UTC 1N4148 DIODE

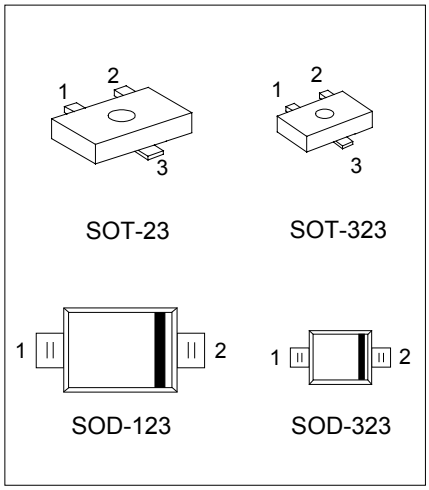
HIGH-SPEED SWITCHING DIODE

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℃, 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 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	℃

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

THERMAL CHARACTERISTICS

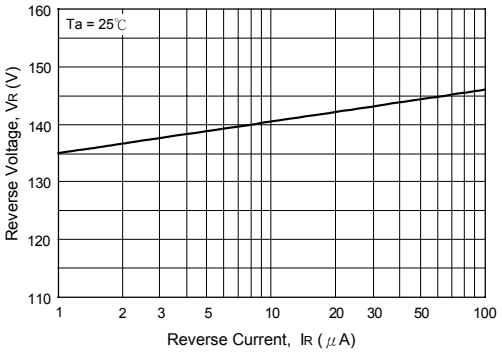
CHARACTERISTIC	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	300	℃/W

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

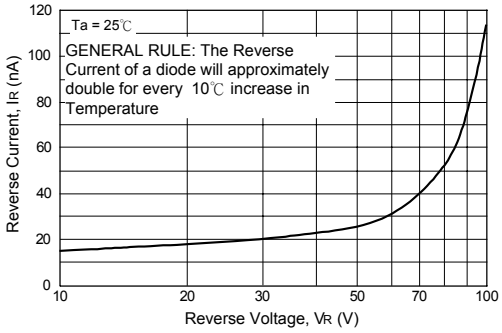
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage	V_R	I_R = 100 μA I_R = 5.0 μA	100 75			V
Forward Voltage	V_F	I_F = 10 mA			1.0	V
Reverse Current	I_R	V_R = 20 V V_R = 20 V, T_a = 150℃ V_R = 75 V			25 50 5.0	nA μA μA
Total Capacitance	C_T	V_R = 0, f =1.0MHz			4.0	pF
Reverse Recovery 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

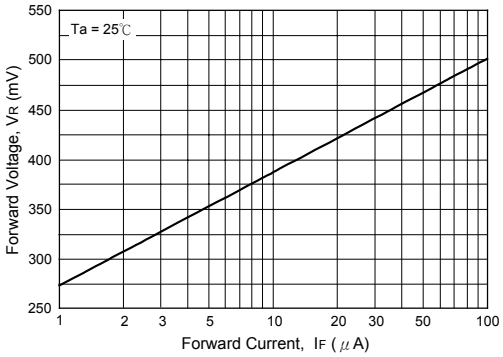
Reverse Voltage vs Reverse Current
BV - 1.0 ~ 100 μA



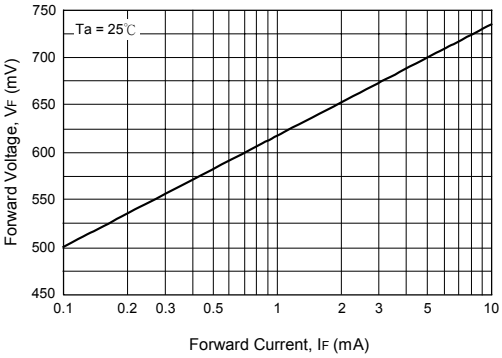
Reverse Current vs Reverse Voltage
IR - 10 ~ 100 V



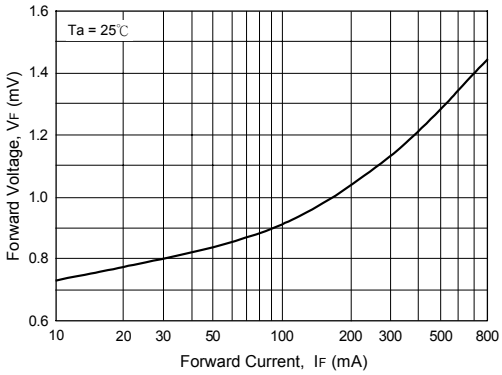
Forward Voltage vs Forward Current
VF - 1 ~ 100 μA



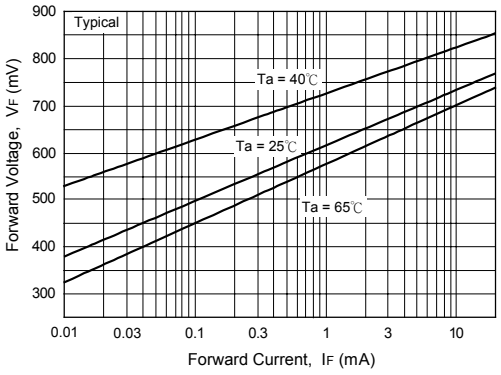
Forward Voltage vs Forward Current
VF - 0.1 ~ 10 mA



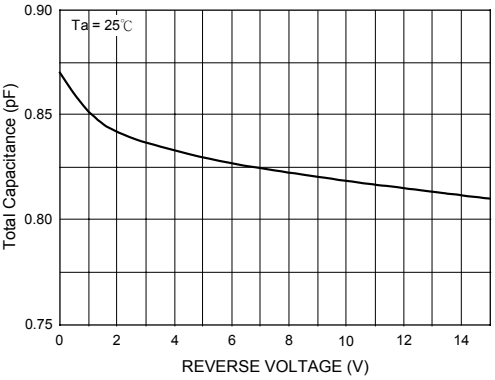
Forward Voltage vs Forward Current
VF - 10 ~ 800 mA



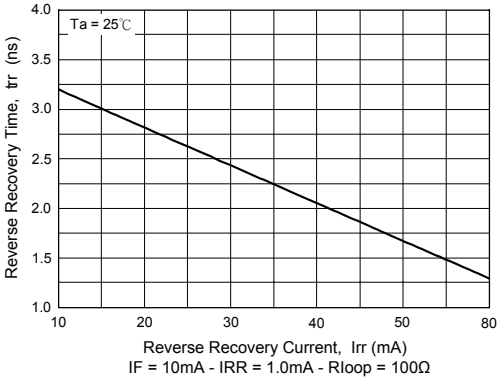
Forward Voltage vs Ambient Temperature
VF - 0.01 - 20 mA (-40 ~ +65℃)



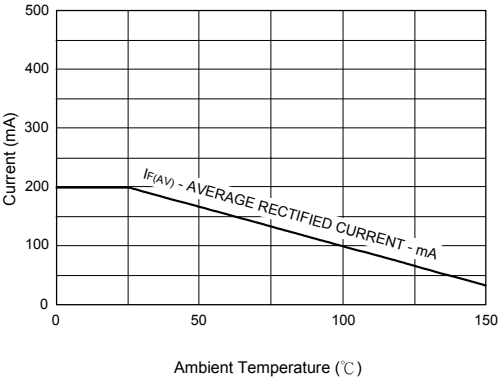
Total Capacitance



Reverse Recovery Time vs Reverse Recovery Current



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



Power Derating Curve