

**Features**

- Ideal for Medium Power Amplification and Switching
- 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**

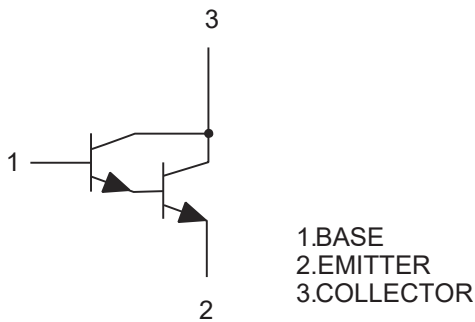
- Operating Junction Temperature Range: -55°C to +150°C
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- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	12	V
Collector Current	$I_C$	500	mA
Power Dissipation	$P_D$	200	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.

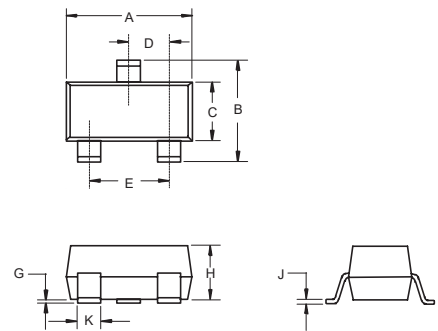
**Marking: 3SS**

**Internal Structure**



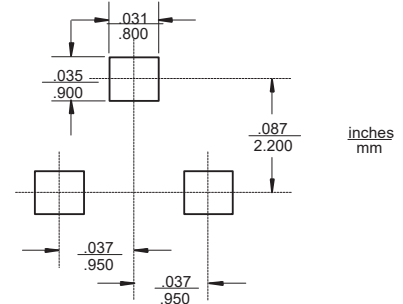
**NPN  
Darlington  
Transistor**

**SOT-23-3L**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.113	0.117	2.87	2.97	
B	0.108	0.112	2.75	2.85	
C	0.061	0.065	1.55	1.65	
D	0.036	0.038	0.914	0.965	
E	0.073	0.077	1.85	1.95	
G	0.0016	0.0039	0.04	0.100	
H	0.041	0.045	1.05	1.15	
J	0.006	0.007	0.14	0.17	
K	0.012	0.020	0.30	0.50	

**Suggested Solder Pad Layout**



**Electrical Characteristics @ T<sub>A</sub>=25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	80			V	I <sub>C</sub> =100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	80			V	I <sub>C</sub> =100μA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	12			V	I <sub>E</sub> =10μA, I <sub>C</sub> =0
Collector Cutoff Current	I <sub>CBO</sub>			100	nA	V <sub>CB</sub> =60V, I <sub>E</sub> =0
Emitter Cutoff Current	I <sub>EBO</sub>			100	nA	V <sub>EB</sub> =10V, I <sub>C</sub> =0
DC Current Gain	h <sub>FE</sub>	10000				V <sub>CE</sub> =5V, I <sub>C</sub> =10mA
		10000				V <sub>CE</sub> =5V, I <sub>C</sub> =100mA
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			1.2	V	I <sub>C</sub> =10mA, I <sub>B</sub> =10μA
				1.5	V	I <sub>C</sub> =100mA, I <sub>B</sub> =100μA
Base-Emitter Voltage	V <sub>BE</sub>			2.00	V	I <sub>C</sub> =100mA, V <sub>CE</sub> =5V
Current Gain-Bandwidth Product	f <sub>T</sub>	125			MHz	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz
Collector output Capacitance	C <sub>ob</sub>			8.0	pF	V <sub>CB</sub> =1V, I <sub>E</sub> =0, f=1MHz,

## Curve Characteristics

Fig. 1 - Static Characteristics

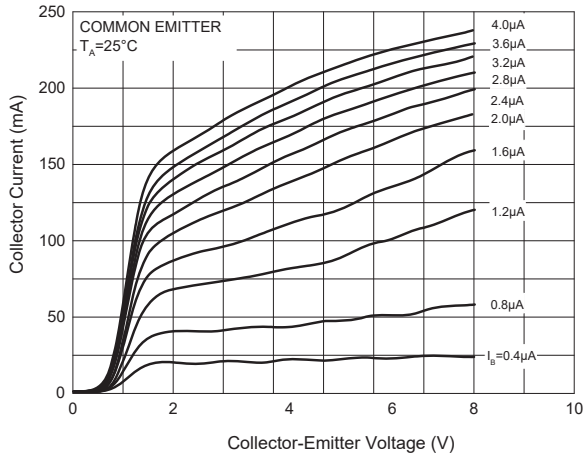


Fig. 2 - DC Current Gain Characteristics

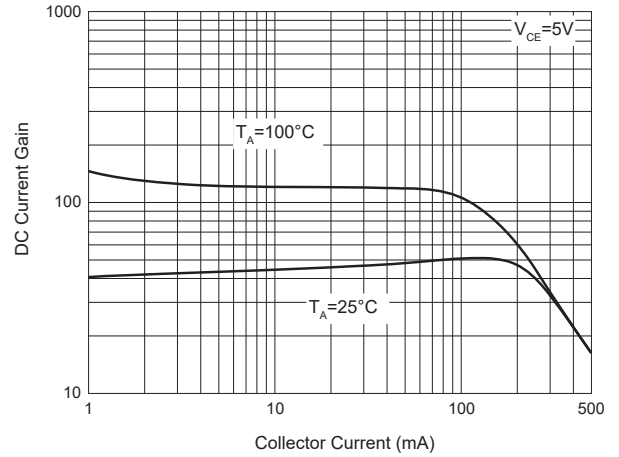


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

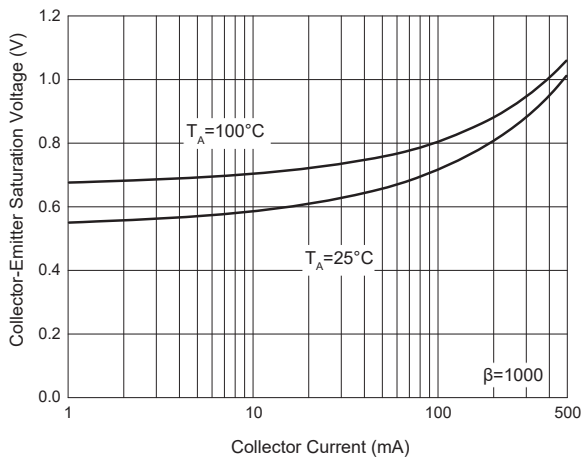


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

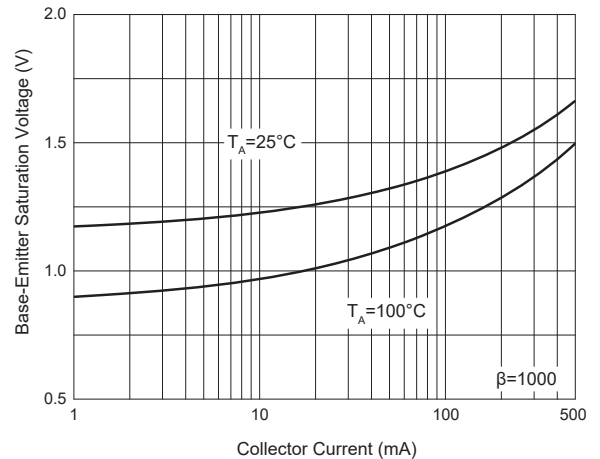


Fig. 5 - Base-Emitter Voltage Characteristics

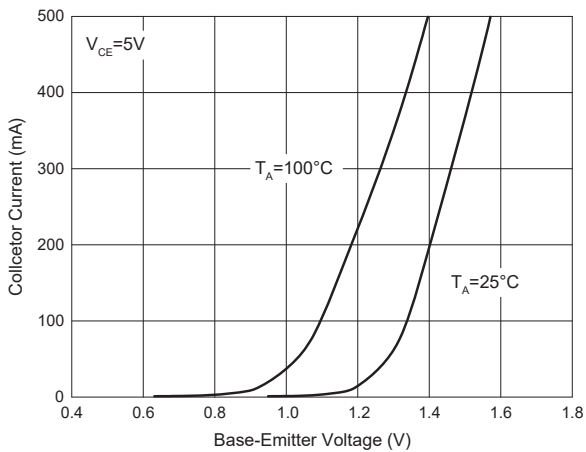
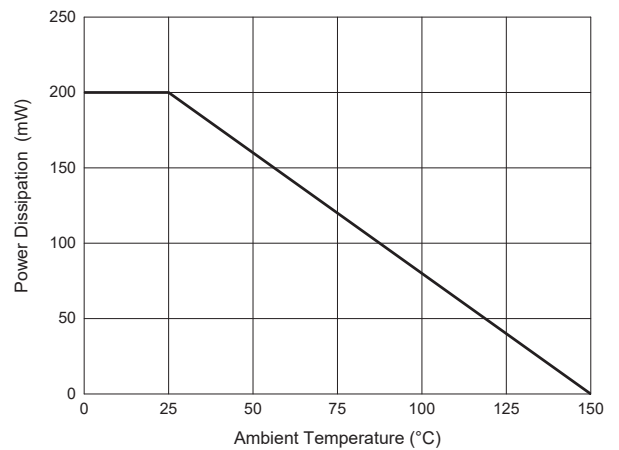


Fig. 6 - Power Derating Curve



## Ordering Information

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

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