High-Speed Switching Diode

Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and **PPAP** Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V _R	100	V
Forward Current	١ _F	200	mA
Non-Repetitive Peak Forward Surge Current 60 Hz	I _{FSM(surge)}	1.8	A
Repetitive Peak Forward Current (Note 2)	I _{FRM}	1.0	A
$\label{eq:surge} \begin{array}{l} Non-Repetitive Peak Forward Current \\ (Square Wave, T_J = 25^\circ C \mbox{ prior to} \\ surge) \\ t = 1 \\ t = 10 \\ t = 100 \\ t = 1 \\ t = 10 \\ t = 100 \\ t = 100 \\ t = 1 \\ \end{array}$	I _{FSM}	36.0 18.0 6.0 3.0 1.8 1.3 1.0	A

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board T _A = 25°C (Note 1)	PD	200	mW
Derate above 25°C		1.57	mW/°C
Thermal Resistance,	$R_{\theta JA}$		°C/W
Junction-to-Ambient		635	
Junction and Storage Temperature	T _J , T _{stg}	–55 to 150	°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. FR-4 Minimum Pad.

2. Square Wave, f = 40 kHz, PW = 200 ns

Test Duration = 60 s, $T_J = 25^{\circ}C$ prior to surge.



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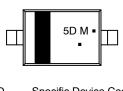
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SOD-323 CASE 477 STYLE 1



MARKING DIAGRAM



5D = Specific Device Code Μ

= Date Code

= Pb-Free Package

(Note: Microdot may be in either location)

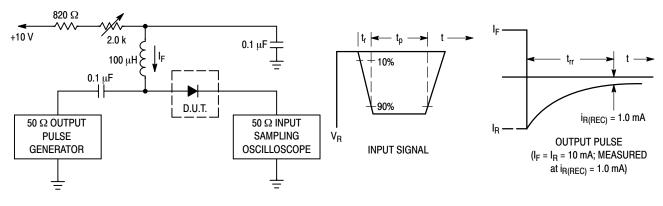
Device	Package	Shipping [†]
MMDL914T1G	SOD-323 (Pb-Free)	3,000 / Tape & Reel
SMMDL914T1G	SOD-323 (Pb-Free)	3,000 / Tape & Reel
MMDL914T3G	SOD-323 (Pb-Free)	10,000 / Tape & Reel

+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.

MMDL914

ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}C$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage (I _R = 100 μAdc)	V _(BR)	100	-	Vdc
Reverse Voltage Leakage Current (V _R = 20 Vdc) (V _R = 75 Vdc)	I _R		25 5.0	nAdc μAdc
Diode Capacitance (V _R = 0 V, f = 1.0 MHz)	CT	-	4.0	pF
Forward Voltage (I _F = 10 mAdc)	V _F	_	1.0	Vdc
Reverse Recovery Time (I _F = I _R = 10 mAdc) (Figure 1)	t _{rr}	_	4.0	ns



Notes: 1. A 2.0 k Ω variable resistor adjusted for a Forward Current (I_F) of 10 mA. 2. Input pulse is adjusted so I_{R(peak)} is equal to 10 mA. 3. t_p » t_{rr}



MMDL914

TYPICAL CHARACTERISTICS

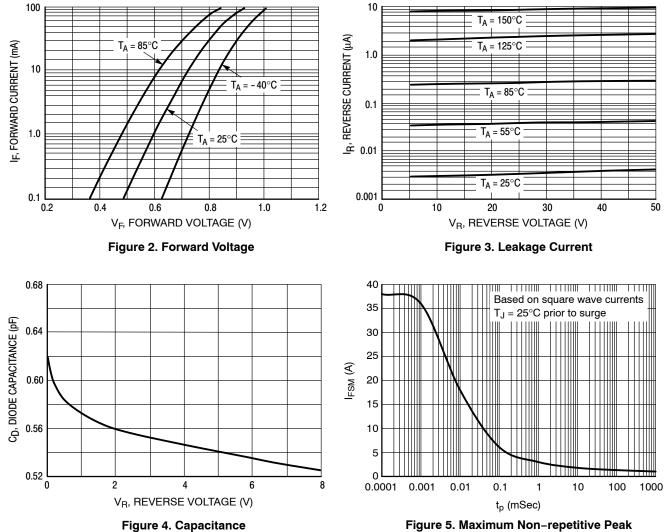


Figure 5. Maximum Non-repetitive Peak Forward Current as a Function of Pulse Duration, Typical Values

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

2

nsem



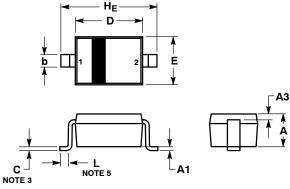


SOD-323 CASE 477-02 **ISSUE H**

NO POLARITY

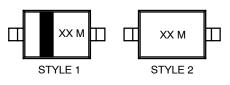
DATE 13 MAR 2007





STYLE 1: STYLE 2: PIN 1. CATHODE (POLARITY BAND) 2. ANODE

GENERIC **MARKING DIAGRAM***



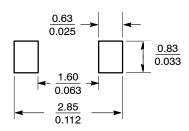
- XX = Specific Device Code M = Date Code
- *This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

NOTES:

- VOTES: 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: MILLIMETERS. 3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
- WITH SOLDER PLATING.
 A. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
 DIMENSION L IS MEASURED FROM END OF RADIUS.

	MILLIMETERS			INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	0.80	0.90	1.00	0.031	0.035	0.040	
A1	0.00	0.05	0.10	0.000	0.002	0.004	
A3	0.15 REF			0	0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016	
С	0.089	0.12	0.177	0.003	0.005	0.007	
D	1.60	1.70	1.80	0.062	0.066	0.070	
Е	1.15	1.25	1.35	0.045	0.049	0.053	
L	0.08			0.003			
H _E	2.30	2.50	2.70	0.090	0.098	0.105	

RECOMMENDED SOLDERING FOOTPRINT*



^{*}For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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DESCRIPTION: SOD-323 PAGE 1 OF 1					
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