LM9013G, LM9013H

Preferred Devices

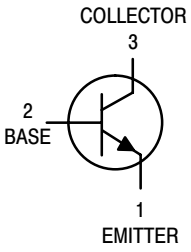
Amplifier Transistors

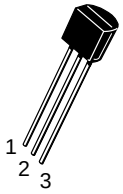
NPN Silicon

- Moisture Sensitivity Level: 1

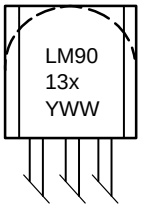
ON Semiconductor™

http://onsemi.com





TO–92
CASE 29
STYLE 1



LM9013x = Specific Device Code
x = G or H
Y = Year
WW = Work Week

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	25	Vdc
Collector-Base Voltage	V_{CBO}	25	Vdc
Emitter-Base Voltage	V_{EBO}	3.0	Vdc
Collector Current – Continuous	I_C	1000	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	 625 5.0	 mW mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	 1.5 12	 Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, (Note 1.) Junction to Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W

1. $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.

ORDERING INFORMATION

Device	Package	Shipping
LM9013G	TO–92	5000 Units/Box
LM9013H	TO–92	5000 Units/Box

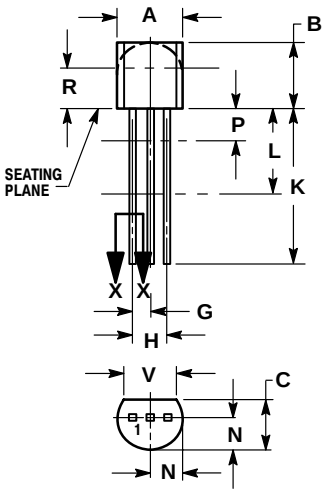
Preferred devices are recommended choices for future use and best overall value.

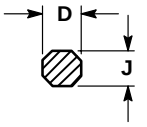
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I_C = 10 mAdc, I_B = 0)		$V_{(BR)CEO}$	25	–	Vdc
Collector–Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)		$V_{(BR)CBO}$	25	–	Vdc
Emitter–Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	3.0	–	Vdc
Collector Cutoff Current (V_{CB} = 16 Vdc, I_E = 0)		I_{CBO}	–	0.5	μAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 50 mAdc, V_{CE} = 1.0 Vdc)	LM9013G LM9013H	h_{FE}	118 144	166 202	–
Collector–Emitter Saturation Voltage (I_C = 250 mAdc, I_B = 25 mAdc)		$V_{CE(sat)}$	–	1.0	Vdc

PACKAGE DIMENSIONS

TO–92
(TO–226)
CASE 29–11
ISSUE AL





SECTION X–X

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

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