MSB709-RT1

Preferred Device

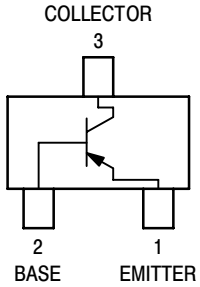
PNP General Purpose Amplifier Transistor Surface Mount

ON Semiconductor®

http://onsemi.com

Features

- Pb−Free Package is Available



MAXIMUM RATINGS (T_A = 25°C)

Rating	Symbol	Value	Unit
Collector − Base Voltage	$V_{(BR)CBO}$	−60	Vdc
Collector − Emitter Voltage	$V_{(BR)CEO}$	−45	Vdc
Emitter − Base Voltage	$V_{(BR)EBO}$	−7.0	Vdc
Collector Current − Continuous	I_C	−100	mAdc
Collector Current − Peak	$I_{C(P)}$	−200	mAdc

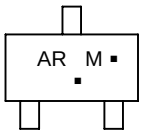
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	−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.

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.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

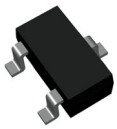
Characteristic	Symbol	Min	Max	Unit
Collector − Emitter Breakdown Voltage (I_C = 2.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	−45	−	Vdc
Collector − Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)	$V_{(BR)CBO}$	−60	−	Vdc
Emitter − Base Breakdown Voltage (I_E = 10 μAdc, I_E = 0)	$V_{(BR)EBO}$	−7.0	−	Vdc
Collector −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

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

ORDERING INFORMATION

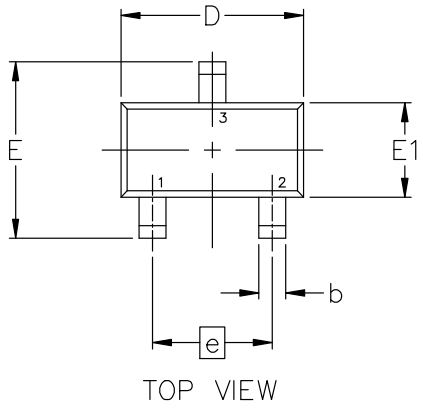
Device	Package	Shipping†
MSB−709RT1	SC−59	3000 Units / Reel
MSB−709RT1G	SC−59 (Pb−Free)	3000 Units / Reel

†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.

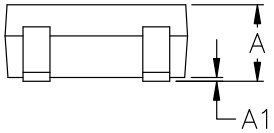


SC−59−3 2.90x1.50x1.15, 1.90P
CASE 318D
ISSUE J

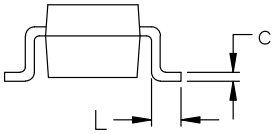
DATE 15 FEB 2024



TOP VIEW



SIDE VIEW

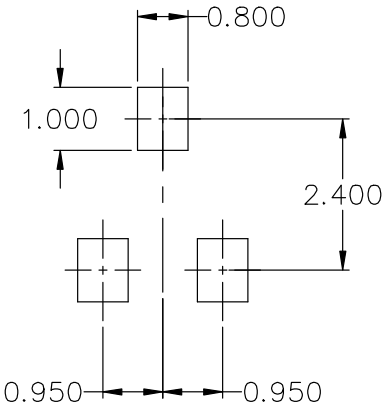


END VIEW

NOTES:

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

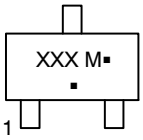
DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	1.00	1.15	1.30
A1	0.01	0.06	0.10
b	0.35	0.43	0.50
c	0.09	0.14	0.18
D	2.70	2.90	3.10
E	2.50	2.80	3.00
E1	1.30	1.50	1.70
e	1.90 BSC		
L	0.20	0.40	0.60



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

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