



2SA2012

Bipolar Transistor -30V, -5A, Low VCE(sat) PNP Single PCP

ON Semiconductor®

<http://onsemi.com>

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- Low collector to emitter saturation voltage
- Ultrasmall-sized package permitting applied sets to be made small and slim
- High allowable power dissipation
- Large current capacity

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	VCBO		-30	V
Collector to Emitter Voltage	VCEO		-30	V
Emitter to Base Voltage	VEBO		-5	V
Collector Current	IC		-5	A
Collector Current (Pulse)	ICP		-8	A

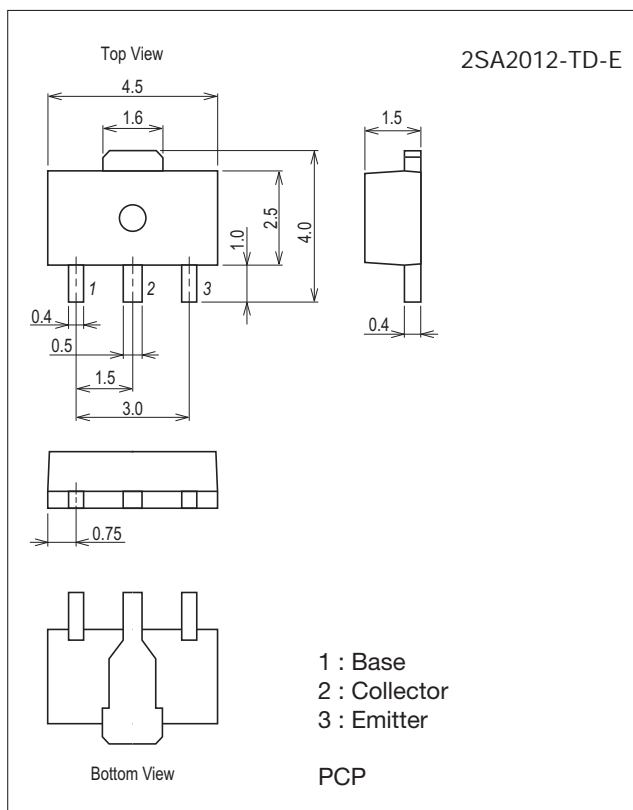
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Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions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

Package Dimensions

unit : mm (typ)

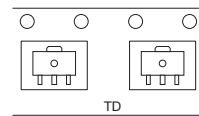
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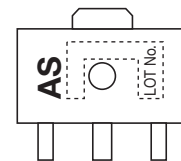
Product & Package Information

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

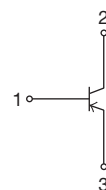
Packing Type: TD



Marking



Electrical Connection



2SA2012

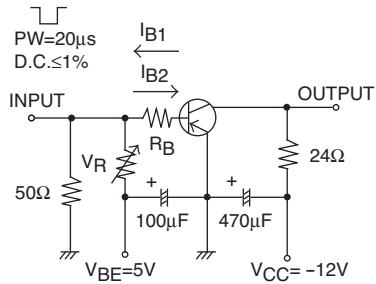
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Parameter	Symbol	Conditions	Ratings	Unit
Base Current	I_B		-600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (250mm ² ×0.8mm)	1.3	W
		$T_C=25^\circ\text{C}$	3.5	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	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}	$V_{CB}=-30\text{V}, I_E=0\text{A}$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0\text{A}$			-0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=-500\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-500\text{mA}$		350		MHz
Output Capacitance	C_{ob}	$V_{CB}(-)10\text{V}, f=1\text{MHz}$		30		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=-1.5\text{A}, I_B=-30\text{mA}$		-140	-210	mV
	$V_{CE(sat)2}$	$I_C=-2.5\text{A}, I_B=-125\text{mA}$		-170	-260	mV
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1.5\text{A}, I_B=-30\text{mA}$		-0.83	-1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0\text{A}$	-30			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-30			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0\text{A}$	-5			V
Turn-ON Time	t_{on}			50		ns
Storage Time	t_{stg}	See specified Test Circuit.		270		ns
Fall Time	t_f			25		ns

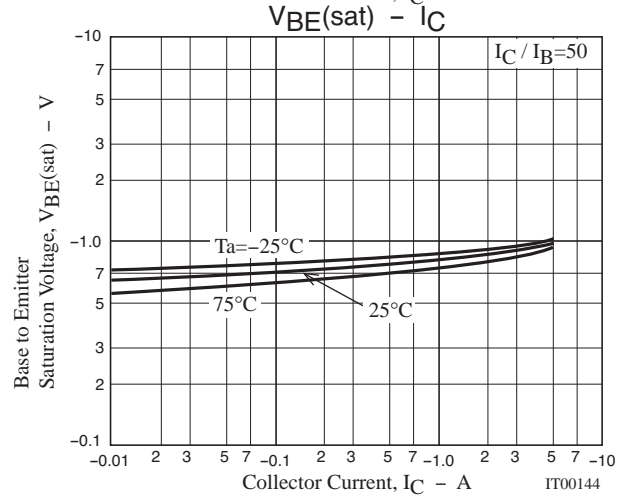
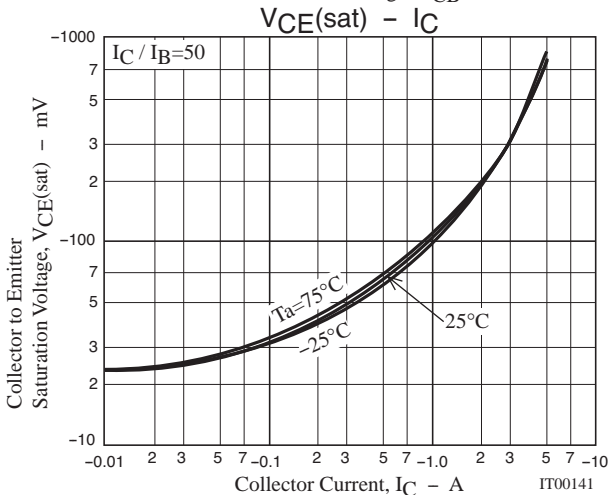
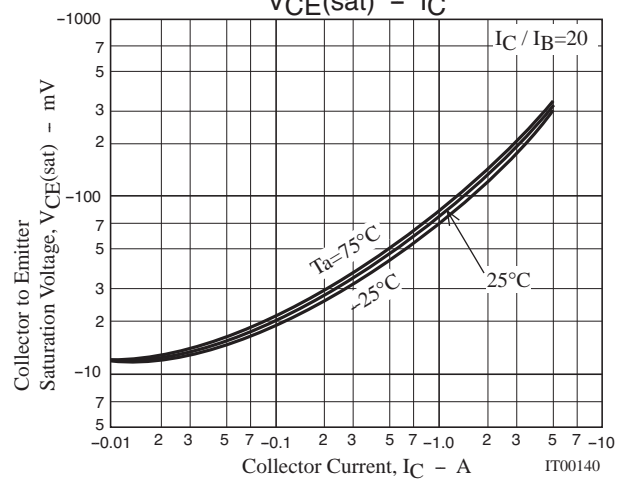
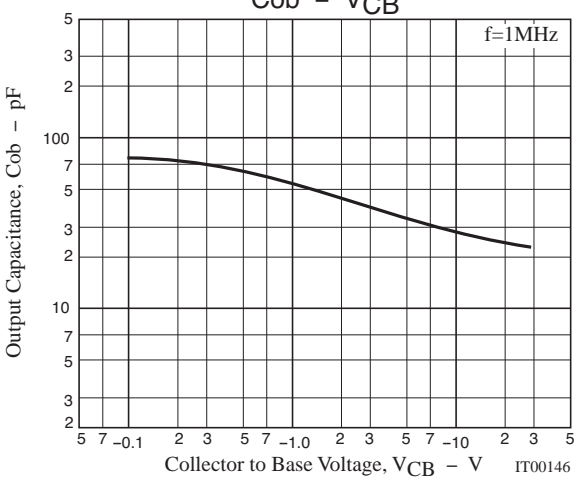
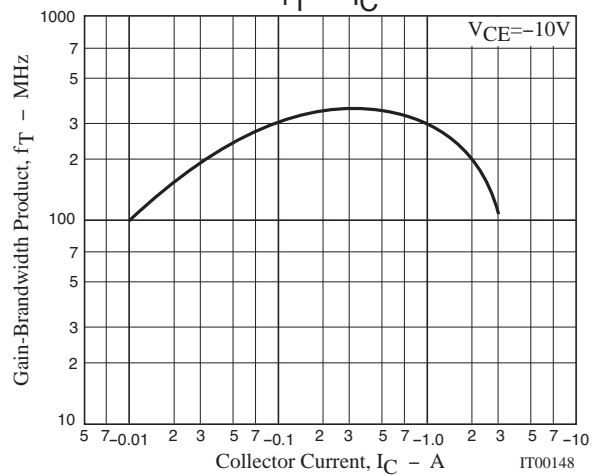
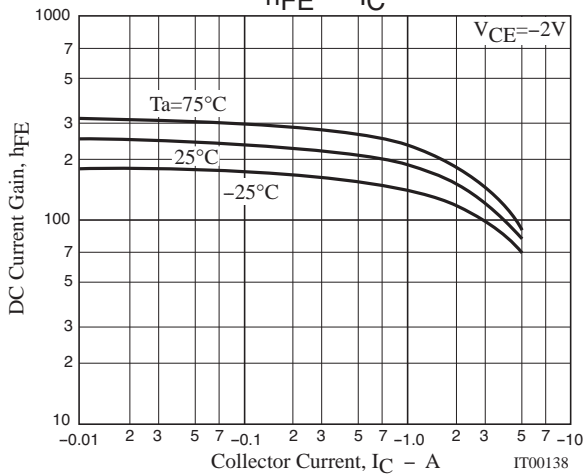
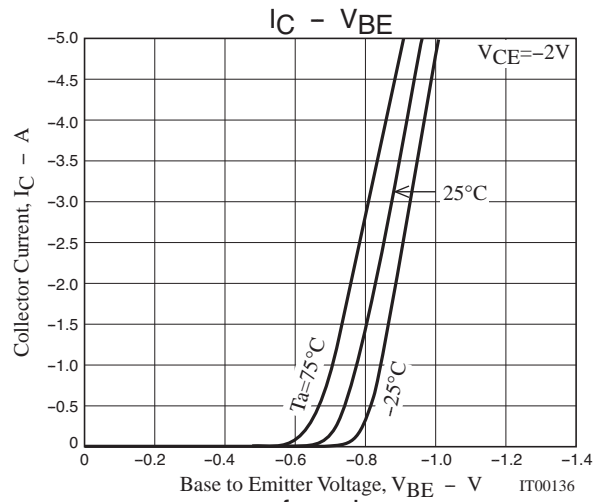
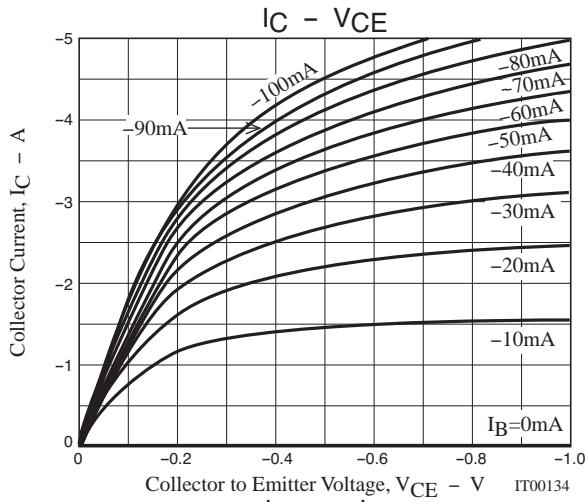
Switching Time Test Circuit

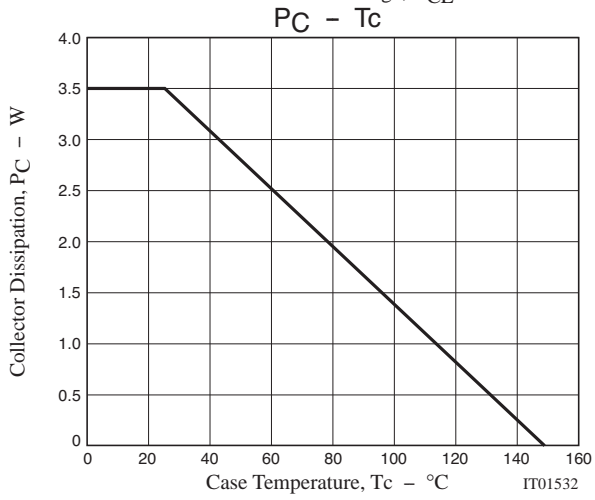
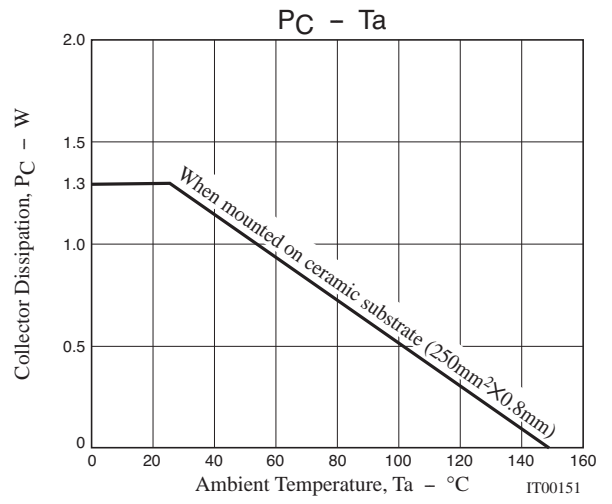
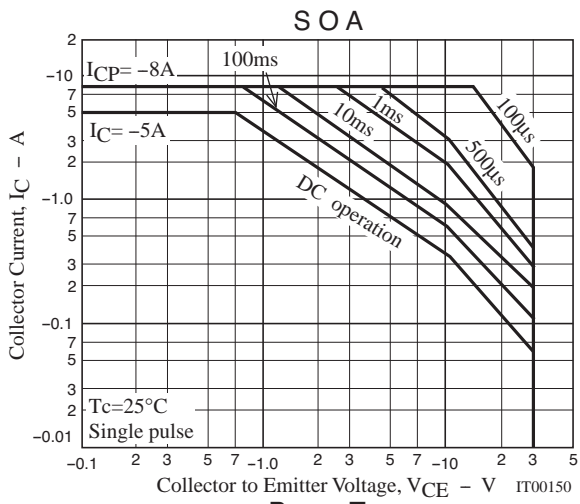


$$I_C=20I_{B1} = -20I_{B2} = -500\text{mA}$$

Ordering Information

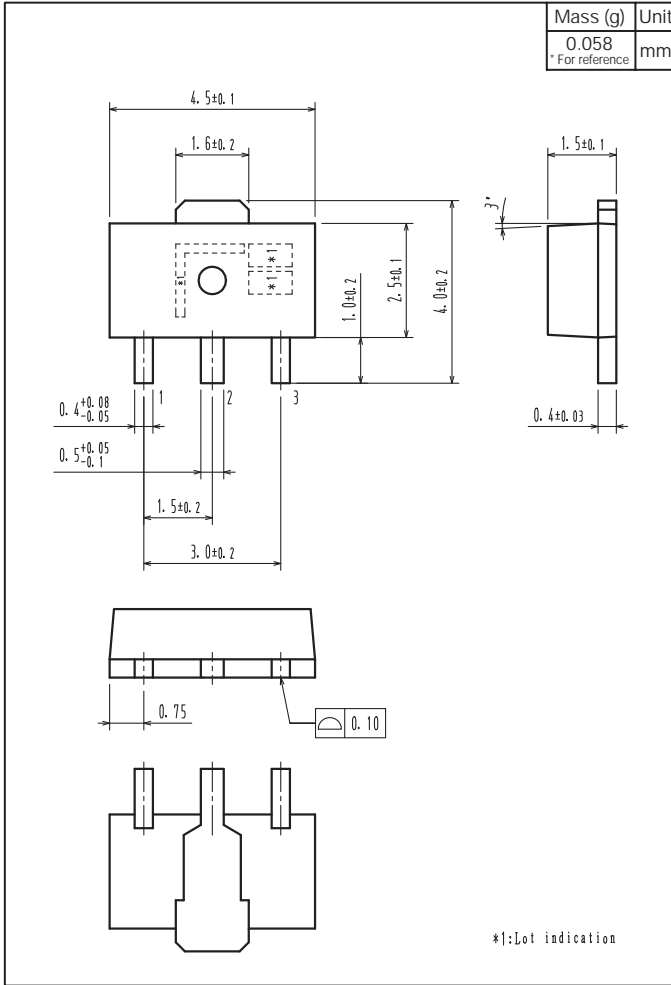
Device	Package	Shipping	memo
2SA2012-TD-E	PCP	1,000pcs./reel	Pb Free



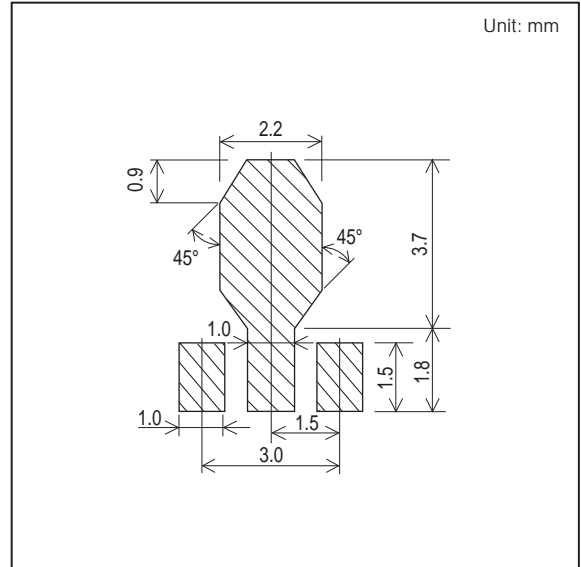


Outline Drawing

2SA2012-TD-E



Land Pattern Example



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