

## Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[ON Semiconductor](#)  
[MSD1328-RT1G](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

# 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)

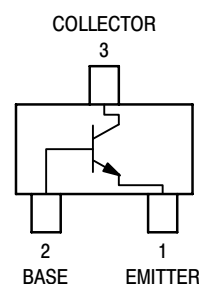
Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 1.0 mA, I <sub>B</sub> = 0)	V <sub>(BR)CEO</sub>	20	-	V
Collector-Base Breakdown Voltage (I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0)	V <sub>(BR)CBO</sub>	25	-	V
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 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%.



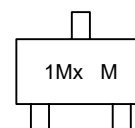
ON Semiconductor®

<http://onsemi.com>



SC-59  
CASE 318D

### MARKING DIAGRAM



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

### ORDERING INFORMATION

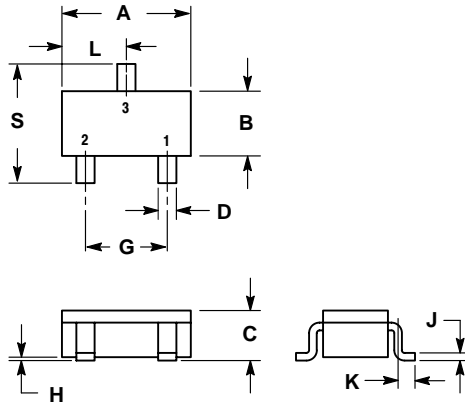
Device	Package	Shipping†
MSD1328-RT1	SC-59	3000 Tape & Reel
MSD1328-RT1G	SC-59 (Pb-Free)	3000 Tape & Reel
MSD1328-ST1	SC-59	3000 Tape & Reel
MSD1328-ST1G	SC-59 (Pb-Free)	3000 Tape & Reel

†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:

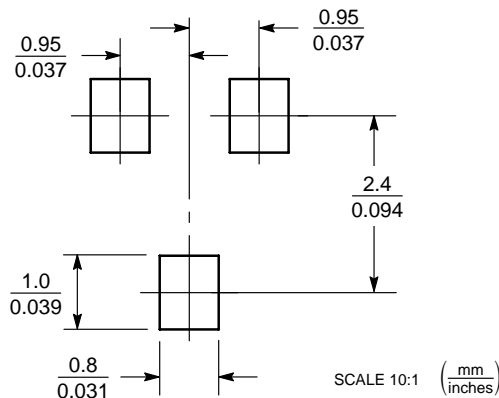
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

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  
2. BASE  
3. 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, SOLDERM/D.

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

### PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor  
P.O. Box 61312, Phoenix, Arizona 85082-1312 USA  
Phone: 480-829-7710 or 800-344-3860 Toll Free USA/Canada  
Fax: 480-829-7709 or 800-344-3867 Toll Free USA/Canada  
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center  
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051  
Phone: 81-3-5773-3850

ON Semiconductor Website: <http://onsemi.com>

Order Literature: <http://www.onsemi.com/litorder>

For additional information, please contact your local Sales Representative.