

## 150mA, 75V Switching Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- Compliance to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: 1206(Ceramics)
- Molding compound meets UL flammability classification rating 94HB
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 0.01g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$P_D$	500	mW
$I_{F(AV)}$	150	mA
$V_{RRM}$	75	V
$I_{FSM}$	2	A
$V_F$ at $I_F=100mA$	1.00	V
$T_J$ Max.	150	°C
Package	1206 (Ceramics)	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	VALUE	UNIT	
Power dissipation	$P_D$	500	mW	
Repetitive peak reverse voltage	$V_{RRM}$	75	V	
Non-repetitive peak reverse voltage	$V_{RSM}$	100	V	
Forward current	$I_{F(AV)}$	150	mA	
Repetitive peak forward current	$I_{FRM}$	300	mA	
Non-repetitive peak forward surge current	$I_{FSM}$	tp = 1s square wave	0.5	A
		tp = 8.3ms single half sine wave	2.0	
Junction temperature range	$T_J$	-55 to +150	°C	
Storage temperature range	$T_{STG}$	-55 to +150	°C	

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP.</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	375	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP.</b>	<b>MAX.</b>	<b>UNIT</b>
Reverse breakdown voltage <sup>(2)</sup>	$I_R=100\mu\text{A}, T_J=25^\circ\text{C}$	$V_R$	75	-	V
Forward voltage per diode <sup>(1)</sup>	$I_F=100\text{mA}, T_J=25^\circ\text{C}$	$V_F$	-	1	V
Reverse recovery time	$I_F=10\text{mA}, I_R=10\text{mA}, R_L=100\Omega$	$t_{rr}$	-	4	ns
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$V_R=20\text{V } T_J=25^\circ\text{C}$	$I_R$	-	25	nA
	$V_R=75\text{V } T_J=25^\circ\text{C}$		-	5	μA
Junction capacitance	1 MHz, $V_R=0\text{V}$	$C_J$	-	4	pF

**Notes:**

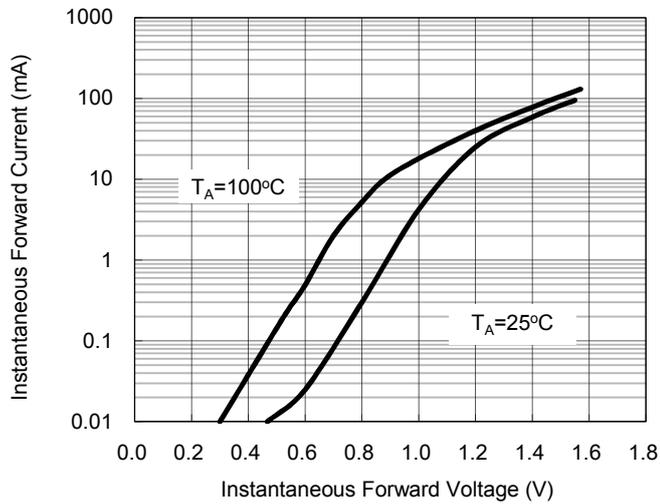
1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
TS4148 RXG	1206	5K / 7" Reel
TS4148 RAG		10K / 13" Reel

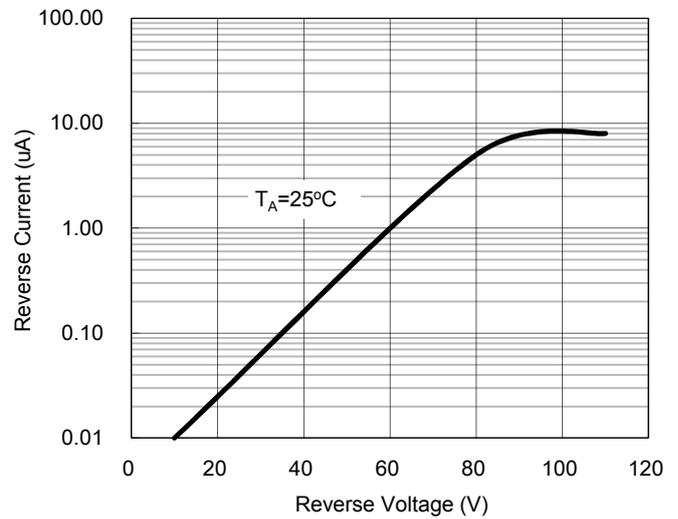
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

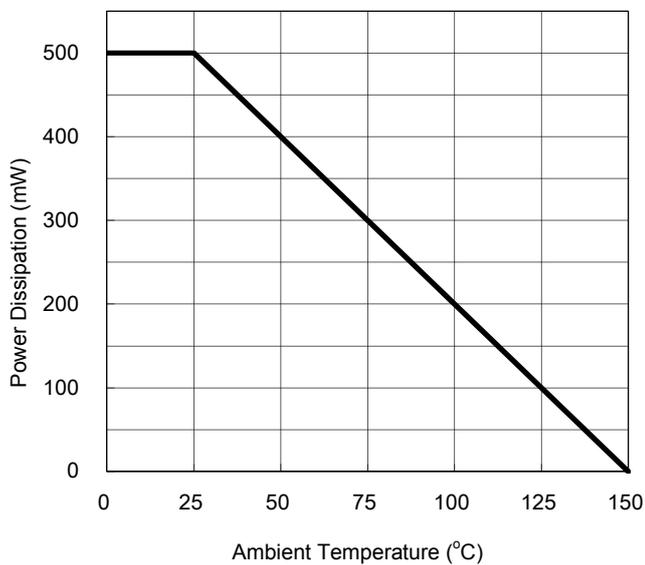
**Fig. 1 Typical Forward Characteristics**



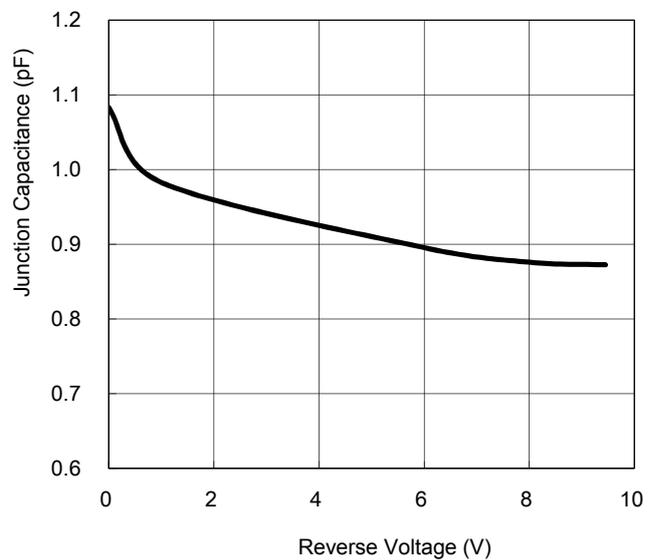
**Fig. 2 Reverse Current VS. Reverse Voltage**



**Fig. 3 Admissible Power Dissipation Curve**



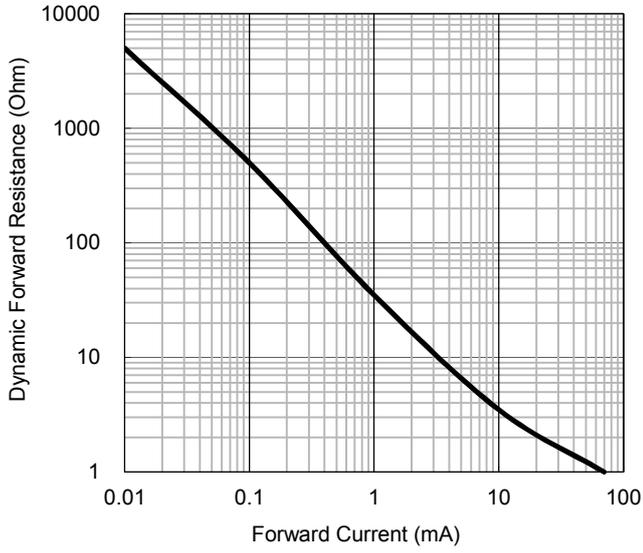
**Fig. 4 Typical Junction Capacitance**



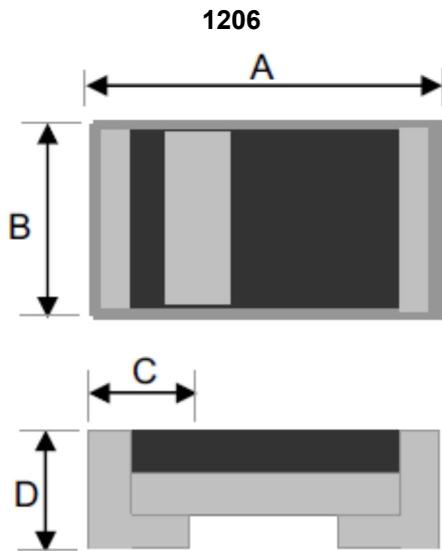
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig. 5 Forward Resistance VS. Forward Current**



**PACKAGE OUTLINE DIMENSION**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	3.00	3.40	0.118	0.134
B	1.30	1.70	0.051	0.067
C	0.35	0.75	0.014	0.030
D	0.65	0.85	0.026	0.033

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