

## **Features**

- · High Collector Current
- · High Current Gain
- 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

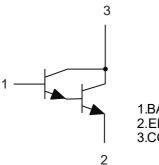
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 417°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CBO</sub>	40	V
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Base Voltage	V <sub>EBO</sub>	10	V
Continuous Collector Current	I <sub>C</sub>	500	mA
Power Dissipation	P <sub>D</sub>	300	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: FF

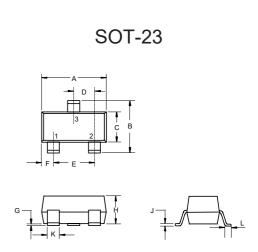
## **Internal Structure**



1.BASE 2.EMITTER 3.COLLECTOR

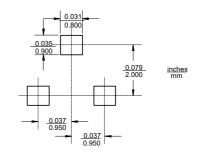
1.BASE

# NPN Surface Mount Darlington Transistor



	DIMENSIONS				
DIM	INCHES		MM		NOTE
DIIVI	MIN	MAX	MIN	MAX	NOTE
Α	0.110	0.120	2.80	3.04	
В	0.083	0.104	2.10	2.64	
С	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	
Н	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°C Unless Otherwise Specified

Parameter	Symbol	Min	Тур	Max	Units	Conditions
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	40			V	I <sub>C</sub> =100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	30			V	I <sub>C</sub> =10mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	10			V	I <sub>E</sub> =10μA, I <sub>C</sub> =0
Collector-Base Cutoff Current	I <sub>CBO</sub>			0.1	μA	V <sub>CB</sub> =30V, I <sub>E</sub> =0
Emitter-Base Cutoff Current	I <sub>EBO</sub>			0.1	μA	$V_{EB}$ =4V, $I_C$ =0
DC Current Gain	h <sub>FE(1)</sub>	4000				$V_{CE}$ =1V, $I_{C}$ =100 $\mu$ A
	h <sub>FE(2)</sub>	10000				V <sub>CE</sub> =5V, I <sub>C</sub> =10mA
	h <sub>FE(3)</sub>	20000				V <sub>CE</sub> =5V, I <sub>C</sub> =100mA
	h <sub>FE(4)</sub>	4000				V <sub>CE</sub> =5V, I <sub>C</sub> =500mA
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			1.0	V	I <sub>C</sub> =100mA, I <sub>B</sub> =100μA
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>			1.5	V	I <sub>C</sub> =100mA, I <sub>B</sub> =100μA
Transition Frequency	f <sub>T</sub>		170		MHz	V <sub>CE</sub> =5V,I <sub>C</sub> =50mA,f=100MHz
Collector Output Capacitance	C <sub>ob</sub>		3.5		pF	V <sub>CB</sub> =10V,I <sub>E</sub> =0,f=1MHz



# **Ordering Information**

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

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