

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	$t_p = 1\text{s}$ square wave	I_{FSM}	0.5	A
	$t_p = 8.3\text{ms}$ single half sine wave		2.0	
Junction temperature range		T_J	-55 to +150	°C
Storage temperature range		T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE

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

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

PARAMETER	CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Reverse breakdown voltage ⁽²⁾	$I_R=100\mu\text{A}$, $T_J=25^\circ\text{C}$	V_R	75	-	V
Forward voltage per diode ⁽¹⁾	$I_F=100\text{mA}$, $T_J=25^\circ\text{C}$	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 ⁽²⁾	$V_R=20\text{V}$ $T_J=25^\circ\text{C}$	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 $PW=0.3\text{ ms}$
2. Pulse test with $PW=30\text{ ms}$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
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

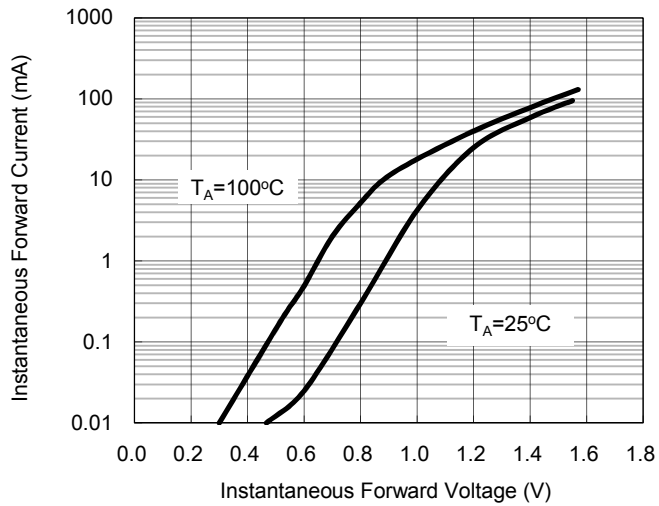


Fig. 2 Reverse Current VS. Reverse Voltage

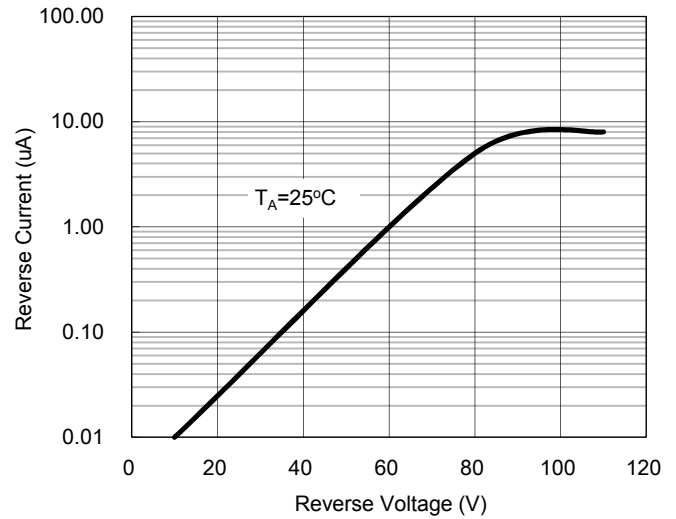


Fig. 3 Admissible Power Dissipation Curve

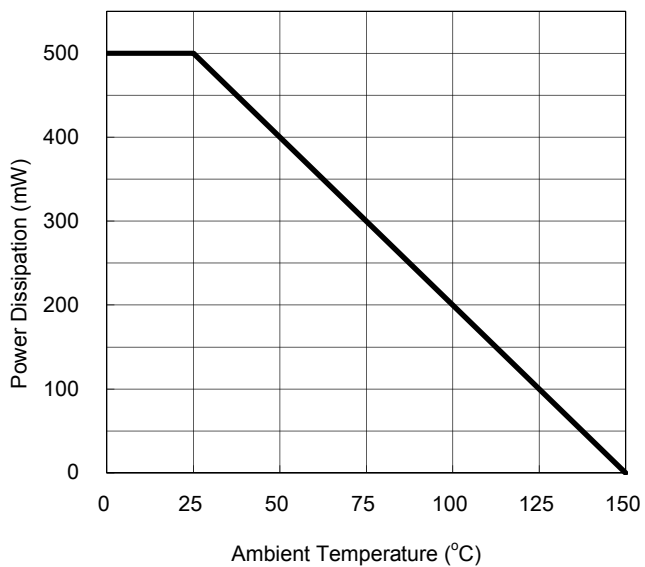
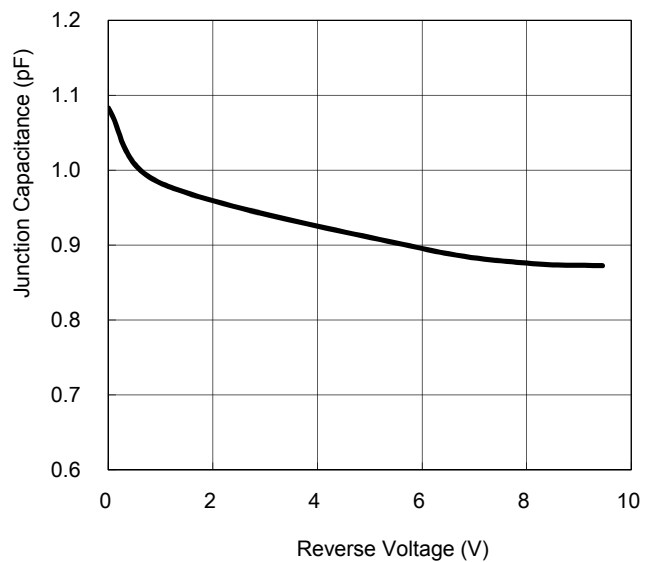


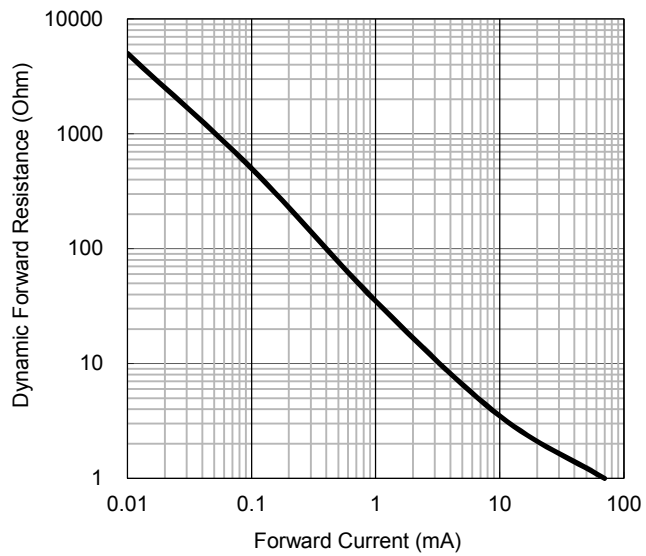
Fig. 4 Typical Junction Capacitance



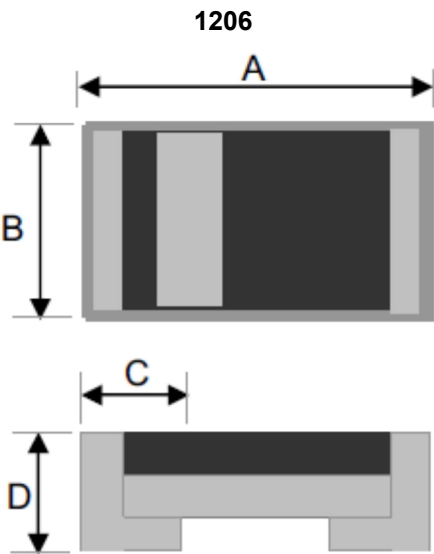
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ 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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