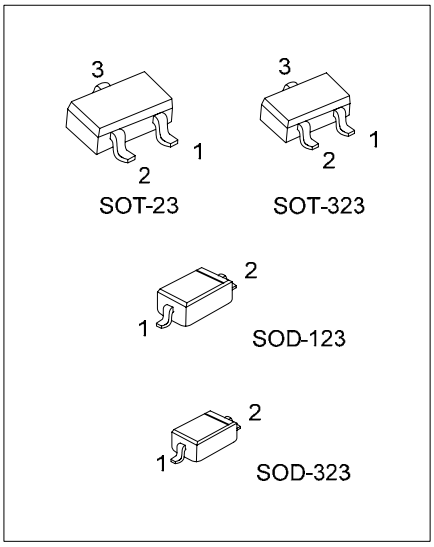
1N4148

DIODE

HIGH-SPEED SWITCHING DIODE



*Pb-free plating product number: 1N4148L

■ 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

■ 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

1N4148L-AE3-R
(1)Packing Type
(2)Package Type
(3)Lead Plating

(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

■ 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

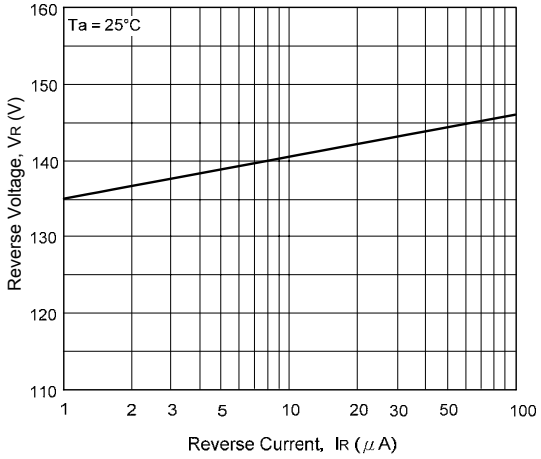
CHARACTERISTIC	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction to Ambient	θ_{JA}	300	℃/W

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

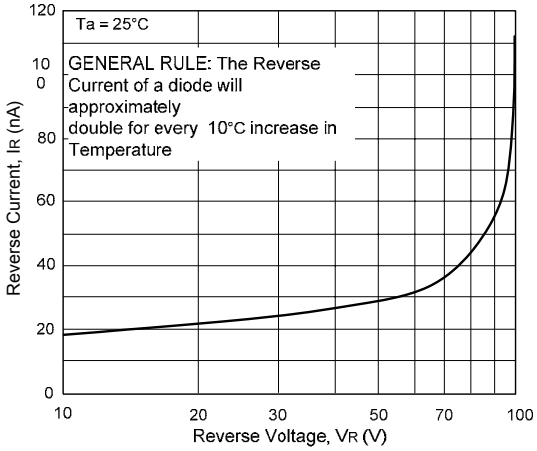
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage	V_R	I_R = 100μA	100			V
		I_R = 5.0μA	75			V
Forward Voltage	V_F	I_F = 10 mA			1.0	V
Reverse Current	I_R	V_R = 20 V			25	nA
		V_R = 20 V, Ta = 150℃			50	μA
		V_R = 75 V			5.0	μA
Total Capacitance	C_T	V_R = 0, f =1.0MHz			4.0	pF
Reverse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

■ TYPICAL CHARACTERISTICS

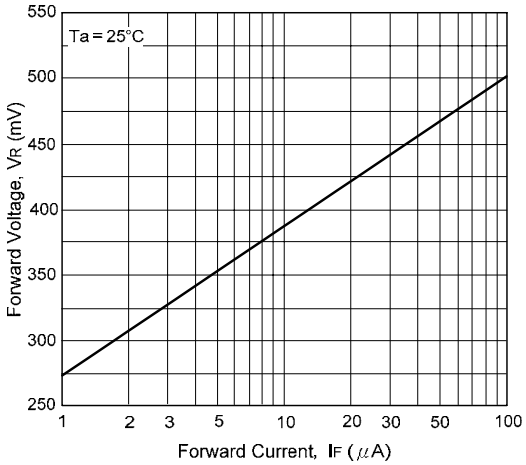
Reverse Voltage vs. Reverse Current
BV - 1.0 ~ 100μA



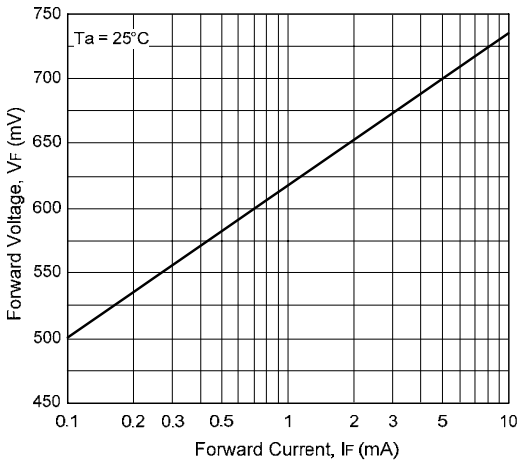
Reverse Current vs. Reverse Voltage
I_R - 10 ~ 100 V



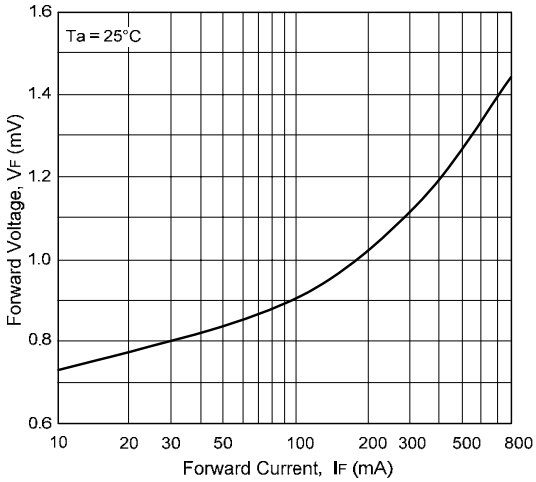
Forward Voltage vs. Forward Current
V_F - 1 ~ 100μA



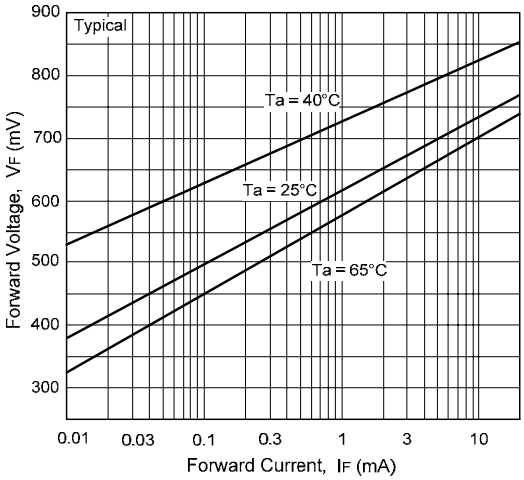
Forward Voltage vs. Forward Current
V_F - 0.1 ~ 10 mA



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

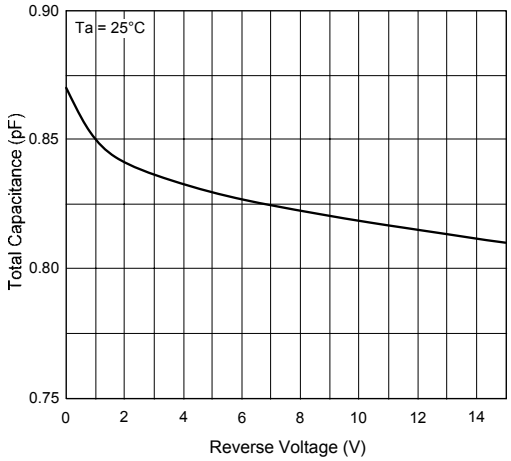


Forward Voltage vs. Ambient Temperature
V_F - 0.01 - 20 mA (-40 ~ +65℃)

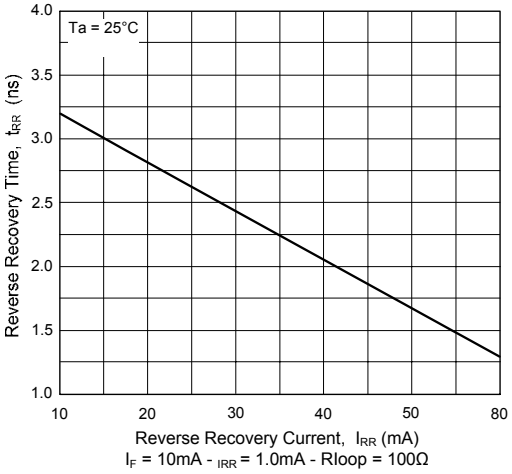


■ TYPICAL CHARACTERISTICS(Cont.)

Total Capacitance



Reverse Recovery Time vs. Reverse Recovery Current



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