

Single Silicon Switching Diodes

M1MA151KT1, M1MA152KT1

These Silicon Epitaxial Planar Diodes are designed for use in ultra high speed switching applications. These devices are housed in the SC-59 package which is designed for low power surface mount applications.

Features

- Fast t_{TR} , < 3.0 ns
- Low C_D , < 2.0 pF
- Available in 8 mm Tape and Reel
 - Use M1MA151/2KT1 to order the 7 inch/3000 unit reel.
 - Use M1MA151/2KT3 to order the 13 inch/10,000 unit reel.
- Pb-Free Packages are Available

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

Rating	Symbol	Value	Unit
Reverse Voltage	M1MA151KT1	40	Vdc
	M1MA152KT1	80	
Peak Reverse Voltage	M1MA151KT1	40	Vdc
	M1MA152KT1	80	
Forward Current	I_F	100	mAdc
Peak Forward Current	I_{FM}	225	mAdc
Peak Forward Surge Current	I_{FSM} (Note 1)	500	mAdc

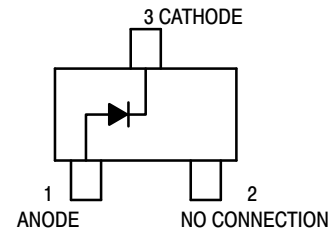
THERMAL CHARACTERISTICS

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

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.

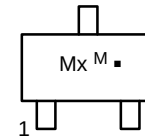
1. $t = 1 \text{ SEC}$

SC-59 PACKAGE SINGLE SILICON SWITCHING DIODES 40/80 V-100 mA SURFACE MOUNT



SC-59
CASE 318D

MARKING DIAGRAM



Mx = Device Code
 x = H for 151
 I for 152
 M = Date Code*
 $\blacksquare$ = Pb-Free Package
 (Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

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

NOTE: Some of the devices on this data sheet have been **DISCONTINUED**. Please refer to the table on page 2.

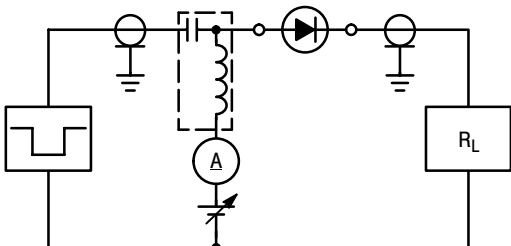
M1MA151KT1, M1MA152KT1

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

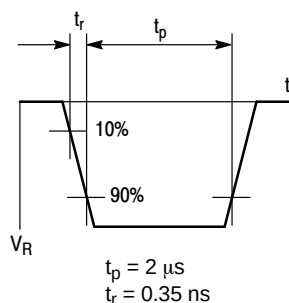
Characteristic		Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	M1MA151KT1	I_R	$V_R = 35 \text{ V}$	–	0.1	μA
	M1MA152KT1		$V_R = 75 \text{ V}$	–	0.1	
Forward Voltage		V_F	$I_F = 100 \text{ mA}$	–	1.2	V_{dc}
Reverse Breakdown Voltage	M1MA151KT1	V_R	$I_R = 100 \mu\text{A}$	40	–	V_{dc}
	M1MA152KT1			80	–	
Diode Capacitance		C_D	$V_R = 0, f = 1.0 \text{ MHz}$	–	2.0	pF
Reverse Recovery Time (Figure 1)		t_{rr} (Note 2)	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V}, R_L = 100 \Omega, I_{rr} = 0.1 I_R$	–	3.0	ns

2. t_{rr} Test Circuit

RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

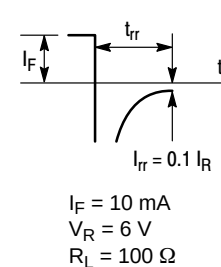


Figure 1. Reverse Recovery Time Equivalent Test Circuit

ORDERING INFORMATION

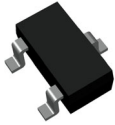
Device	Package	Shipping [†]
M1MA151KT1G	SC-59 (Pb-Free)	3000 Units / Tape & Reel
M1MA152KT1G	SC-59 (Pb-Free)	3000 Units / Tape & Reel

DISCONTINUED (Note 3)

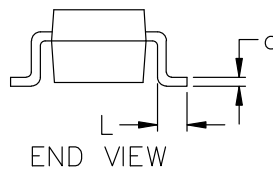
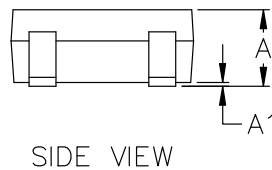
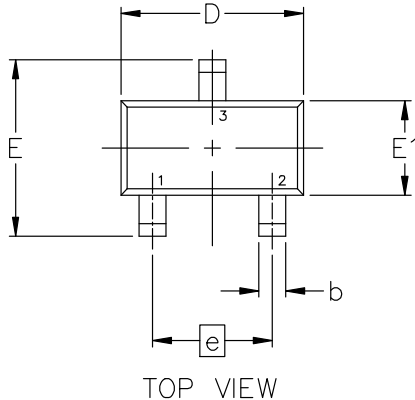
M1MA151KT1	SC-59	3000 Units / Tape & Reel
M1MA152KT1	SC-59	3000 Units / Tape & Reel

†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.

3. **DISCONTINUED:** These devices are not recommended for new design. Please contact your **onsemi** representative for information. The most current information on these devices may be available on www.onsemi.com.


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

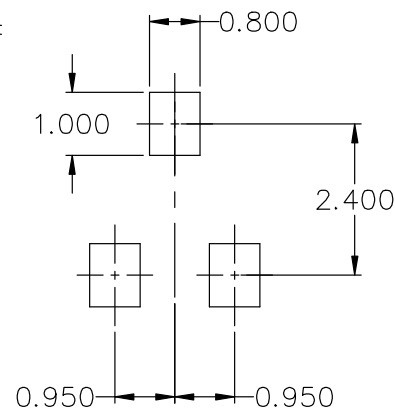
DATE 15 FEB 2024



NOTES:

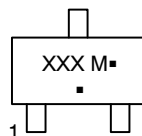
1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
2. ALL DIMENSION ARE IN MILLIMETERS.

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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