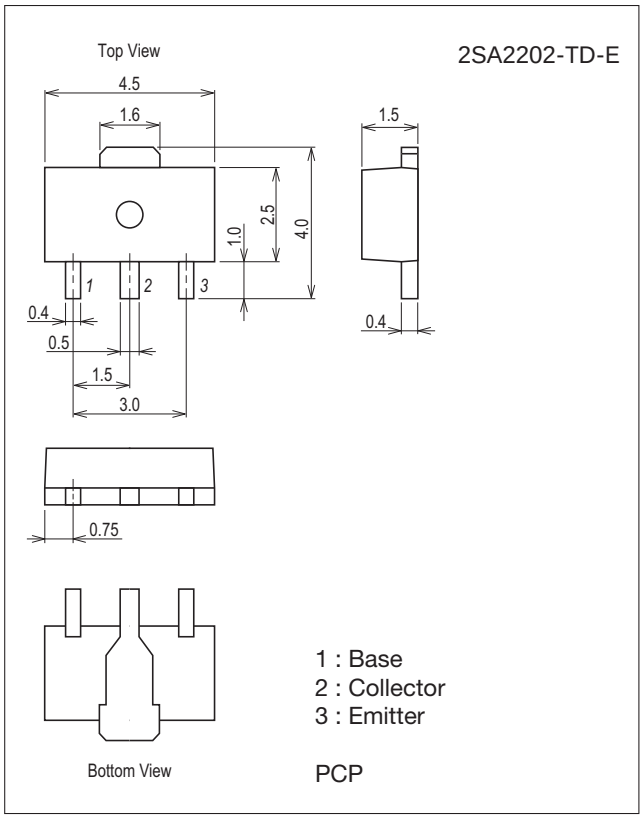
Specifications
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		−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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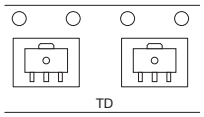
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions
unit : mm (typ)
7007B-004

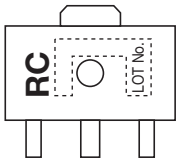


Product & Package Information
- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

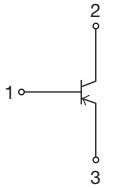
Packing Type: TD



Marking



Electrical Connection



Semiconductor Components Industries, LLC, 2014

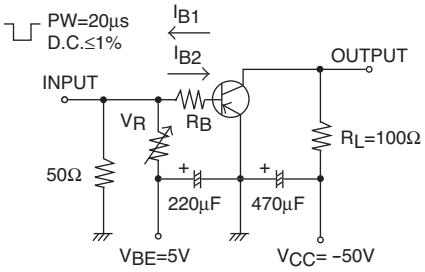
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Parameter	Symbol	Conditions	Ratings	Unit
Base Current	I_B		−400	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (250mm^2×0.8mm)	1.3	W
		Tc=25°C	3.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=−80V, I_E=0A			−1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=−4V, I_C=0A			−1	μA
DC Current Gain	h_{FE}	V_{CE}=−5V, I_C=−100mA	200		400	
Gain-Bandwidth Product	f_T	V_{CE}=−10V, I_C=−500mA		300		MHz
Output Capacitance	Cob	V_{CB}=−10V, f=1MHz		23		pF
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C=−1A, I_B=−100mA		−120	−240	mV
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_C=−1A, I_B=−100mA		−0.85	−1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=−10μA, I_E=0A	−100			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=−100μA, R_{BE}=0Ω	−100			V
	$V_{(BR)CEO}$	I_C=−1mA, R_{BE}=∞	−100			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=−10μA, I_C=0A	−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

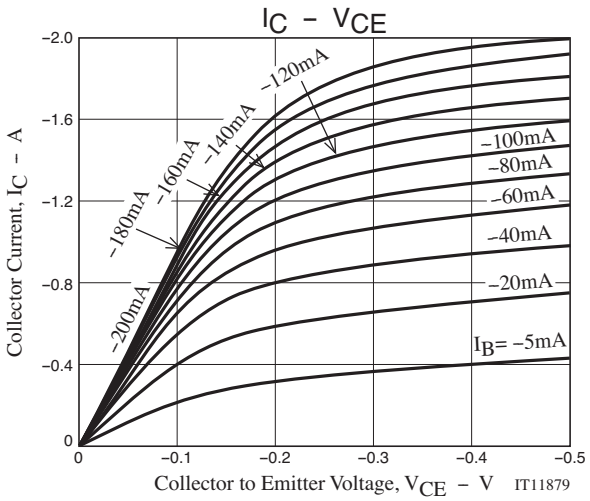
Switching Time Test Circuit

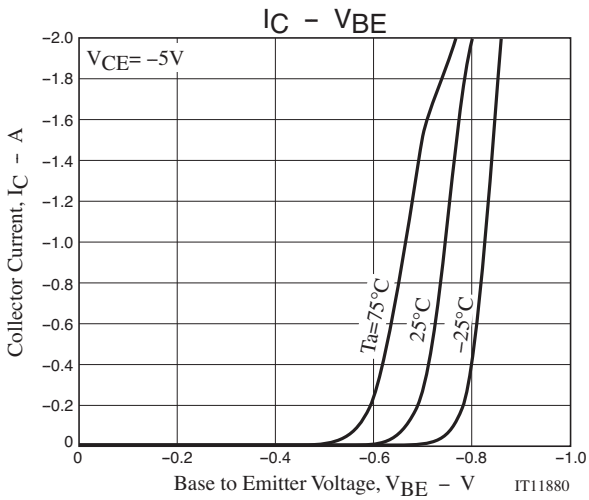


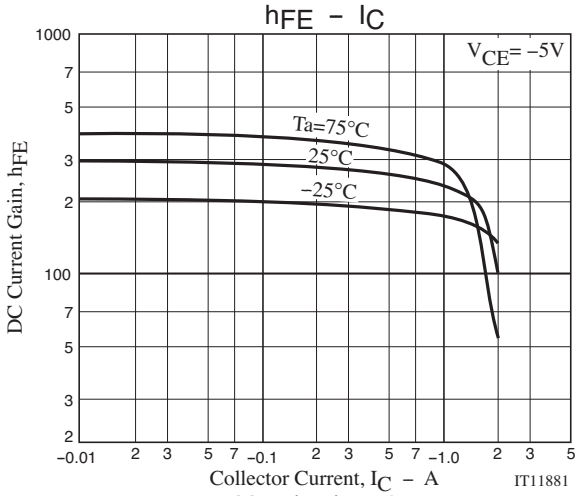
I_C=10I_{B1}= −10I_{B2}= −0.5A

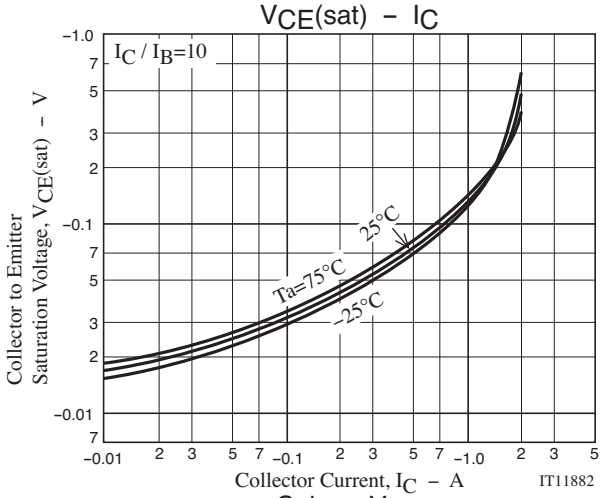
Ordering Information

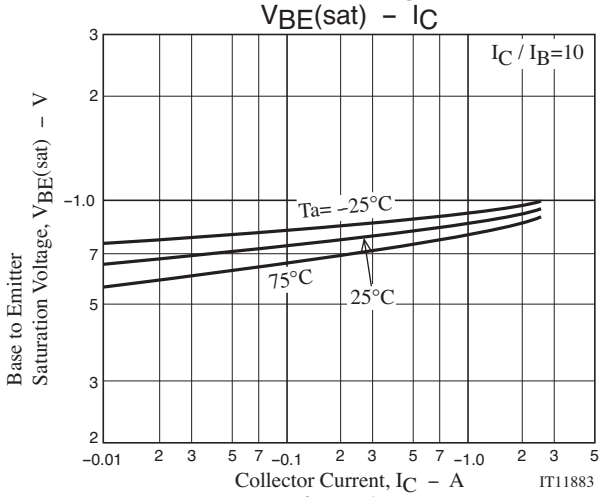
Device	Package	Shipping	memo
2SA2202-TD-E	PCP	1,000pcs./reel	Pb Free

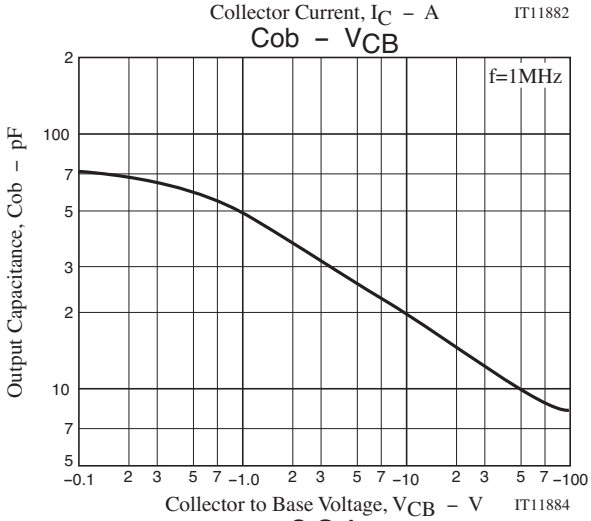


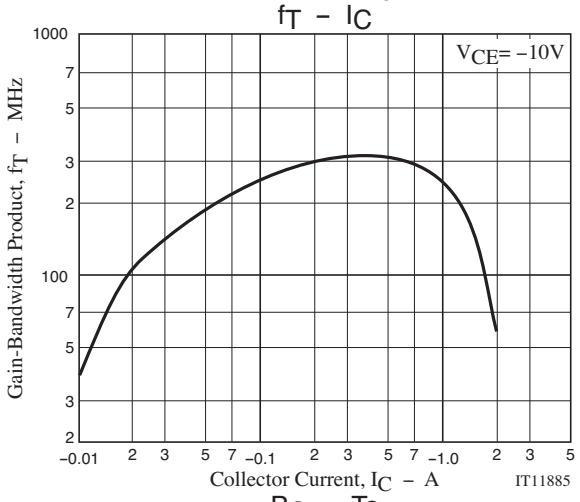


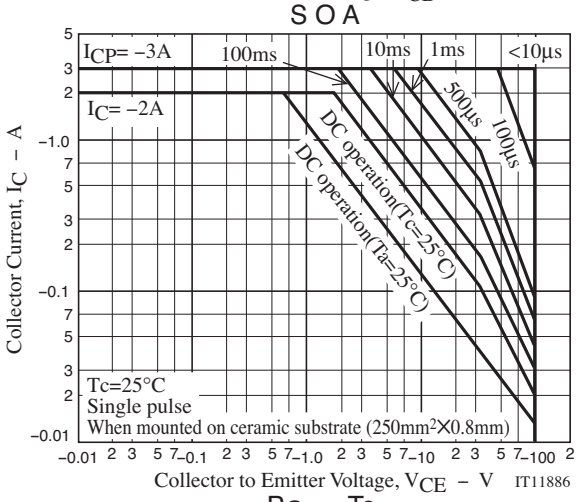

hFE – IC
VCE= –5V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – A
IT11881

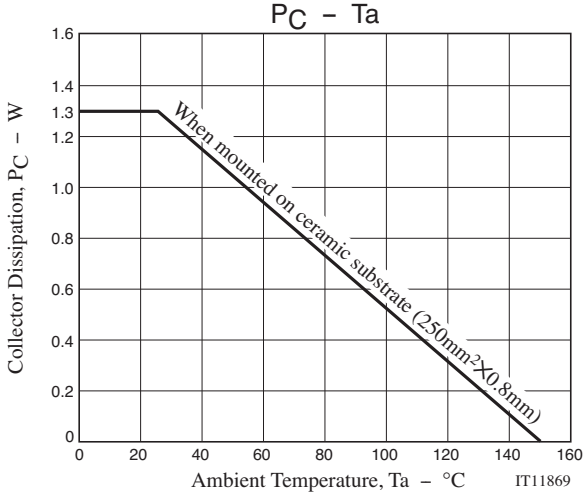

VCE(sat) – IC
IC / IB=10
25°C
Ta=75°C
–25°C
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT11882

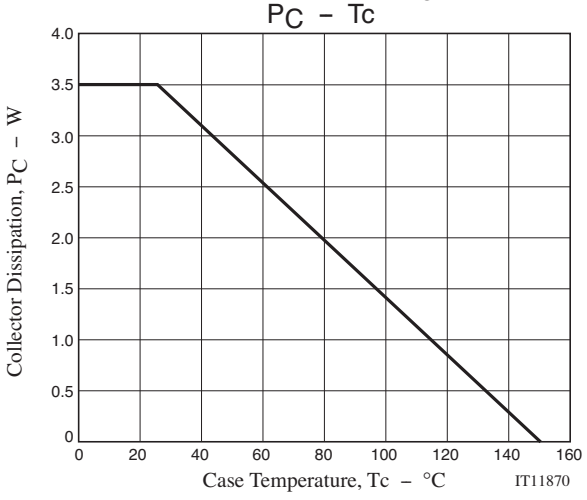

VBE(sat) – IC
IC / IB=10
Ta= –25°C
75°C
25°C
Base to Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT11883


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V
IT11884


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT11885

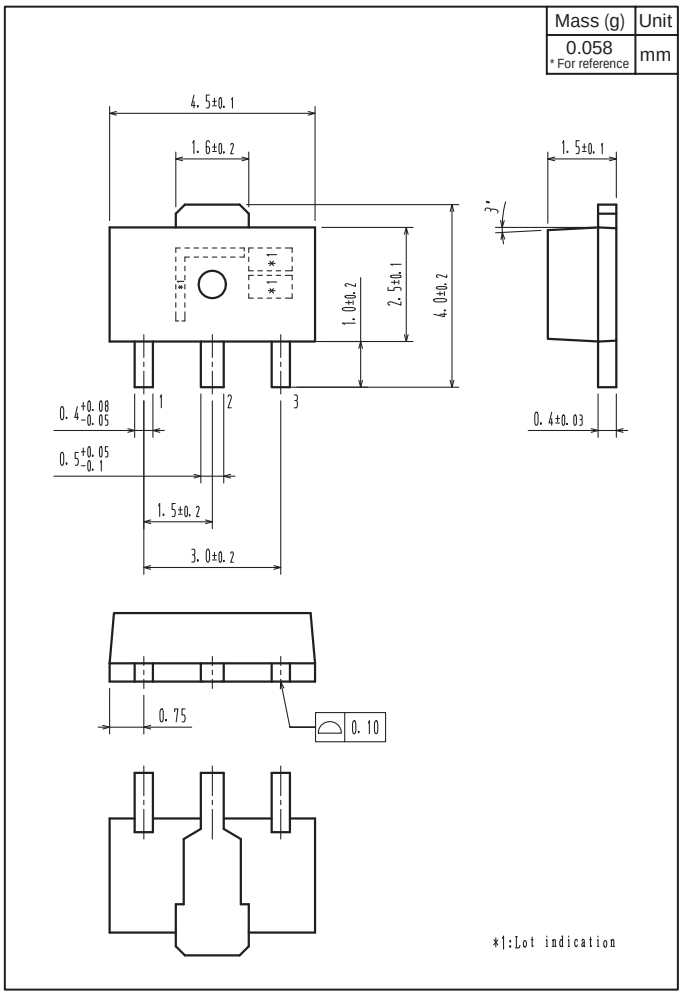

S O A
ICP= –3A
100ms
10ms
1ms
<10µs
IC= –2A
500µs
100µs
DC operation(Tc=25°C)
DC operation(Ta=25°C)
Tc=25°C
Single pulse
When mounted on ceramic substrate (250mm2×0.8mm)
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V
IT11886


PC – Ta
When mounted on ceramic substrate (250mm2×0.8mm)
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT11869

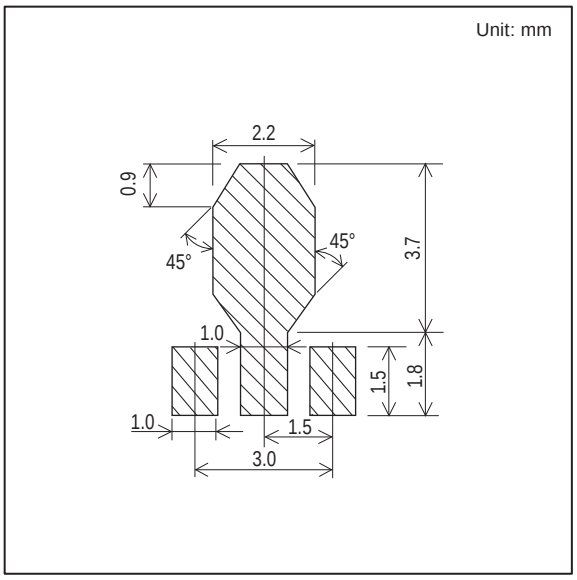

PC – Tc
Collector Dissipation, PC – W
Case Temperature, Tc – °C
IT11870

Outline Drawing

2SA2202-TD-E



Land Pattern Example



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