



1N4148

DIODE

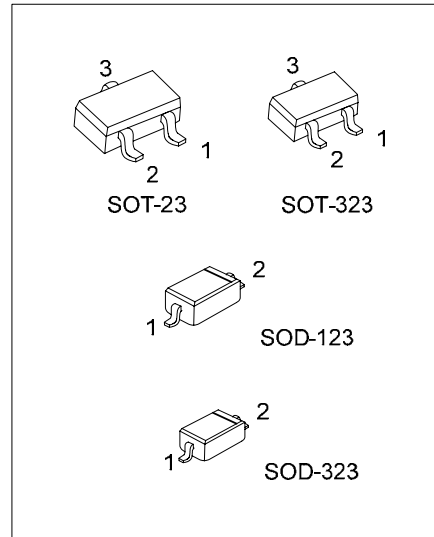
HIGH-SPEED SWITCHING DIODE

DESCRIPTION

The UTC 1N4148 is designed for high-speed switching application in hybrid thick-and thin-film circuits. The devices is manufactured by the silicon epitaxial planar process and packed in plastic surface mount package.

FEATURES

- * Ultra-high speed
- * Low forward voltage
- * Fast reverse recovery time



*Pb-free plating product number: 1N4148L

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
1N4148-AE3-R	1N4148L-AE3-R	SOT-23	NC	A	C	Tape Reel
1N4148-AL3-R	1N4148L-AL3-R	SOT-323	NC	A	C	Tape Reel
1N4148-CA2-R	1N4148L-CA2-R	SOD-123	A	C	-	Tape Reel
1N4148-CB2-R	1N4148L-CB2-R	SOD-323	A	C	-	Tape Reel

Note: Pin assignment: A: Anode C: Cathode NC: No Connection

<p>1N4148L-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Plating</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, CA2: SOD-123, CB2: SOD-323 (3) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS (Ta=25 , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Maximum Repetitive Reverse Voltage	V_{RRM}	100	V
Average Rectified Forward Current	$I_{F(AV)}$	200	mA
Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 second Pulse Width = 1.0 microsecond	I_{FSM}	1.0 4.0	A
Power Dissipation	P_D	500	mW
Operating Junction Temperature	T_J	+175	
Storage Temperature Range	T_{STG}	-65 ~ +200	

Note: 1. These ratings are based on a maximum junction temperature of 200 .

2. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

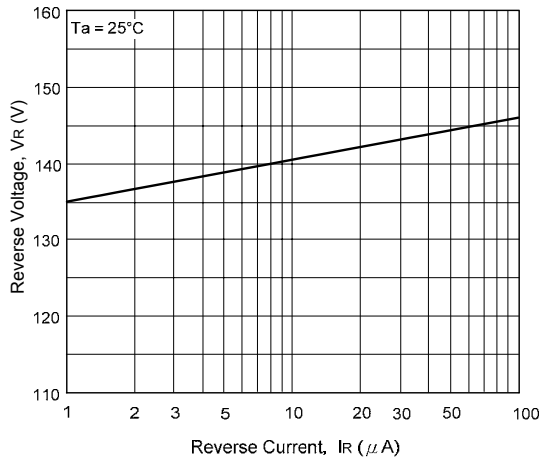
CHARACTERISTIC	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction to Ambient	θ_{JA}	300	/W

■ ELECTRICAL CHARACTERISTICS (Ta=25 , unless otherwise specified)

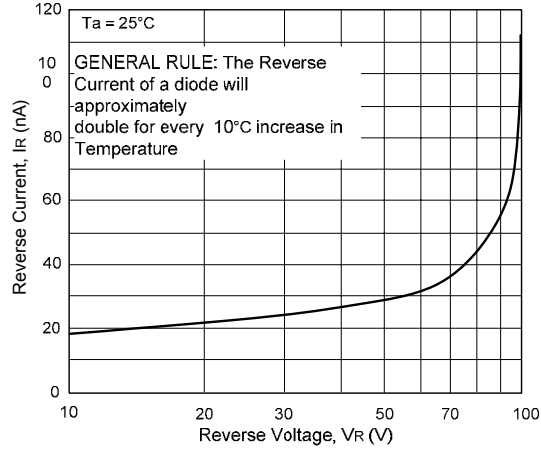
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage	V_R	$I_R = 100\mu A$	100			V
		$I_R = 5.0\mu A$	75			V
Forward Voltage	V_F	$I_F = 10\text{ mA}$			1.0	V
Reverse Current	I_R	$V_R = 20\text{ V}$			25	nA
		$V_R = 20\text{ V}, T_a = 150$			50	μA
		$V_R = 75\text{ V}$			5.0	μA
Total Capacitance	C_T	$V_R = 0, f = 1.0\text{MHz}$			4.0	pF
Reverse Recovery Time	t_{RR}	$I_F = 10\text{ mA}, V_R = 6.0\text{ V (60mA)}$ $I_{RR} = 1.0\text{ mA}, R_L = 100\Omega$			4.0	ns

TYPICAL CHARACTERISTICS

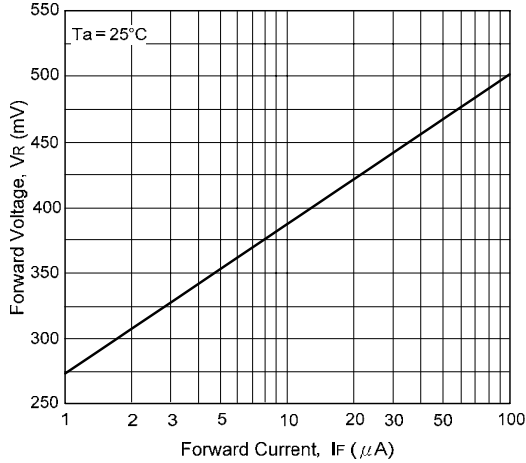
Reverse Voltage vs. Reverse Current
BV - 1.0 ~ 100 μ A



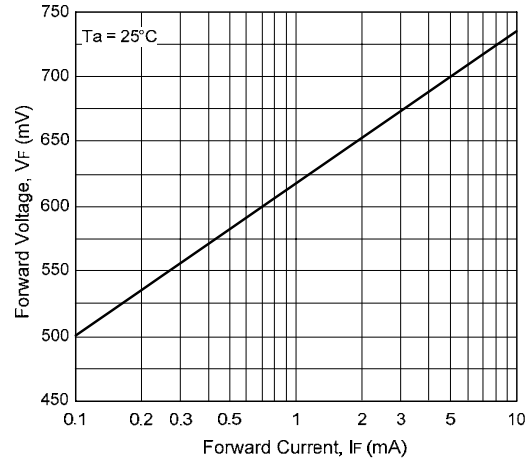
Reverse Current vs. Reverse Voltage
 I_R - 10 ~ 100 V



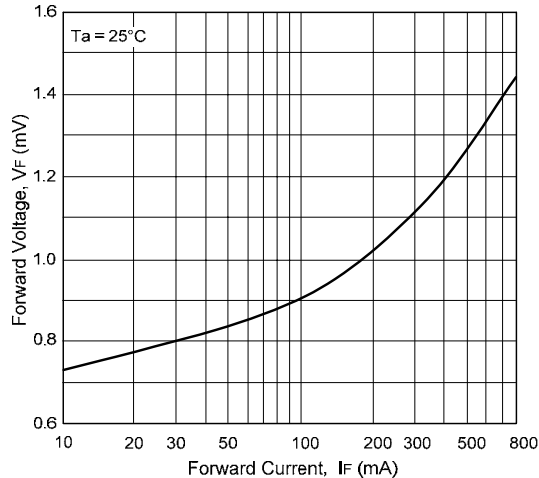
Forward Voltage vs. Forward Current
 V_F - 1 ~ 100 μ A



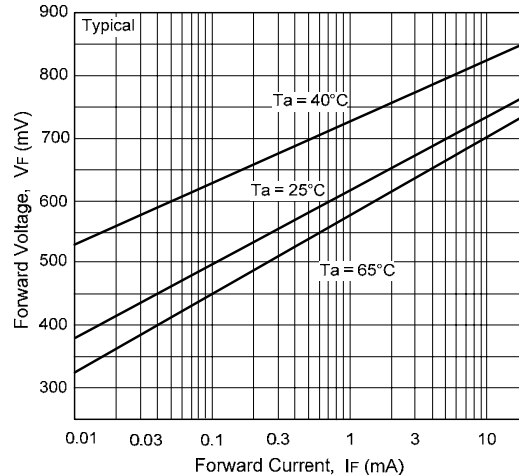
Forward Voltage vs. Forward Current
 V_F - 0.1 ~ 10 mA



Forward Voltage vs. Forward Current
 V_F - 10 ~ 800 mA

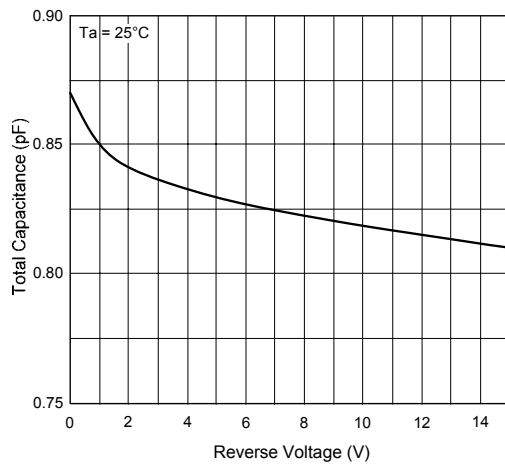


Forward Voltage vs. Ambient Temperature
 V_F - 0.01 - 20 mA (-40 ~ +65)

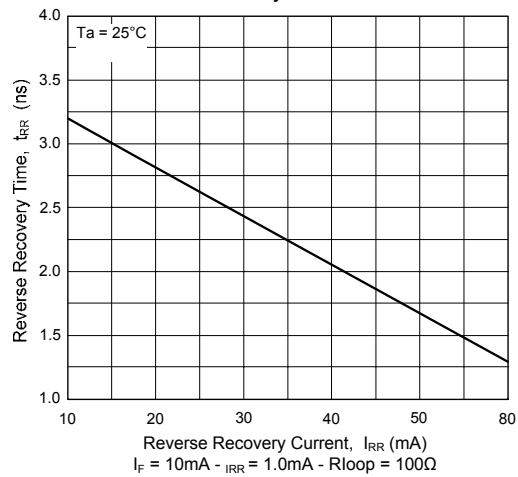


■ TYPICAL CHARACTERISTICS(Cont.)

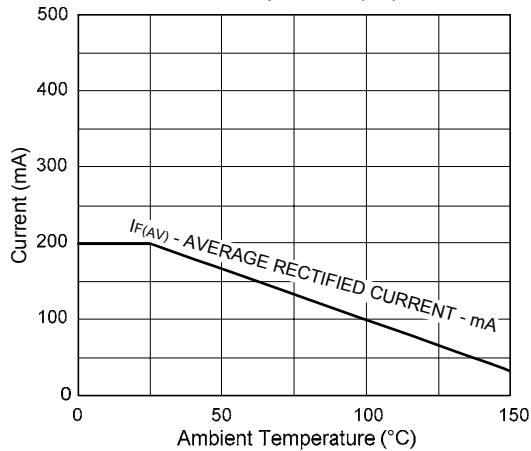
Total Capacitance



Reverse Recovery Time vs. Reverse Recovery Current



Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_a)



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