

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

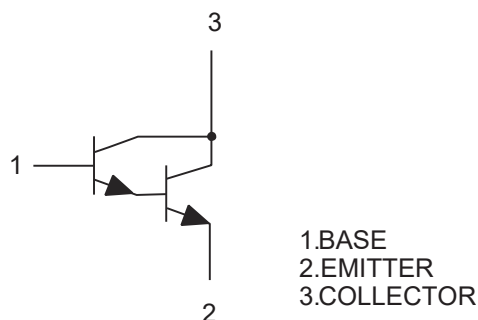
- Operating Junction Temperature Range: -55°C to +150°C
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- Thermal Resistance: 625°C/W Junction to Ambient

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.

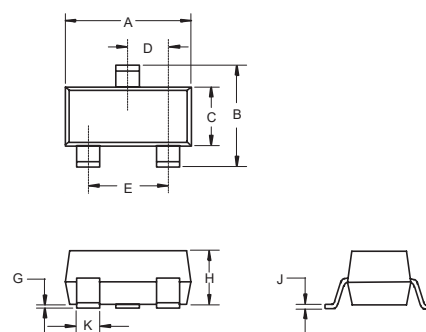
Marking: 3SS

Internal Structure



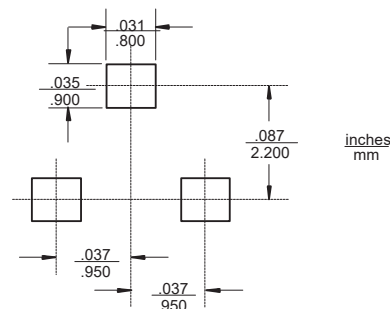
NPN Darlington Transistor

SOT-23-3L



DIM	INCHES		MM		NOTE
	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 @ $T_A=25^{\circ}\text{C}$ Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80			V	$I_C=100\mu\text{A}$, $I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	80			V	$I_C=100\mu\text{A}$, $I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	12			V	$I_E=10\mu\text{A}$, $I_C=0$
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CB}=60\text{V}$, $I_E=0$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB}=10\text{V}$, $I_C=0$
DC Current Gain	h_{FE}	10000				$V_{CE}=5\text{V}$, $I_C=10\text{mA}$
		10000				$V_{CE}=5\text{V}$, $I_C=100\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			1.2	V	$I_C=10\text{mA}$, $I_B=10\mu\text{A}$
				1.5	V	$I_C=100\text{mA}$, $I_B=100\mu\text{A}$
Base-Emitter Voltage	V_{BE}			2.00	V	$I_C=100\text{mA}$, $V_{CE}=5\text{V}$
Current Gain-Bandwidth Product	f_T	125			MHz	$V_{CE}=5\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$
Collector output Capacitance	C_{ob}			8.0	pF	$V_{CB}=1\text{V}$, $I_E=0$, $f=1\text{MHz}$

Curve Characteristics

Fig. 1 - Static Characteristics

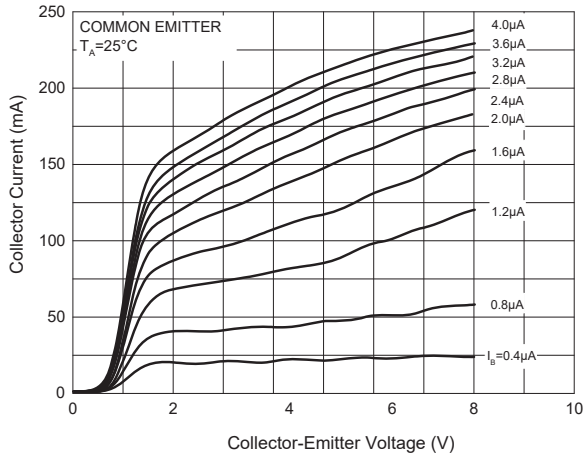


Fig. 2 - DC Current Gain Characteristics

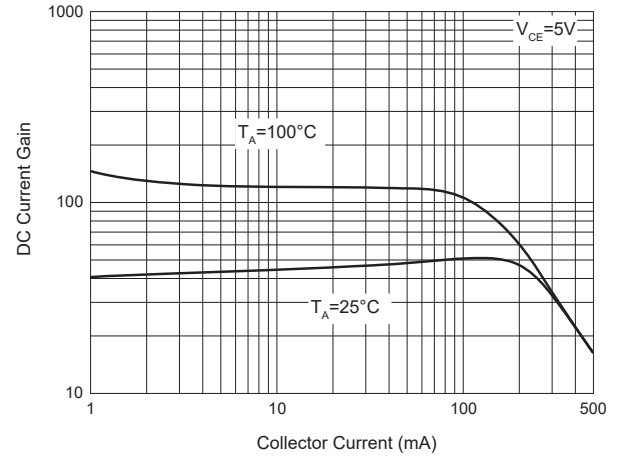


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

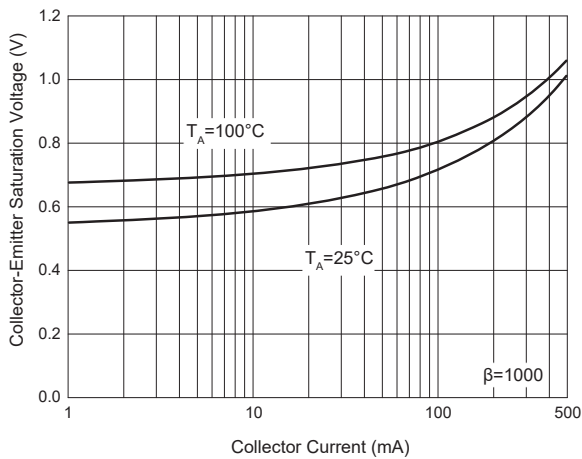


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

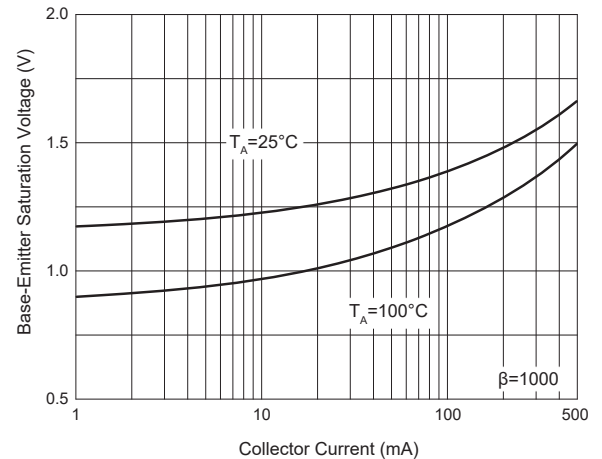


Fig. 5 - Base-Emitter Voltage Characteristics

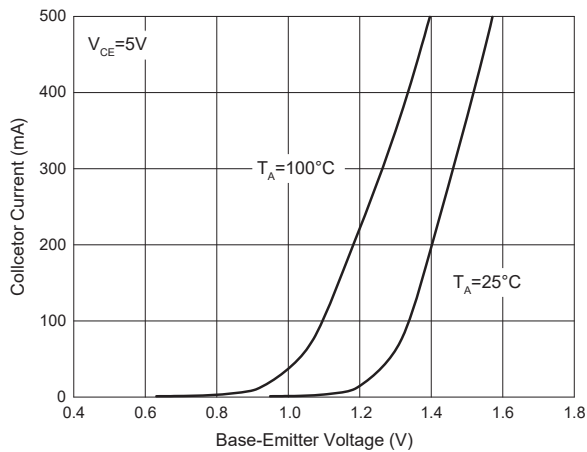
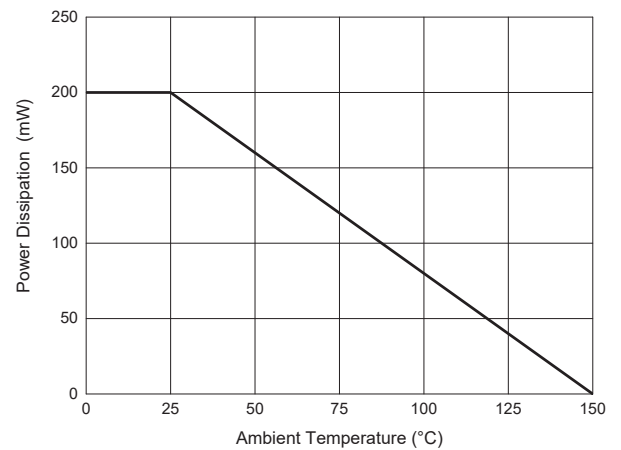


Fig. 6 - Power Derating Curve



Ordering Information

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

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