

# MSB710-RT1

Preferred Device

## PNP General Purpose Amplifier Transistor Surface Mount

### Features

- Pb-Free Package is Available

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

Rating	Symbol	Value	Unit
Collector-Base Voltage	$V_{(BR)CBO}$	-60	Vdc
Collector-Emitter Voltage	$V_{(BR)CEO}$	-50	Vdc
Emitter-Base Voltage	$V_{(BR)EBO}$	-7.0	Vdc
Collector Current - Continuous	$I_C$	-500	mAdc
Collector Current - Peak	$I_{C(P)}$	-1.0	Adc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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 ( $T_A = 25^\circ\text{C}$ )

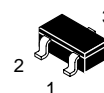
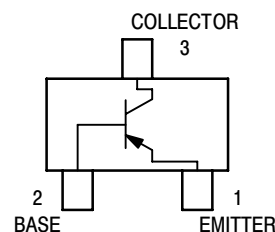
Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage ( $I_C = -10\text{ mAdc}$ , $I_B = 0$ )	$V_{(BR)CEO}$	-50	-	Vdc
Collector-Base Breakdown Voltage ( $I_C = -10\text{ }\mu\text{Adc}$ , $I_E = 0$ )	$V_{(BR)CBO}$	-60	-	Vdc
Emitter-Base Breakdown Voltage ( $I_E = -10\text{ }\mu\text{Adc}$ , $I_C = 0$ )	$V_{(BR)EBO}$	-7.0	-	Vdc
Collector-Base Cutoff Current ( $V_{CB} = -20\text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	-	-0.1	$\mu\text{Adc}$
DC Current Gain (Note 1) ( $V_{CE} = -10\text{ Vdc}$ , $I_C = -150\text{ mAdc}$ ) ( $V_{CE} = -10\text{ Vdc}$ , $I_C = 500\text{ mAdc}$ )	$h_{FE1}$ $h_{FE2}$	120 40	240 -	-
Collector-Emitter Saturation Voltage ( $I_C = -300\text{ mAdc}$ , $I_B = -30\text{ mAdc}$ )	$V_{CE(sat)}$	-	-0.6	Vdc
Collector-Base Saturation Voltage ( $I_C = -300\text{ mAdc}$ , $I_B = -30\text{ mAdc}$ )	$V_{BE(sat)}$	-	-1.5	Vdc
Output Capacitance ( $V_{CB} = -10\text{ Vdc}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{ob}$	-	15	pF

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



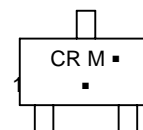
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<http://onsemi.com>



SC-59  
CASE 318D

### MARKING DIAGRAM



CR = Device Code  
M = Date Code\*  
■ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping†
MSB710-RT1	SC-59	3000 / Tape & Reel
MSB710-RT1G	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 Specifications Brochure, BRD8011/D.

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

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

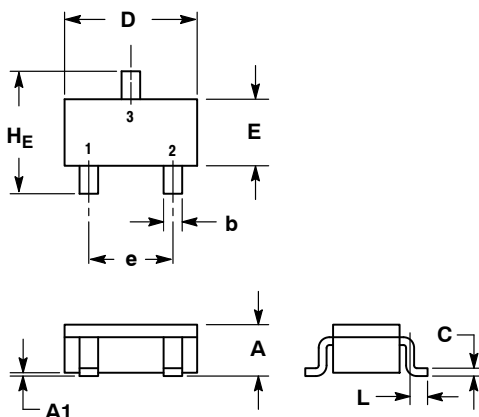
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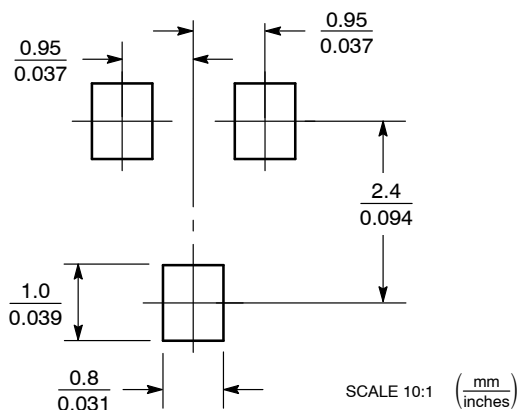
SCALE 2:1

SC-59  
CASE 318D-04  
ISSUE H

DATE 28 JUN 2012



## SOLDERING FOOTPRINT\*

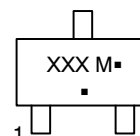


\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

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
H_E	2.50	2.80	3.00	0.099	0.110	0.118

## 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.

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

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