

UTC 1N4148

DIODE

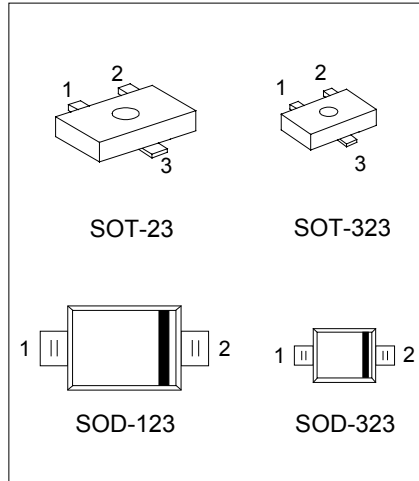
HIGH-SPEED SWITCHING DIODE

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



SOT-23, SOT-323: 1:NC 2:Anode 3:Cathode
SOD-123, SOD-323: 1:Anode 2:Cathode

*Pb-free plating product number:1N4148L

ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise noted.)

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	I _{FSM}	1.0	A
Pulse Width = 1.0 second		4.0	
Power Dissipation	P _D	500	mW
Operating Junction Temperature	T _j	175	°C
Storage Temperature Range	T _{stg}	-65 ~ +200	°C

NOTES:

- (1) These ratings are based on a maximum junction temperature of 200°C.
- (2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

THERMAL CHARACTERISTICS

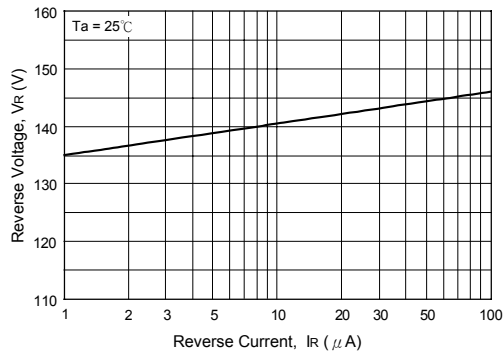
CHARACTERISTIC	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction to Ambient	R _{θJA}	300	°C/W

ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise noted.)

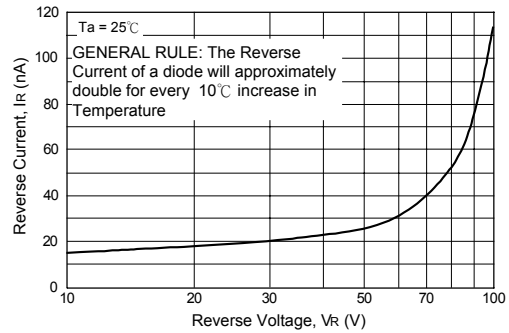
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage	V_R	$I_R = 100 \mu A$ $I_R = 5.0 \mu A$	100 75			V
Forward Voltage	V_F	$I_F = 10 \text{ mA}$			1.0	V
Reverse Current	I_R	$V_R = 20 \text{ V}$ $V_R = 20 \text{ V}, T_a = 150^\circ\text{C}$ $V_R = 75 \text{ V}$			25 50 5.0	nA μA μA
Total 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

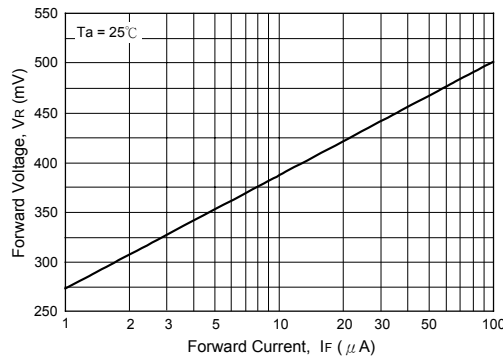
Reverse Voltage vs Reverse Current
BV - 1.0 ~ 100 μA



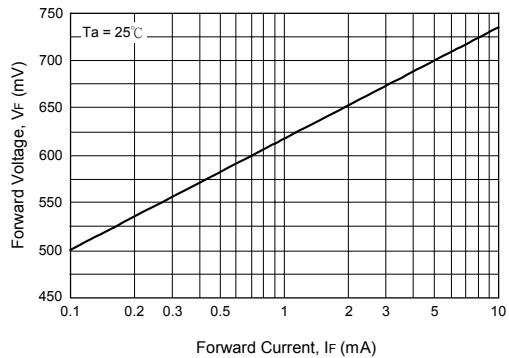
Reverse Current vs Reverse Voltage
IR - 10 ~ 100 V



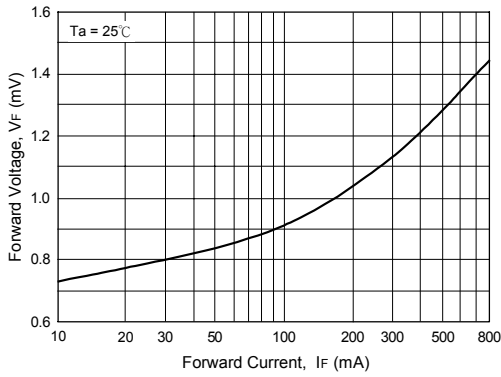
Forward Voltage vs Forward Current
VF - 1 ~ 100 μA



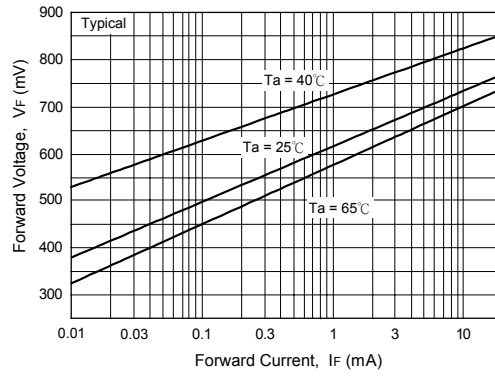
Forward Voltage vs Forward Current
VF - 0.1 ~ 10 mA



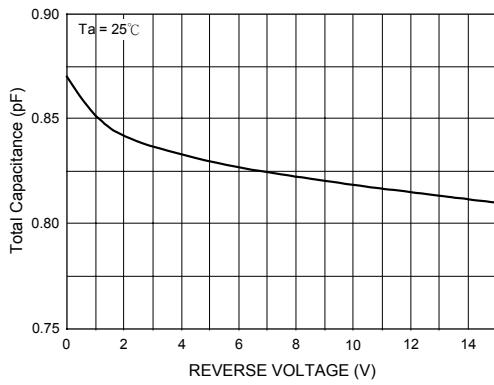
Forward Voltage vs Forward Current
VF - 10 ~ 800 mA



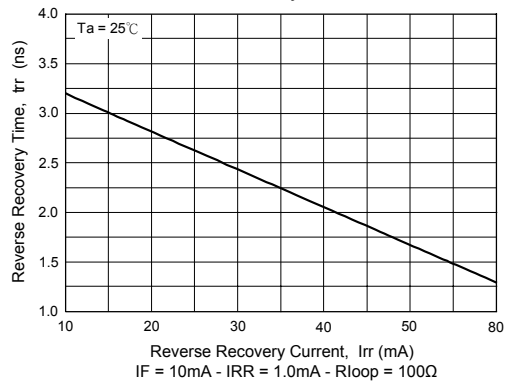
Forward Voltage vs Ambient Temperature
VF - 0.01 - 20 mA (-40 ~ +65°C)



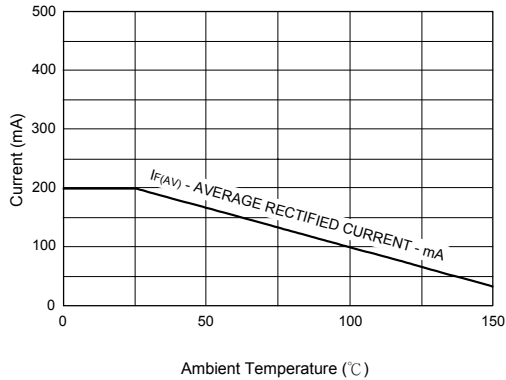
Total Capacitance



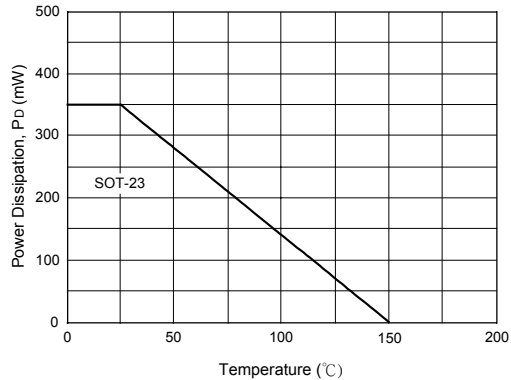
Reverse Recovery Time vs Reverse Recovery Current



Average Rectified Current (IF(AV)) versus Ambient Temperature (Ta)



Power Derating Curve



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