

# MSD1328-RT1, MSD1328-ST1

## NPN Low Voltage Output Amplifiers - Surface Mount

### Features

- Pb-Free Packages are Available

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Rating	Symbol	Value	Unit
Collector-Base Voltage	V <sub>(BR)CBO</sub>	25	V
Collector-Emitter Voltage	V <sub>(BR)CEO</sub>	20	V
Emitter-Base Voltage	V <sub>(BR)EBO</sub>	12	V
Collector Current - Continuous	I <sub>C</sub>	500	mA
Collector Current - Peak	I <sub>C(P)</sub>	1000	mA

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation	P <sub>D</sub>	200	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

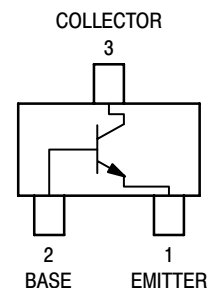
Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 1.0 mA, I <sub>B</sub> = 0)	V <sub>(BR)CEO</sub>	20	-	V
Collector-Base Breakdown Voltage (I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0)	V <sub>(BR)CBO</sub>	25	-	V
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0)	V <sub>(BR)EBO</sub>	12	-	V
Collector-Base Cutoff Current (V <sub>CB</sub> = 25 V, I <sub>E</sub> = 0)	I <sub>CBO</sub>	-	0.1	μA
DC Current Gain (Note 1) MSD1328-RT1 (V <sub>CE</sub> = 2.0 V, I <sub>C</sub> = 500 mA) MSD1328-ST1	h <sub>FE</sub>	200 300	350 500	-
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 500 mA, I <sub>B</sub> = 20 mA)	V <sub>CE(sat)</sub>	-	0.4	V
Base-Emitter Saturation Voltage (I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA)	V <sub>BE(sat)</sub>	-	1.2	V

1. Pulse Test: Pulse Width ≤ 300 μs, D.C. ≤ 2%.



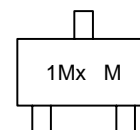
ON Semiconductor®

<http://onsemi.com>



SC-59  
CASE 318D

### MARKING DIAGRAM



x = R for RT1  
S for ST1  
M = Date Code

### ORDERING INFORMATION

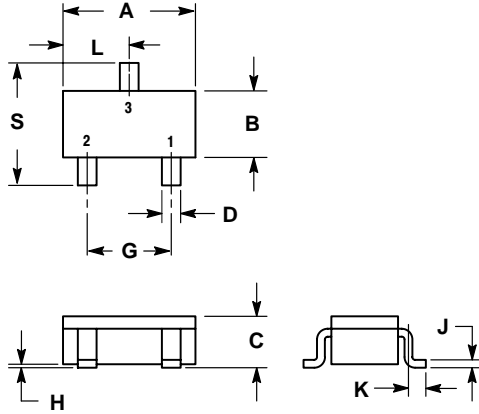
Device	Package	Shipping†
MSD1328-RT1	SC-59	3000 Tape & Reel
MSD1328-RT1G	SC-59 (Pb-Free)	3000 Tape & Reel
MSD1328-ST1	SC-59	3000 Tape & Reel
MSD1328-ST1G	SC-59 (Pb-Free)	3000 Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

# MSD1328-RT1, MSD1328-ST1

## PACKAGE DIMENSIONS

SC-59  
CASE 318D-04  
ISSUE F



NOTES:

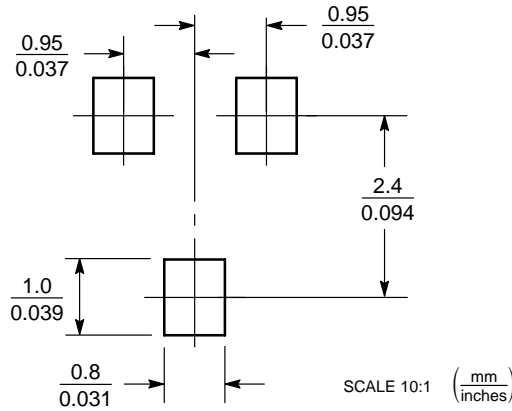
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.70	3.10	0.1063	0.1220
B	1.30	1.70	0.0512	0.0669
C	1.00	1.30	0.0394	0.0511
D	0.35	0.50	0.0138	0.0196
G	1.70	2.10	0.0670	0.0826
H	0.013	0.100	0.0005	0.0040
J	0.09	0.18	0.0034	0.0070
K	0.20	0.60	0.0079	0.0236
L	1.25	1.65	0.0493	0.0649
S	2.50	3.00	0.0985	0.1181

STYLE 1:

- PIN 1. EMITTER
- BASE
- COLLECTOR

### SOLDERING FOOTPRINT\*



\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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