

# 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

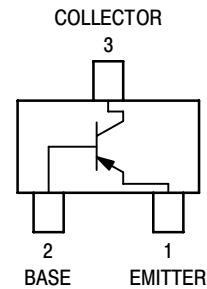
Characteristic	Symbol	Max	Unit
Power Dissipation	P <sub>D</sub>	200	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ +150	°C

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.



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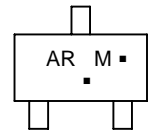
<http://onsemi.com>



### 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 ( $I_E = 10 \text{ }\mu\text{Adc}$ , $I_E = 0$ )	$V_{(BR)EBO}$	-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

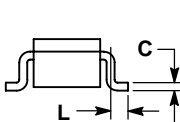
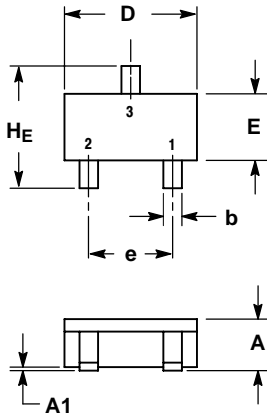
Device	Package	Shipping†
MSB-709RT1	SC-59	3000 Units / Reel
MSB-709RT1G	SC-59 (Pb-Free)	3000 Units / Reel

†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.

# MSB709-RT1

## PACKAGE DIMENSIONS

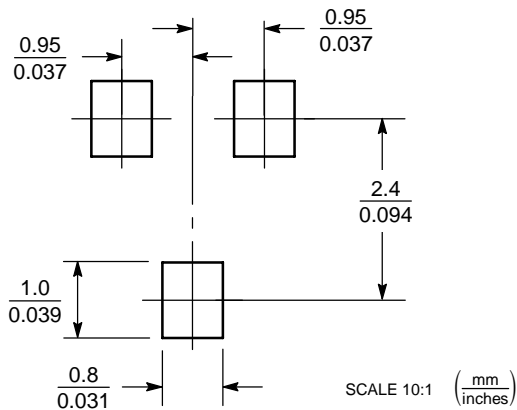
SC-59  
CASE 318D-04  
ISSUE G



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

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.00	1.15	1.30	0.039	0.045	0.051
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.35	0.43	0.50	0.014	0.017	0.020
c	0.09	0.14	0.18	0.003	0.005	0.007
D	2.70	2.90	3.10	0.106	0.114	0.122
E	1.30	1.50	1.70	0.051	0.059	0.067
e	1.70	1.90	2.10	0.067	0.075	0.083
L	0.20	0.40	0.60	0.008	0.016	0.024
HE	2.50	2.80	3.00	0.099	0.110	0.118

### 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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