

500mW, High Speed Switching Diode

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Compliant 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)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	150	mA
V_{RRM}	100	V
I_{FSM}	2	A
V_F at $I_F=100mA$	1	V
$T_{J\ MAX}$	150	°C
Package	DO-35	
Configuration	Singal die	

MECHANICAL DATA

- Case: DO-35
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 125 ± 4 mg



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	1N4148	1N4448	1N914B	UNIT
Power dissipation	P_D		500		mW
Repetitive peak reverse voltage	V_{RRM}		100		V
Non-Repetitive peak forward surge current Pulse width = $1\mu\text{s}$, Square wave	I_{FSM}		2		A
Non-Repetitive peak forward current	I_{FM}		450		mA
Forward current	I_F		150		mA
Junction temperature range	T_J		-65 to +150		°C
Storage temperature range	T_{STG}		-65 to +150		°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	240	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS		SYMBOL	MIN	MAX	UNIT
Forward voltage per diode ⁽¹⁾	1N4448, 1N914B	$I_F = 5\text{ mA}$, $T_J = 25^\circ\text{C}$	V_F	0.62	0.72	V
	1N4148	$I_F = 10\text{ mA}$, $T_J = 25^\circ\text{C}$		-	1.00	
	1N4448, 1N914B	$I_F = 100\text{ mA}$, $T_J = 25^\circ\text{C}$		-	1.00	
Reverse voltage ⁽²⁾	$I_R = 100\ \mu\text{A}$, $T_J = 25^\circ\text{C}$		V_R	100	-	V
	$I_R = 5\ \mu\text{A}$, $T_J = 25^\circ\text{C}$			75	-	
Reverse current ⁽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
Reverse recovery time	$I_F = 10\text{ mA}$, $V_R = 6\text{V}$, $R_L = 100\ \Omega$, $I_{RR} = 1\text{ mA}$		t_{rr}	-	4	ns

Notes:

1. Pulse test with $PW = 0.3\text{ ms}$
2. Pulse test with $PW = 30\text{ ms}$

ORDERING INFORMATION		
PART NO.	PACKAGE	PACKING
1N4148 R0G	DO-35	10K / 14" Reel
1N4148 R0	DO-35	10K / 14" Reel
1N4148 A0G	DO-35	5K / Box(Ammo)
1N4148 A0	DO-35	5K / Box(Ammo)
1N4448 R0G	DO-35	10K / 14" Reel
1N4448 R0	DO-35	10K / 14" Reel
1N4448 A0G	DO-35	5K / Box(Ammo)
1N4448 A0	DO-35	5K / Box(Ammo)
1N914B R0G	DO-35	10K / 14" Reel
1N914B R0	DO-35	10K / 14" Reel
1N914B A0G	DO-35	5K / Box(Ammo)
1N914B A0	DO-35	5K / Box(Ammo)

CHARACTERISTICS CURVES

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

Fig.1 Typical Forward Characteristics

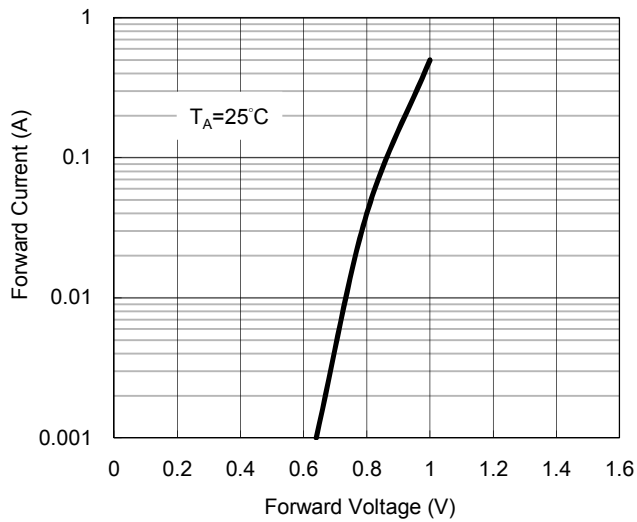


Fig. 2 Reverse Current VS. Reverse Voltage

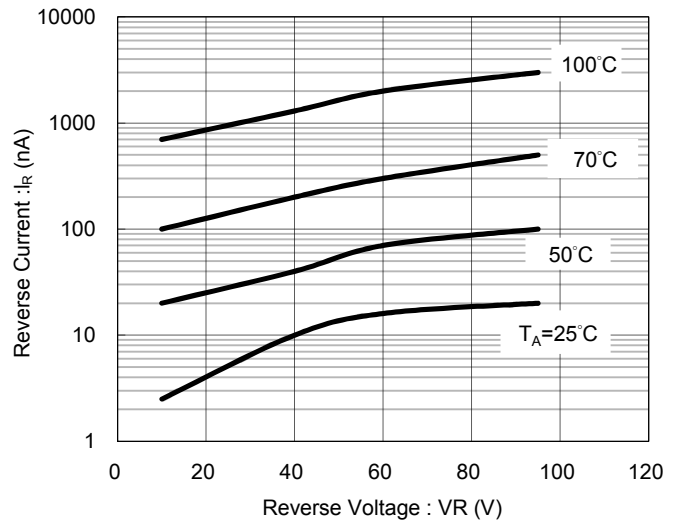


Fig.3 Admissible Power Dissipation Curve

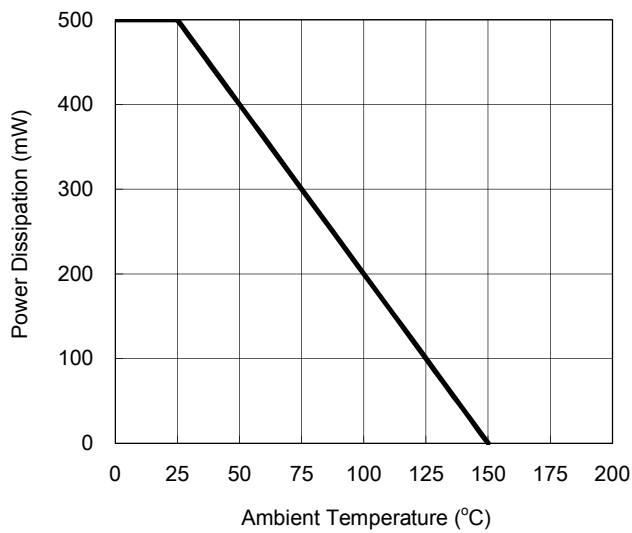
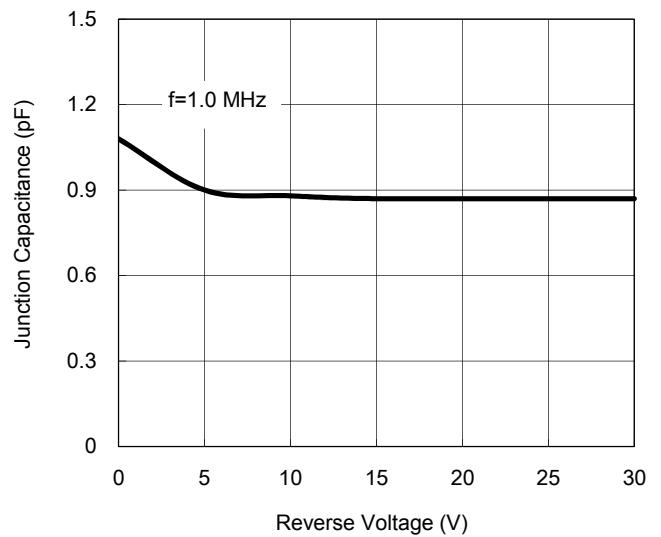
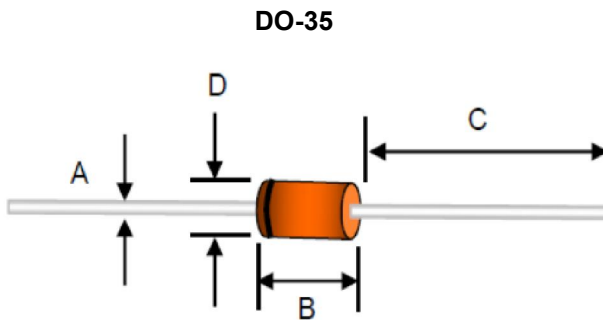


Fig.4 Typical Junction Capacitance



PACKAGE OUTLINE DIMENSION



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	0.34	0.60	0.013	0.024
B	2.90	5.08	0.114	0.200
C	25.40	38.10	1.000	1.500
D	1.30	2.28	0.051	0.090

MARKING DIAGRAM



Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.