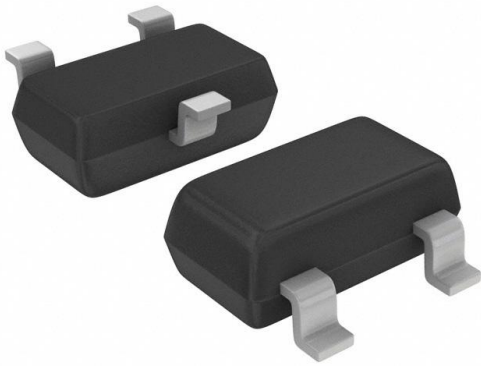


# MSB709-RT1G Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	MSB709-RT1G-DG
Manufacturer	<a href="#">onsemi</a>
Manufacturer Product Number	MSB709-RT1G
Description	TRANS PNP 45V 0.1A SC59
Detailed Description	Bipolar (BJT) Transistor PNP 45 V 100 mA 200 mW S urface Mount SC-59



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

MSB709-RT1G

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

45 V

Current - Collector Cutoff (Max):

100nA

Power - Max:

200 mW

Operating Temperature:

150°C (TJ)

Package / Case:

TO-236-3, SC-59, SOT-23-3

Base Product Number:

MSB70

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

100 mA

Vce Saturation (Max) @ Ib, Ic:

500mV @ 10mA, 100mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

210 @ 2mA, 10V

Frequency - Transition:

-

Mounting Type:

Surface Mount

Supplier Device Package:

SC-59

## Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0095

# MSB709-RT1

Preferred Device

## PNP General Purpose Amplifier Transistor Surface Mount

### Features

- Pb-Free Package is Available

### 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>	-45	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

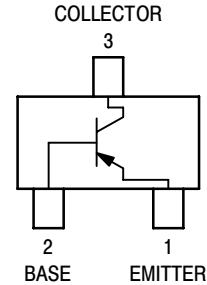
### THERMAL CHARACTERISTICS

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

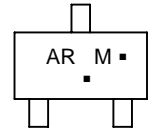
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur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



ON Semiconductor®

<http://onsemi.com>

### MARKING DIAGRAM

SC-59  
CASE 318D

AR = 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.

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

**MSB709-RT1****ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ )

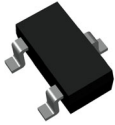
Characteristic	Symbol	Min	Max	Unit
Collector – Emitter Breakdown Voltage ( $I_C = 2.0 \text{ mAdc}$ , $I_B = 0$ )	$V_{(BR)CEO}$	-45	-	Vdc
Collector – Base Breakdown Voltage ( $I_C = 10 \text{ }\mu\text{Adc}$ , $I_E = 0$ )	$V_{(BR)CBO}$	-60	-	Vdc
Emitter – Base Breakdown Voltage ( $I_E = 10 \text{ }\mu\text{Adc}$ , $I_C = 0$ )	$V_{(BR)EBO}$	-7.0	-	Vdc
Collector – Base Cutoff Current ( $V_{CB} = 45 \text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	-	-0.1	$\mu\text{Adc}$
Collector – Emitter Cutoff Current ( $V_{CE} = 10 \text{ Vdc}$ , $I_B = 0$ )	$I_{CEO}$	-	-100	nAdc
DC Current Gain (Note 1) ( $V_{CE} = 10 \text{ Vdc}$ , $I_C = 2.0 \text{ mAdc}$ )	$h_{FE1}$	210	340	-
Collector – Emitter Saturation Voltage ( $I_C = 100 \text{ mAdc}$ , $I_B = 10 \text{ mAdc}$ )	$V_{CE(sat)}$	-	-0.5	Vdc

1. Pulse Test: Pulse Width  $\leq 300 \text{ }\mu\text{s}$ , D.C.  $\leq 2\%$ .

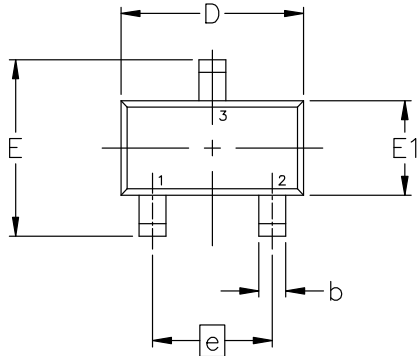
**ORDERING INFORMATION**

Device	Package	Shipping <sup>†</sup>
MSB-709RT1	SC-59	3000 Units / Reel
MSB-709RT1G	SC-59 (Pb-Free)	3000 Units / Reel

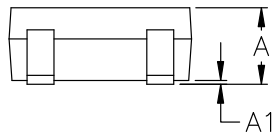
<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.


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

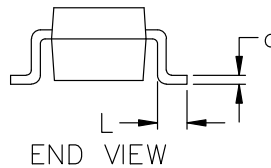
DATE 15 FEB 2024



TOP VIEW



SIDE VIEW

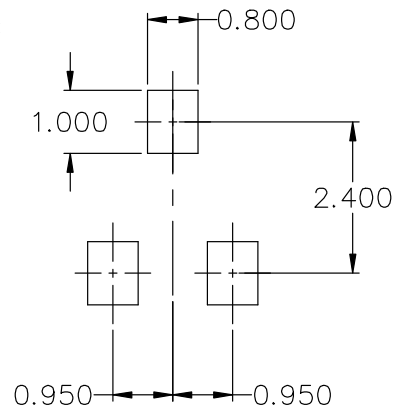


END VIEW

## NOTES:

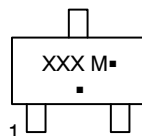
- DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
- ALL DIMENSION ARE IN MILLIMETERS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	1.00	1.15	1.30
A1	0.01	0.06	0.10
b	0.35	0.43	0.50
c	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
e	1.90 BSC		
L	0.20	0.40	0.60



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.

**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.

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

STYLE 2:  
 PIN 1. ANODE  
 2. N.C.  
 3. CATHODE

STYLE 3:  
 PIN 1. ANODE  
 2. ANODE  
 3. CATHODE

STYLE 4:  
 PIN 1. CATHODE  
 2. N.C.  
 3. ANODE

STYLE 5:  
 PIN 1. CATHODE  
 2. CATHODE  
 3. ANODE

STYLE 6:  
 PIN 1. ANODE  
 2. CATHODE  
 3. ANODE/CATHODE

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

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