General Purpose Transistors

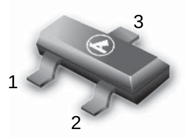
NPN Silicon

FEATURE

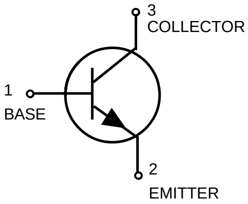
We declare that the material of product compliance with RoHS requirements.

S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

L9013PLT1G
Series
S-L9013PLT1G
Series



SOT-23 (TO-236AB)



DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L9013PLT1G S-L9013PLT1G	13P	3000/Tape&Reel
L9013PLT3G S-L9013PLT3G	13P	10000/Tape&Reel
L9013QLT1G S-L9013QLT1G	13Q	3000/Tape&Reel
L9013QLT3G S-L9013QLT3G	13Q	10000/Tape&Reel
L9013RLT1G S-L9013RLT1G	13R	3000/Tape&Reel
L9013RLT3G S-L9013RLT3G	13R	10000/Tape&Reel
L9013SLT1G S-L9013SLT1G	13S	3000/Tape&Reel
L9013SLT3G S-L9013SLT3G	13S	10000/Tape&Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	20	V
Collector-Base Voltage	V_{CBO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector current-continuoun	I_C	500	mAdc

THERMAL CHARATEERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1)	P_D		
T_A=25°C		225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation	P_D		
Alumina Substrate, (2) T_A=25 °C		300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	Tj ,Tstg	-55 to +150	°C

1. FR–5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C=1.0mA)	$V_{(BR)CEO}$	20	-	-	V
Emitter-Base Breakdown Voltage (I_E=100µA)	$V_{(BR)EBO}$	5	-	-	V
Collector-Base Breakdown Voltage (I_C=100µA)	$V_{(BR)CBO}$	40	-	-	V
Collector Cutoff Current (V_{CB}=35V)	I_{CBO}	-	-	150	nA
Emitter Cutoff Current (V_{EB}=4V)	I_{EBO}			150	nA

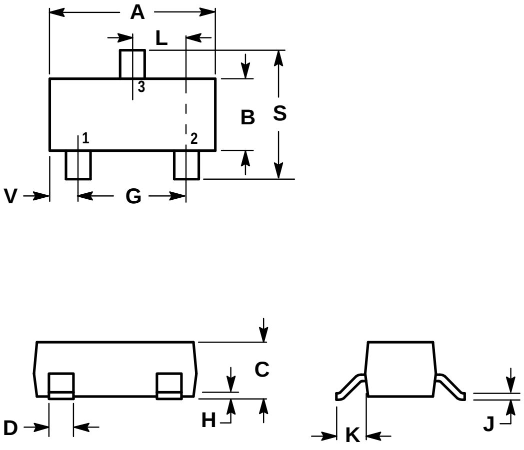
ON CHARACTERISTICS

DC Current Gain (I_C=50mA, V_{CE}=1V)	H_{fe}	100	-	600	
Collector-Emitter Saturation Voltage (I_C=500mA,I_B=50mA)	$V_{CE(S)}$	-	-	0.6	V

NOTE:

*	P	Q	R	S
H_{FE}	100~200	150~300	200~400	300~600

SOT-23 (TO-236AB)



NOTES:

1. CONTROLLING DIMENSION: MILLIMETERS
2. LEAD THICKNESS SPECIFIED PER L / F DRAWING WITH SOLDER PLATING.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0180	0.0236	0.45	0.60
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.0984	2.10	2.50
V	0.0177	0.0236	0.45	0.60

PIN 1. BASE
2. EMITTER
3. COLLECTOR