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)

NPN Silicon Planar High Performance Transistor

Maximum Ratings @ 25°C Unless Otherwise Specified

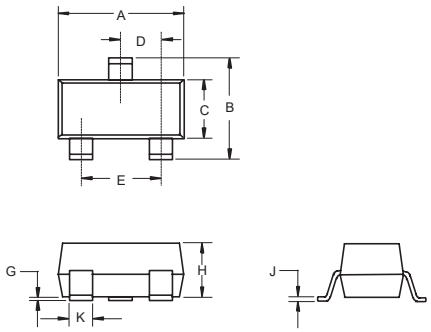
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	2	A
Power Dissipation	P_D	200	mW

Thermal characteristics

Parameter	Symbol	Rating	Unit
Junction Temperature Range	T_J	-55~+150	°C
Storage Temperature Range	T_{Stg}	-55~+150	°C
Thermal Resistance from Junction to Ambient	$Rth_{(J-A)}$	625	°C/W

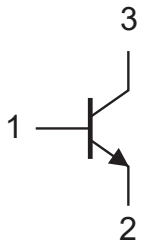
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

SOT-23-3L



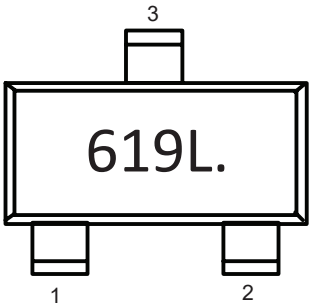
DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.113	0.117	2.87	2.97	
B	0.108	0.112	2.75	2.85	
C	0.061	0.065	1.55	1.65	
D	0.036	0.038	0.914	0.965	
E	0.073	0.077	1.85	1.95	
G	0.0016	0.0039	0.04	0.100	
H	0.041	0.045	1.05	1.15	
J	0.006	0.007	0.14	0.17	
K	0.012	0.020	0.30	0.50	

Internal Structure

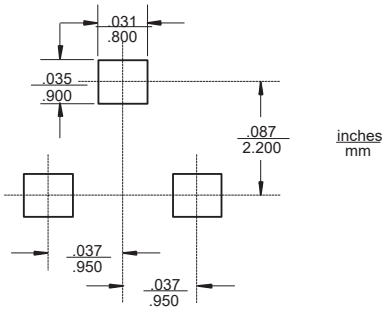


1.BASE
2.EMITTER
3.COLLECTOR

Marking Code



Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	I_C=100μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E=100μA, I_C=0
Collector-Base Cutoff Current	I_{CBO}			100	nA	V_{CB}=40V, I_E=0
Emitter-Base Cutoff Current	I_{EBO}			100	nA	V_{EB}=4V, I_C=0
DC Current Gain	$h_{FE(1)}$	200				V_{CE}=2V, I_C=10mA
	$h_{FE(2)}$	300				V_{CE}=2V, I_C=200mA
	$h_{FE(3)}$	200				V_{CE}=2V, I_C=1A
	$h_{FE(4)}$	100				V_{CE}=2V, I_C=2A
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$			0.02	V	I_C=100mA, I_B=10mA
	$V_{CE(sat)2}$			0.20	V	I_C=1A, I_B=10mA
	$V_{CE(sat)3}$			0.22	V	I_C=2A, I_B=100mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.0	V	I_C=2A, I_B=50mA
Base-Emitter Voltage	V_{BE}			1.0	V	V_{CE}=2V, I_C=2A
Transition Frequency	f_T	100			MHz	V_{CE}=5V, I_C=100mA, f=100MHz
Output Capacitance	C_{ob}			20	pF	V_{CB}=10V, I_E=0, f=1MHz

Curve Characteristics

Fig. 1 - Static Characteristics

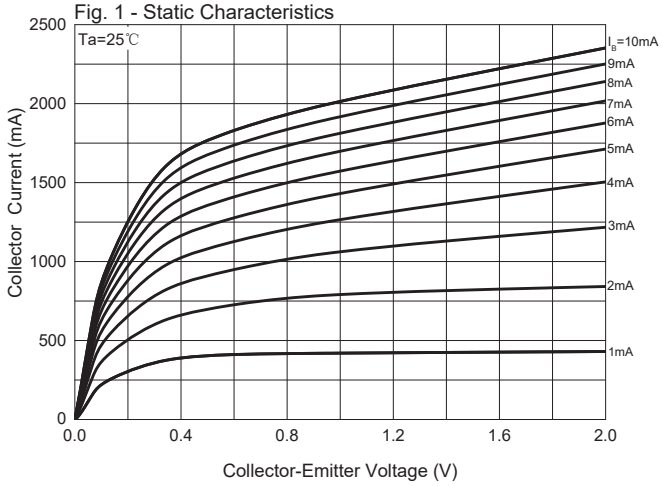


Fig. 2 - DC Current Gain Characteristics

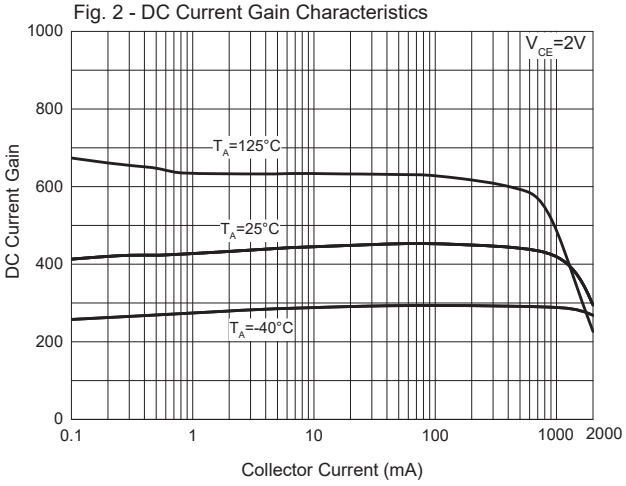


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

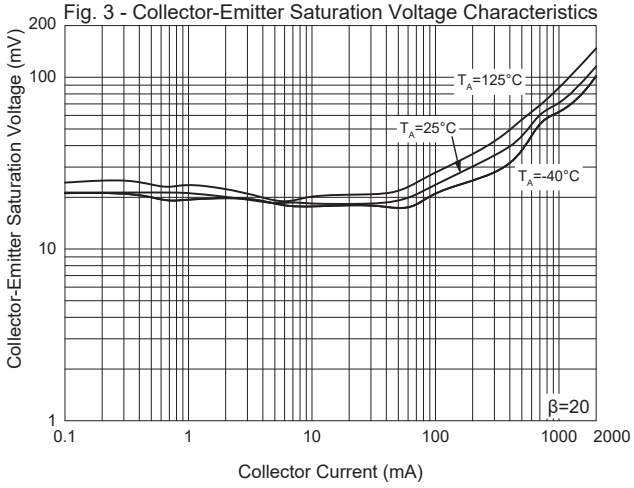


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

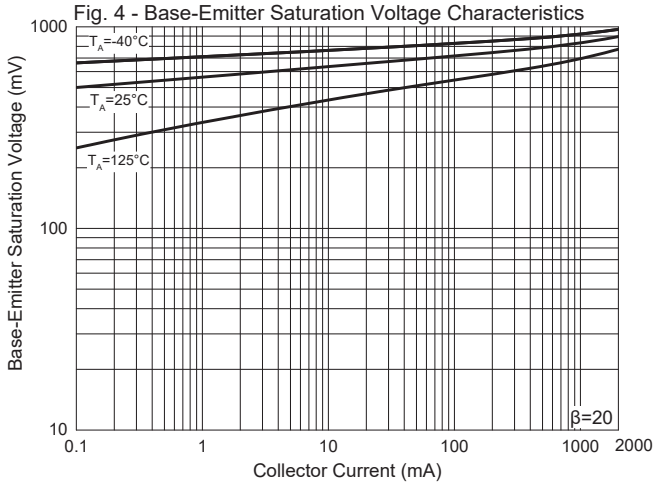


Fig. 5 - Base-Emitter Voltage Characteristics

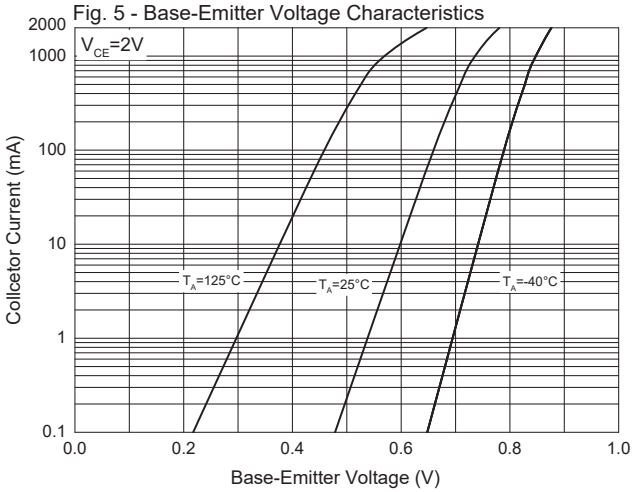
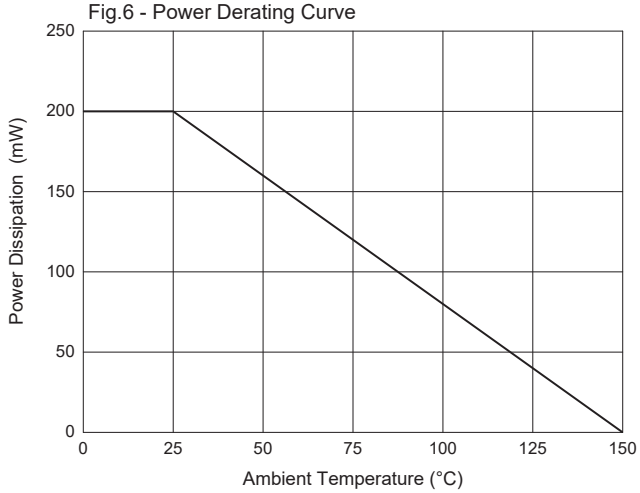


Fig.6 - Power Derating Curve



Ordering Information

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