

# NPN General Purpose Amplifier Transistors Surface Mount

## MSD601-RT1G, NSVMSD601-RT1G

### **Features**

- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

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

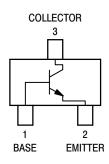
Rating	Symbol	Value	Unit
Collector - Base Voltage	V <sub>(BR)CBO</sub>	60	Vdc
Collector - Emitter Voltage	V <sub>(BR)CEO</sub>	50	Vdc
Emitter - Base Voltage	V <sub>(BR)EBO</sub>	7.0	Vdc
Collector Current - Continuous	I <sub>C</sub>	100	mAdc
Collector Current - Peak	I <sub>C(P)</sub>	200	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation	$P_{D}$	200	mW
Junction Temperature	$T_J$	150	°C
Storage Temperature	T <sub>stg</sub>	−55 ~ +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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### MARKING DIAGRAM



SC-59 CASE 318D



YR = Specific Device Code

M = Date Code

= Pb–Free Package

(Note: Microdot may be in either location)

### **ORDERING INFORMATION**

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

### MSD601-RT1G, NSVMSD601-RT1G

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

Characteristic	Symbol	Min	Max	Unit
Collector – Emitter Breakdown Voltage $(I_C = 2.0 \text{ mAdc}, I_B = 0)$	V <sub>(BR)CEO</sub>	50	-	Vdc
Collector – Base Breakdown Voltage (I <sub>C</sub> = 10 µAdc, I <sub>E</sub> = 0)	V <sub>(BR)CBO</sub>	60	-	Vdc
Emitter – Base Breakdown Voltage ( $I_E = 10 \mu Adc, I_C = 0$ )	V <sub>(BR)EBO</sub>	7.0	-	Vdc
Collector – Base Cutoff Current (V <sub>CB</sub> = 45 Vdc, I <sub>E</sub> = 0)	I <sub>CBO</sub>	-	0.1	μAdc
Collector – Emitter Cutoff Current (V <sub>CE</sub> = 10 Vdc, I <sub>B</sub> = 0)	I <sub>CEO</sub>	-	100	nAdc
DC Current Gain (Note 1) $ (V_{CE} = 10 \text{ Vdc}, I_C = 2.0 \text{ mAdc}) $ $ (V_{CE} = 2.0 \text{ Vdc}, I_C = 100 \text{ mAdc}) $	h <sub>FE1</sub>	210 90	340 -	_
Collector – Emitter Saturation Voltage ( $I_C = 100 \text{ mAdc}$ , $I_B = 10 \text{ mAdc}$ )	V <sub>CE(sat)</sub>	_	0.5	Vdc

<sup>1.</sup> Pulse Test: Pulse Width  $\leq$  300  $\mu$ s, D.C.  $\leq$  2%.

### **ORDERING INFORMATION**

Device	Package	Shipping <sup>†</sup>
MSD601-RT1G	SC-59 (Pb-Free)	3000 / Tape & Reel
NSVMSD601-RT1G	SC-59 (Pb-Free)	3000 / Tape & Reel

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





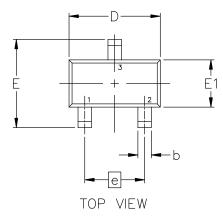
### SC-59-3 2.90x1.50x1.15, 1.90P CASE 318D ISSUE J

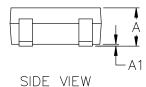
**DATE 15 FEB 2024** 

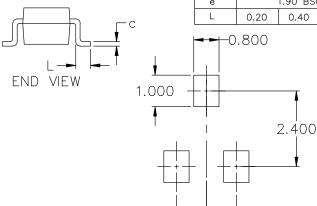
#### NOTES:

- DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
- 2. ALL DIMENSION ARE IN MILLIMETERS.

	MILLIMETERS		
DIM	MIN.	NOM.	MAX.
Α	1.00	1.15	1.30
A1	0.01	0.06	0.10
b	0.35	0.43	0.50
С	0.09	0.14	0.18
D	2.70	2.90	3.10
E	2.50	2.80	3.00
E1	1.30	1.50	1.70
е	1.90 BSC		
L	0.20	0.40	0.60







0.950

# GENERIC MARKING DIAGRAM\*



XXX = Specific Device Code

M = Date Code

= Pb-Free Package\*

(\*Note: Microdot may be in either location)

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

### RECOMMENDED MOUNTING 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.

STYLE 1:	STYLE 2:	STYLE 3:
PIN 1. BASE	PIN 1. ANODE	PIN 1. ANODE
2. EMITTER	2. N.C.	<ol><li>ANODE</li></ol>
3. COLLECTOR	3. CATHODE	3. CATHODE

STYLE 4:	STYLE 5:	STYLE 6:
PIN 1. CATHODE	PIN 1. CATHODE	PIN 1. ANODE
2. N.C.	2. CATHODE	2. CATHODE
3. ANODE	3. ANODE	<ol><li>ANODE/CATHODE</li></ol>

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DESCRIPTION:	SC-59-3 2.90x1.50x1.15, 1.90P		PAGE 1 OF 1

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