

## 125mA, 100V 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
$I_{F(AV)}$	125	mA
$V_{RRM}$	100	V
$I_{FSM}$	1.0	A
$V_F$ at $I_F=100mA$	1.0	V
$T_{J\ MAX}$	125	°C
Package	0603	
Configuration	Single dice	

### MECHANICAL DATA

- Case: 0603
- Molding compound: UL flammability classification rating 94V-0
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte Au plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 3 mg (approximately)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	PART NUMBER	UNIT
Marking code on the device		S5	
Repetitive peak reverse voltage	$V_{RRM}$	100	V
Forward current	$I_{F(AV)}$	125	mA
Non-Repetitive Peak Forward Surge Current	Pulse Width=1 $\mu$ s Pulse Width=8.3ms $I_{FSM}$	2 1	A
Junction temperature range	$T_J$	-40 to +125	°C
Storage temperature range	$T_{STG}$	-40 to +125	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	666	°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>
Forward voltage per diode <sup>(1)</sup>	$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$	$V_F$	0.62	1.00	V
	$I_F = 5\text{mA}, T_J = 25^\circ\text{C}$			0.72	
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
	$V_R = 80\text{V}, T_J = 25^\circ\text{C}$			100	
Junction capacitance	1 MHz, $V_R = 0.5\text{V}$	$C_J$	--	9	$\mu\text{F}$

**Notes:**

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

<b>ORDERING INFORMATION</b>				
<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
TS4448 (Note 1)	RG	G	0603	4K / 7" Reel

**Notes:**

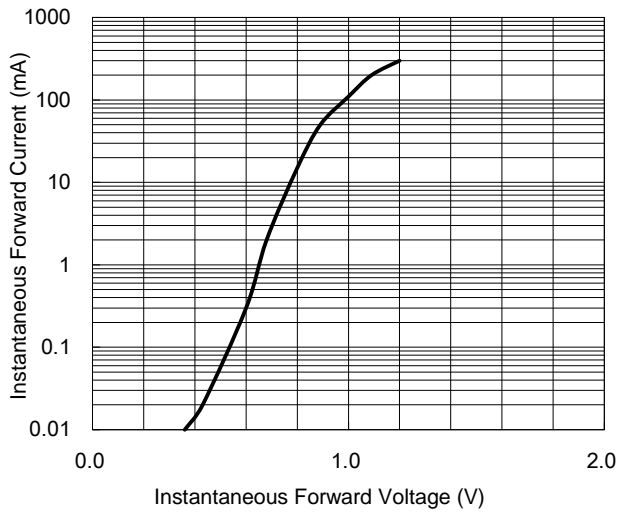
1. Whole series with green compound

<b>EXAMPLE</b>				
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
TS4448 RGG	TS4448	RG	G	Green compound

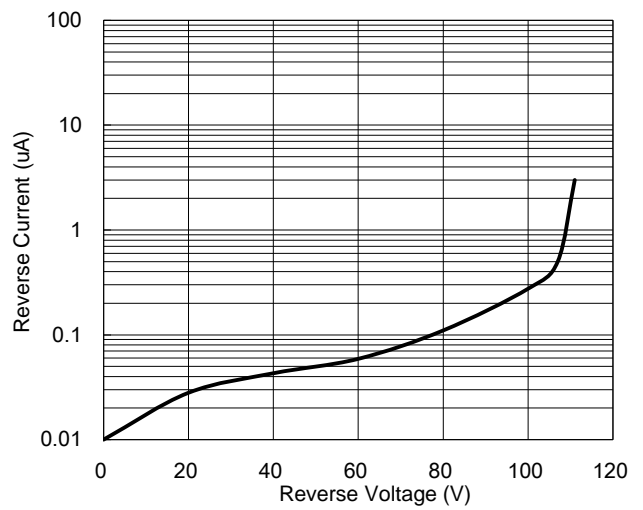
**CHARACTERISTICS CURVES**

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

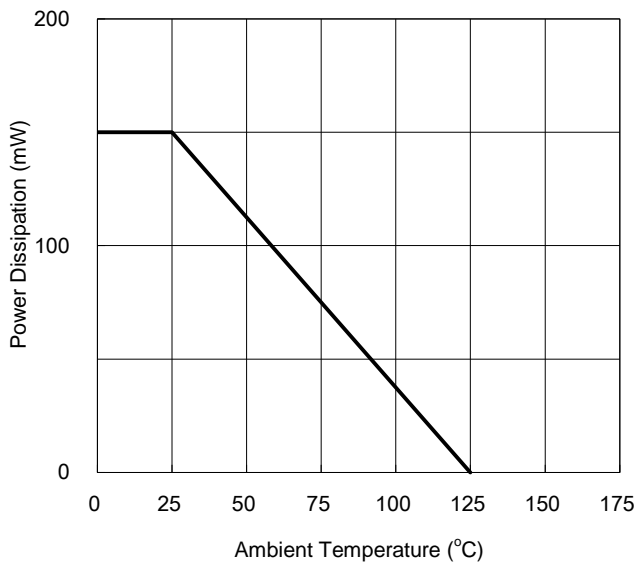
**Fig.1 Typical Forward Characteristics**



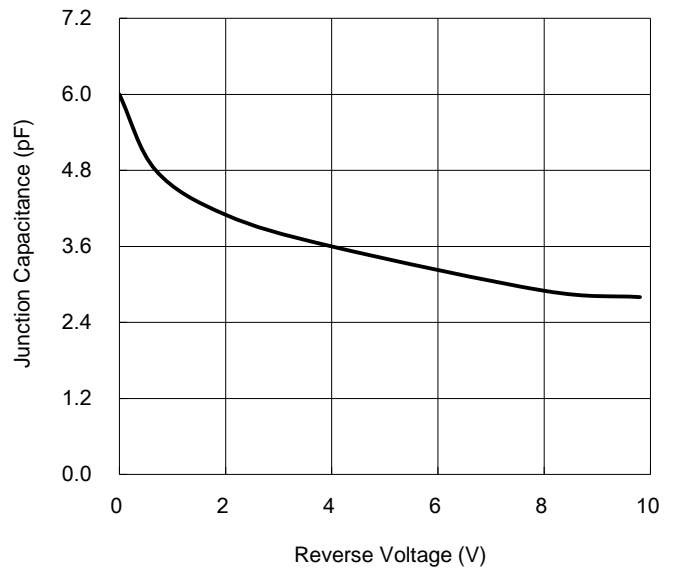
**Fig.2 Reverse Current VS. Reverse Voltage**



**Fig.3 Admissible Power Dissipation Curve**



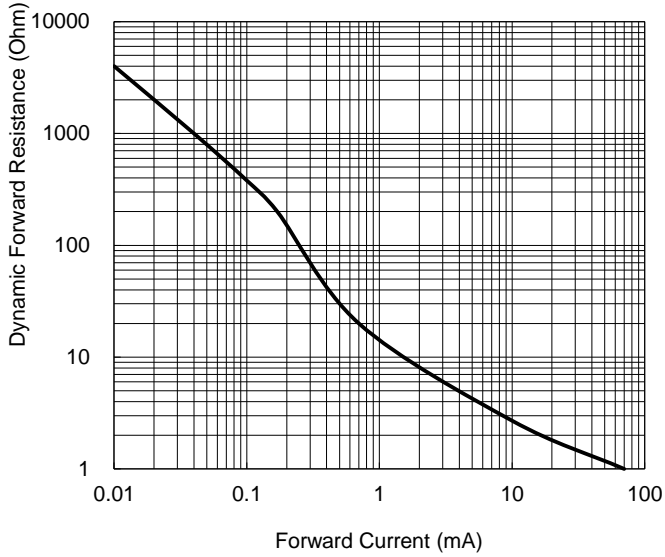
**Fig.4 Typical Junction Capacitance**



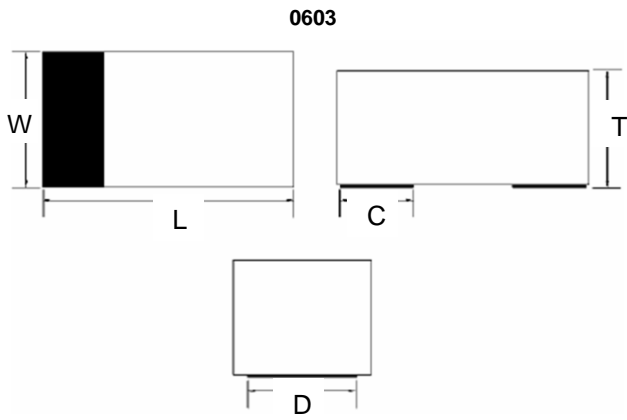
**CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25°C unless otherwise noted)

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



**PACKAGE OUTLINE DIMENSION**



DIM.	Unit(mm)			Unit(inch)		
	Min	Typ	Max	Min	Typ	Max
L	1.60	-	1.80	0.063	-	0.071
W	0.80	-	1.00	0.031	-	0.039
T	0.70	-	0.85	0.028	-	0.033
C	-	0.45	-	-	0.018	-
D	-	0.70	-	-	0.028	-

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