

## Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C Unless Otherwise Specified

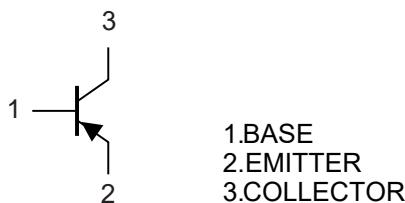
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 500°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-120	V
Collector-Emitter Voltage	$V_{CEO}$	-100	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Continuous Collector Current	$I_C$	-1	A
Power Dissipation	$P_D$	250	mW

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

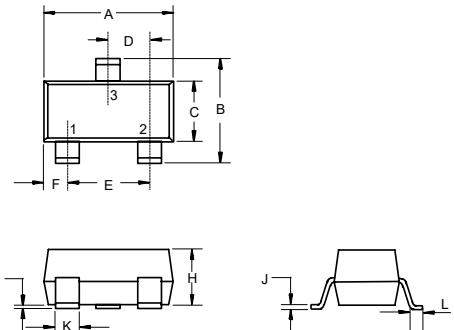
## Marking: 593

## Internal Structure



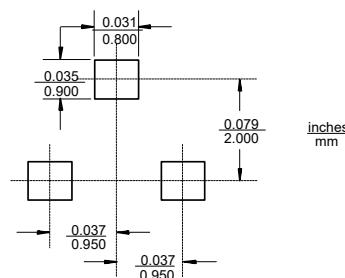
# PNP Plastic-Encapsulate Transistor

## SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

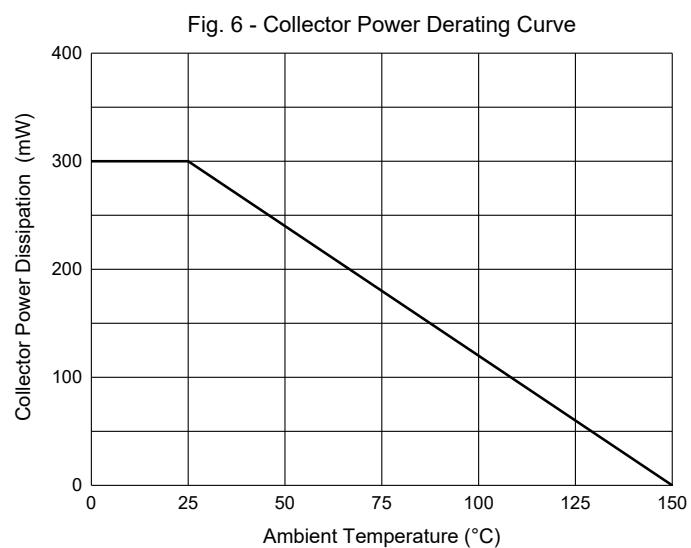
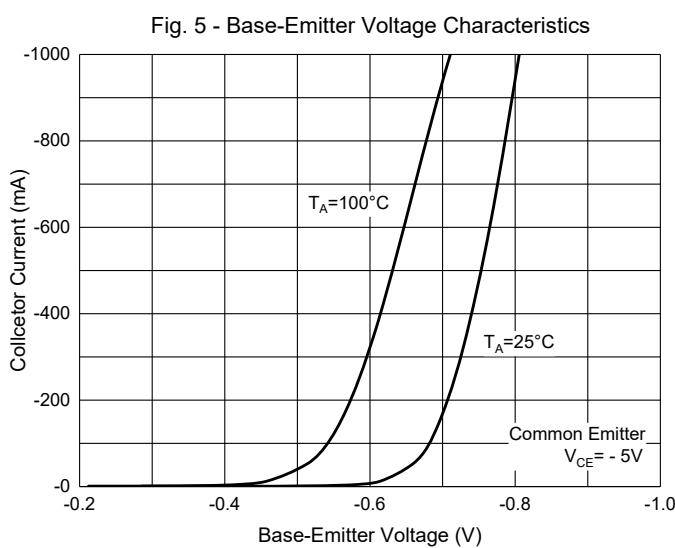
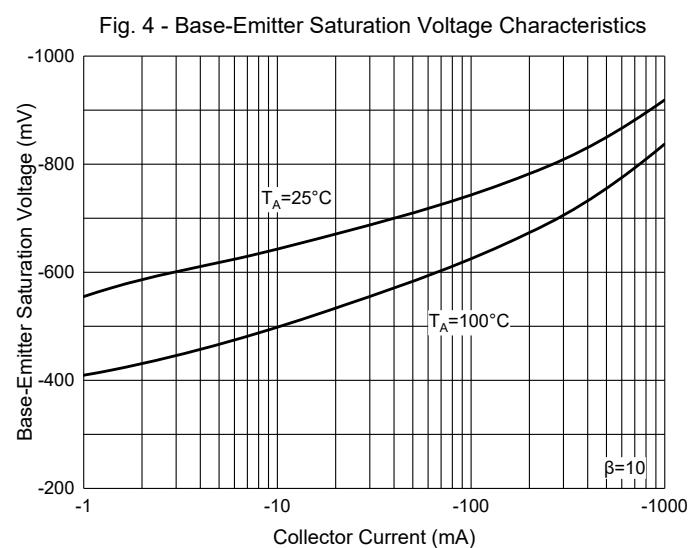
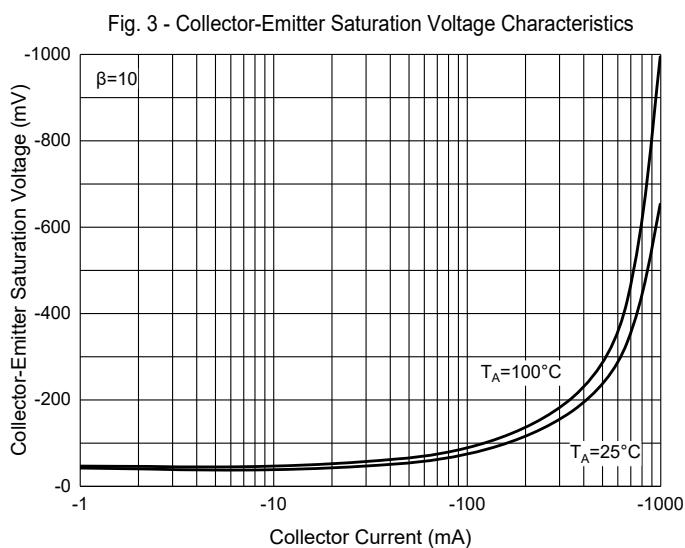
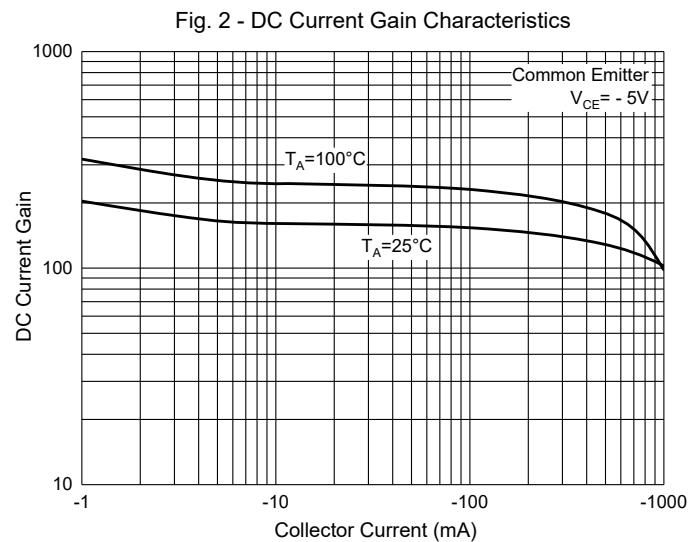
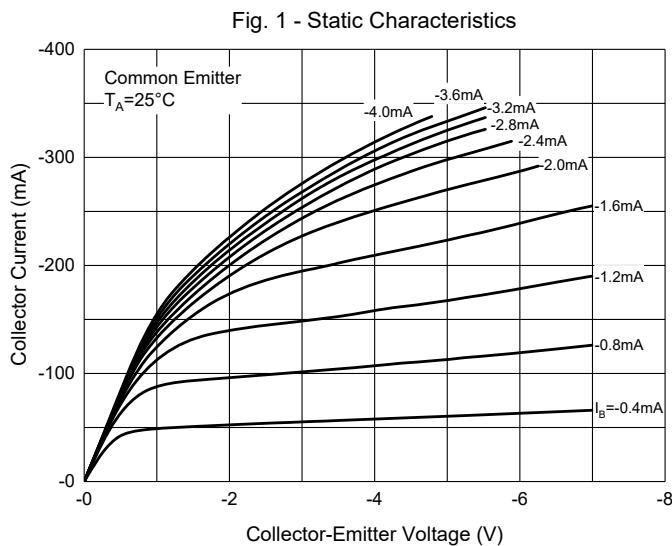
## Suggested Solder Pad Layout



**Electrical Characteristics @  $T_A=25^\circ\text{C}$  Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(\text{BR})\text{CBO}}$	-120			V	$I_C=-100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(\text{BR})\text{CEO}}$	-100			V	$I_C=-10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(\text{BR})\text{EBO}}$	-5			V	$I_E=-100\mu\text{A}, I_C=0$
Collector-Base Cutoff Current	$I_{\text{CBO}}$			-0.1	$\mu\text{A}$	$V_{\text{CB}}=-100\text{V}, I_E=0$
Emitter-Base Cutoff Current	$I_{\text{EBO}}$			-0.1	$\mu\text{A}$	$V_{\text{EB}}=-4\text{V}, I_C=0$
DC Current Gain	$h_{\text{FE}(1)}$	100				$V_{\text{CE}}=-5\text{V}, I_C=-1\text{mA}$
	$h_{\text{FE}(2)}$	100				$V_{\text{CE}}=-5\text{V}, I_C=-250\text{mA}$
	$h_{\text{FE}(3)}$	100		300		$V_{\text{CE}}=-5\text{V}, I_C=-0.5\text{A}$
	$h_{\text{FE}(4)}$	50				$V_{\text{CE}}=-5\text{V}, I_C=-1\text{A}$
Collector-Emitter Saturation Voltage	$V_{\text{CE}(\text{sat})}$			-0.2	V	$I_C=-250\text{mA}, I_B=-25\text{mA}$
				-0.3	V	$I_C=-500\text{mA}, I_B=-50\text{mA}$
Base-Emitter Saturation Voltage	$V_{\text{BE}(\text{sat})}$			-1.1	V	$I_C=-500\text{mA}, I_B=-50\text{mA}$
Base-Emitter Voltage	$V_{\text{BE}}$			-1.0	V	$V_{\text{CE}}=-5\text{V}, I_C=-1\text{mA}$
Transition Frequency	$f_T$	150			MHz	$V_{\text{CE}}=-10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$
Output Capacitance	$C_{\text{ob}}$			5	pF	$V_{\text{CB}}=-10\text{V}, I_E=0, f=1\text{MHz}$

## Curve Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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