

UTC 1N4148

DIODE

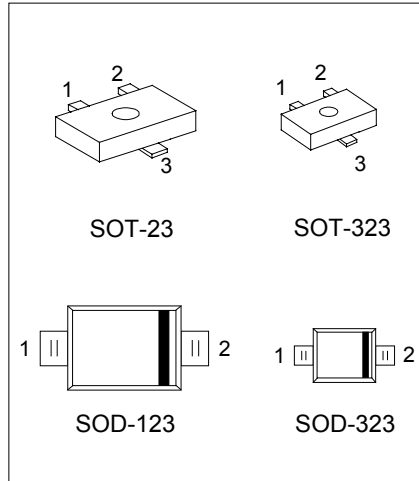
HIGH-SPEED SWITCHING DIODE

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	
Pulse Width = 1.0 microsecond			
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

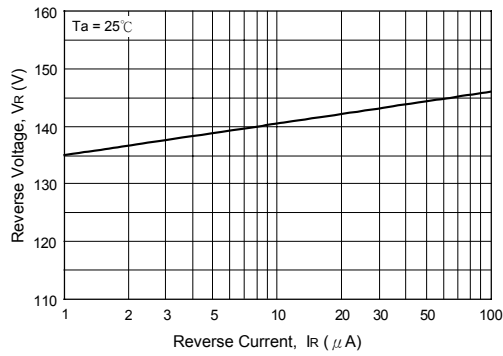
CHARACTERISTIC	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction to Ambient	R _{θJA}	300	°C/W

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

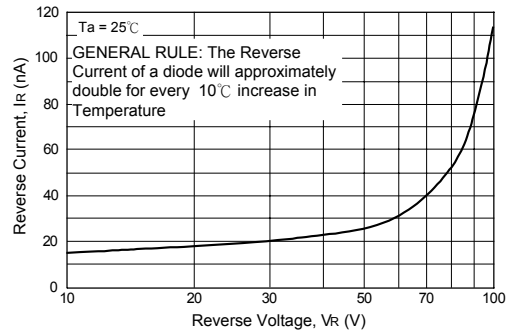
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Breakdown Voltage	V _R	I _R = 100 μA I _R = 5.0 μA	100 75			V
Forward Voltage	V _F	I _F = 10 mA			1.0	V
Reverse Current	I _R	V _R = 20 V V _R = 20 V, T _a = 150°C V _R = 75 V			25 50 5.0	nA μA μA
Total Capacitance	C _T	V _R = 0, f = 1.0MHz			4.0	pF
Reverse 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

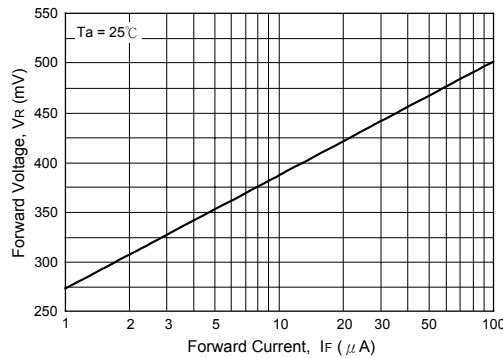
Reverse Voltage vs Reverse Current
BV - 1.0 ~ 100 μA



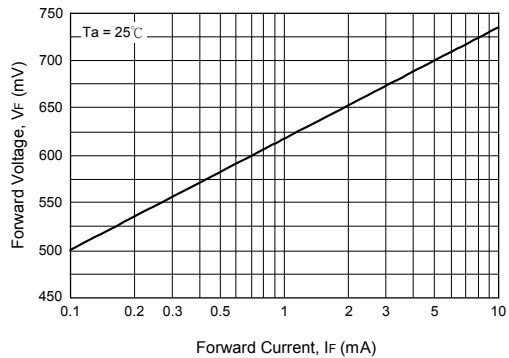
Reverse Current vs Reverse Voltage
IR - 10 ~ 100 V



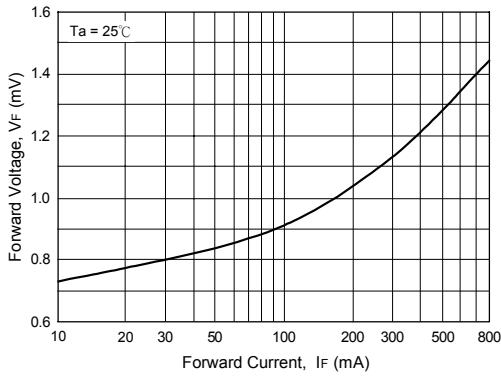
Forward Voltage vs Forward Current
VF - 1 ~ 100 μA



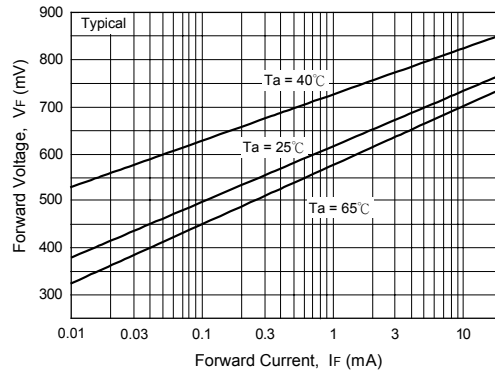
Forward Voltage vs Forward Current
VF - 0.1 ~ 10 mA



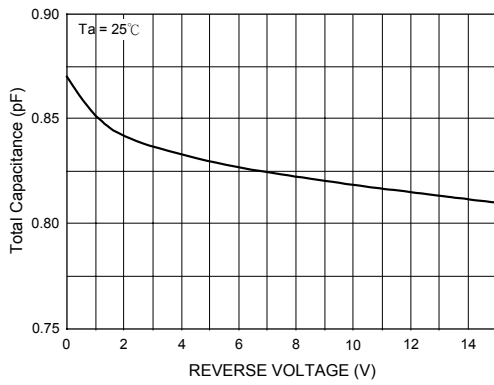
Forward Voltage vs Forward Current
VF - 10 ~ 800 mA



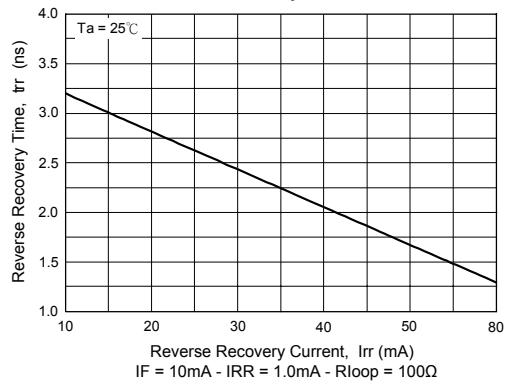
Forward Voltage vs Ambient Temperature
VF - 0.01 - 20 mA (-40 ~ +65°C)



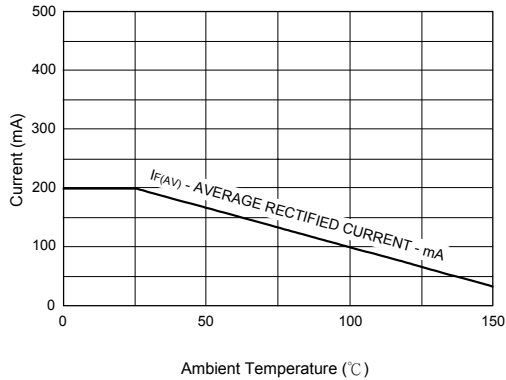
Total Capacitance



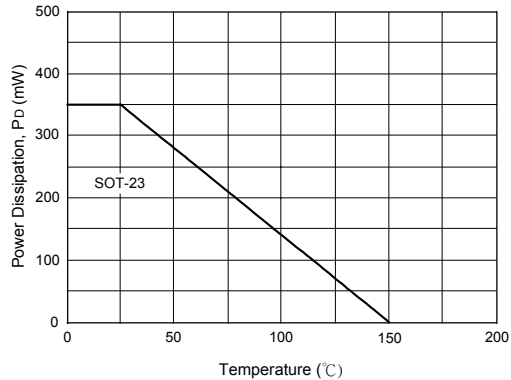
Reverse Recovery Time vs Reverse Recovery Current



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



Power Derating Curve



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