

20A, 100V - 200V Trench Schottky Rectifier

FEATURES

- Patented Trench Schottky technology
- Low power loss/ high efficiency
- Ideal for automated placement
- Guard ring for over-voltage protection
- High forward surge capability
- Compliant to RoHS directive 2011/65/EU and In accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

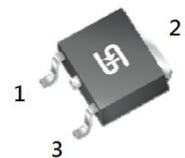
APPLICATIONS

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

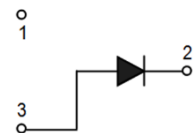
MECHANICAL DATA

- Case: TO-252 (D-PAK)
- Molding compound: UL flammability classification rating 94V-0
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.4 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	20	A
V_{RRM}	100 - 200	V
I_{FSM}	200	A
$T_{J\ MAX}$	150	°C
Package	TO-252 (D-PAK)	
Configuration	Single Die	



TO-252 (D-PAK)



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

PARAMETER	SYMBOL	TSSD20L 100SW	TSSD20L 150SW	TSSD20L 200SW	UNIT
Marking code on the device		20L100SW	20L150SW	20L200SW	
Repetitive peak reverse voltage	V_{RRM}	100	150	200	V
Forward current	$I_{F(AV)}$	20			A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	200			A
Critical rate of rise of off-state voltage	dV/dt	10,000			V/ μs
Junction temperature	T_J	-55 to +150			°C
Storage temperature	T_{STG}	-55 to +150			°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	17	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	58	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	18	°C/W

Thermal Performance Note: Units mounted on recommended PCB (16mm x 16mm Cu pad test board)

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	TSSD20L100SW	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	V_F	0.60	-	V
		$I_F = 20\text{A}, T_J = 25^\circ\text{C}$		0.75	0.87	V
		$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.55	-	V
		$I_F = 20\text{A}, T_J = 125^\circ\text{C}$		0.68	0.79	V
	TSSD20L150SW	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$		0.80	-	V
		$I_F = 20\text{A}, T_J = 25^\circ\text{C}$		0.89	1.05	V
		$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.67	-	V
		$I_F = 20\text{A}, T_J = 125^\circ\text{C}$		0.78	0.90	V
	TSSD20L200SW	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$		0.81	-	V
		$I_F = 20\text{A}, T_J = 25^\circ\text{C}$		0.90	1.1	V
		$I_F = 10\text{A}, T_J = 125^\circ\text{C}$		0.67	-	V
		$I_F = 20\text{A}, T_J = 125^\circ\text{C}$		0.78	0.91	V
Reverse current @ rated V_R per diode ⁽²⁾	TSSD20L100SW	$T_J = 25^\circ\text{C}$	I_R	-	50	μA
		$T_J = 125^\circ\text{C}$		-	20	mA
	TSSD20L150SW	$T_J = 25^\circ\text{C}$		-	20	μA
		$T_J = 125^\circ\text{C}$		-	1	mA
	TSSD20L200SW	$T_J = 25^\circ\text{C}$		-	20	μA
		$T_J = 125^\circ\text{C}$		-	1	mA
Junction capacitance	TSSD20L100SW	1 MHz, $V_R = 4.0\text{V}$	C_J	1000	-	pF
	TSSD20L150SW			920	-	pF
	TSSD20L200SW			880	-	pF

Notes:

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

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
TSSD20LxxSW (Note 1, 2)	RO	G	TO-252 (D-PAK)	2.5KPCS / 13"Reel

Notes:

1. "xx" defines voltage from 100V (TSSD20L100SW) to 200V (TSSD20L200SW)
2. Whole series with green compound (halogen-free)

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSSD20L100SW ROG	TSSD20L100SW	RO	G	Green compound

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

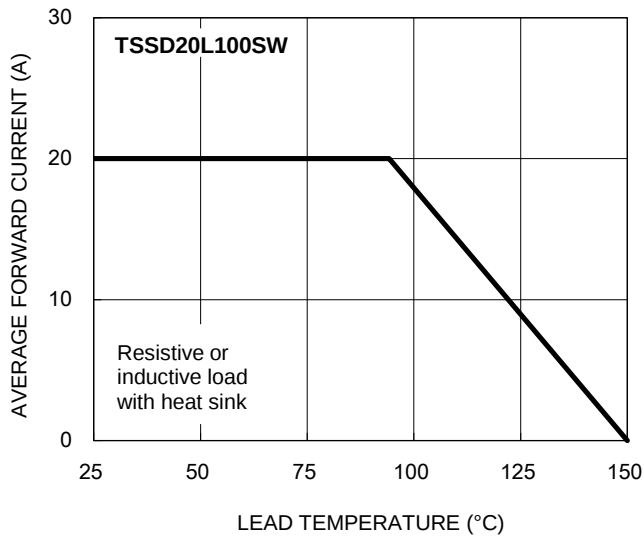


Fig.2 Typical Junction Capacitance

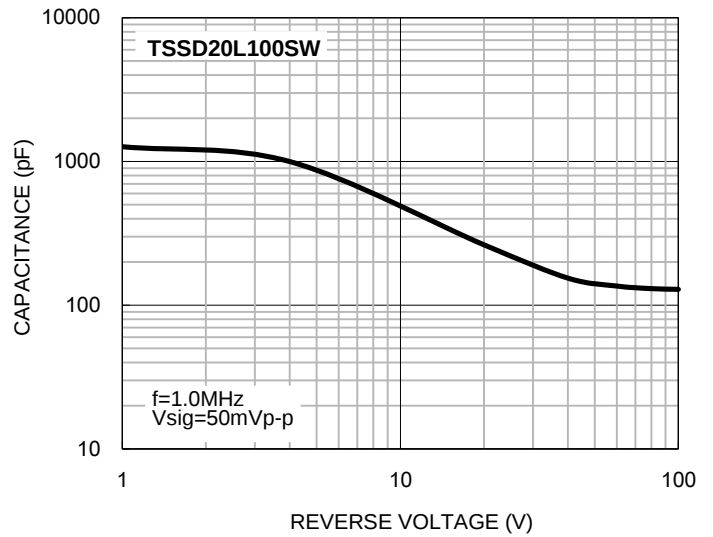


Fig.3 Typical Reverse Characteristics

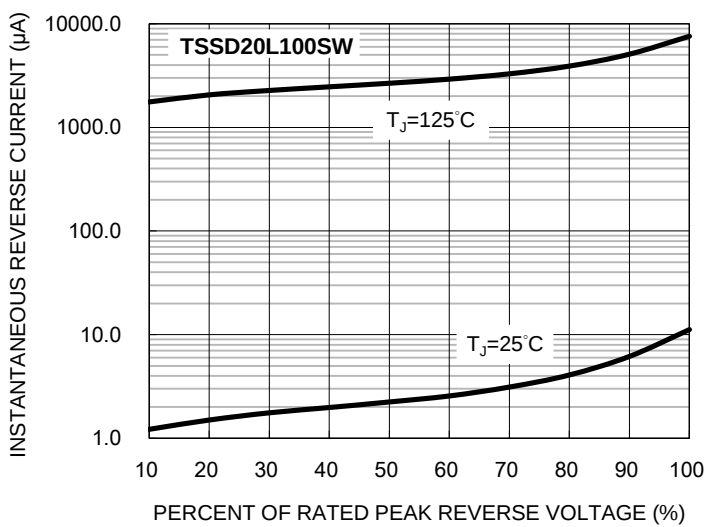
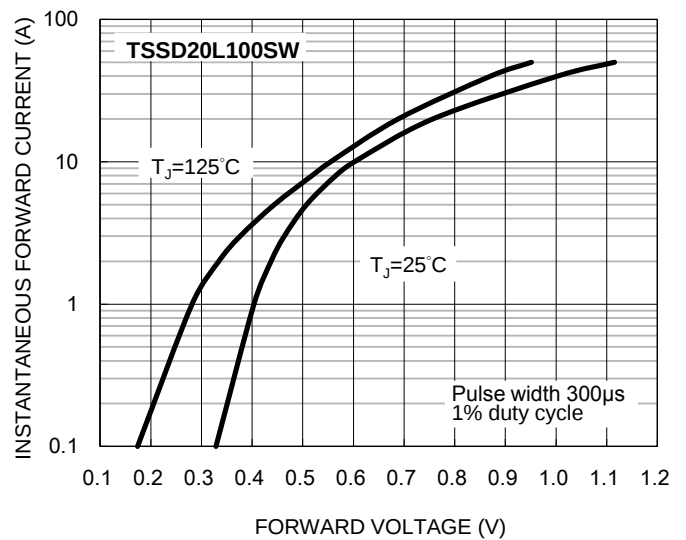


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.5 Forward Current Derating Curve

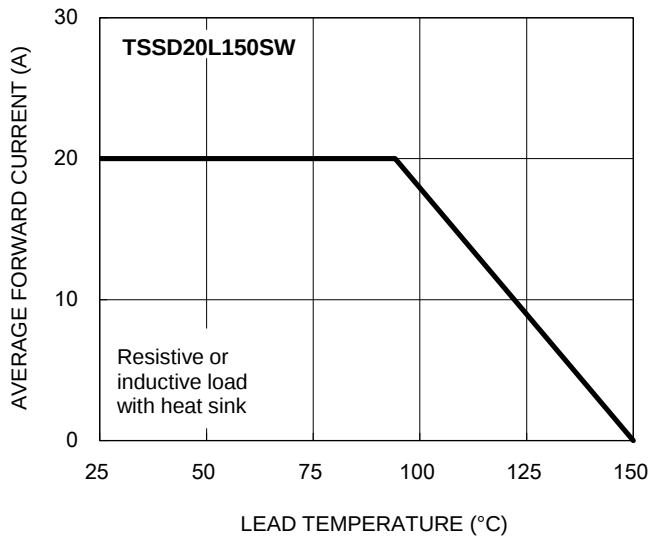


Fig.6 Typical Junction Capacitance

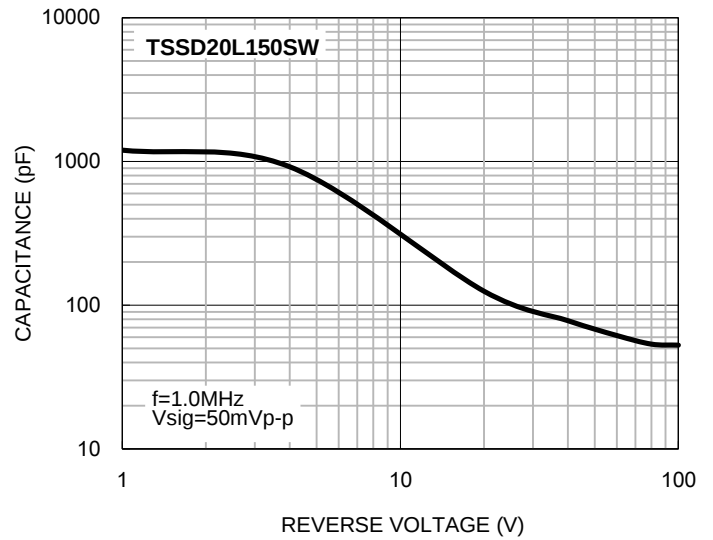


Fig.7 Typical Reverse Characteristics

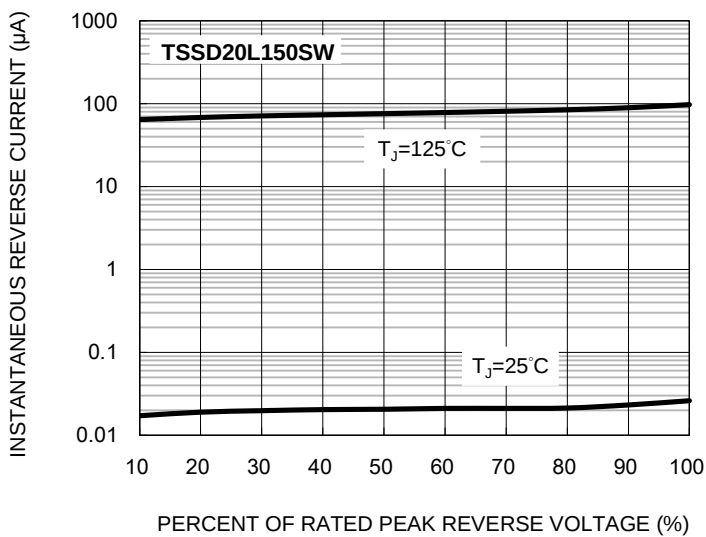
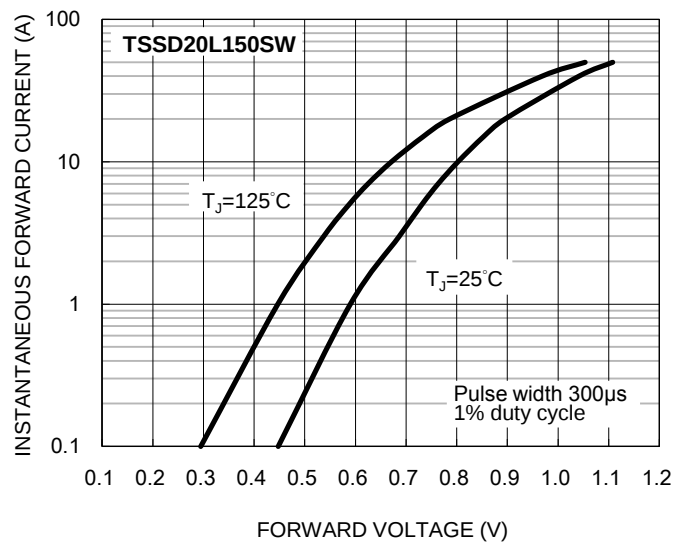


Fig.8 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.9 Forward Current Derating Curve

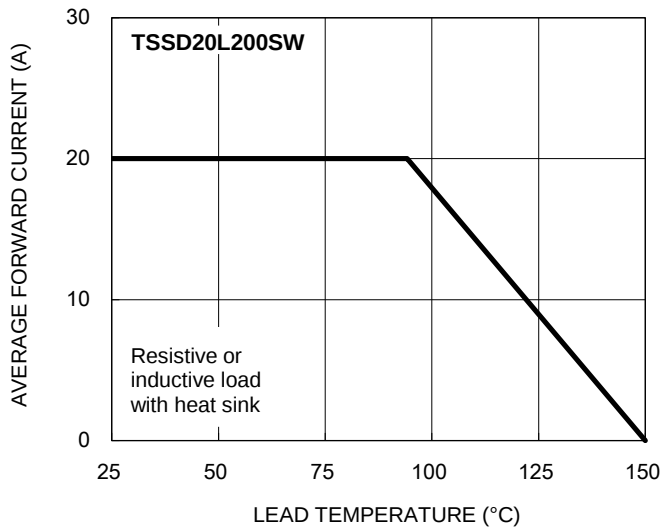


Fig.10 Typical Junction Capacitance

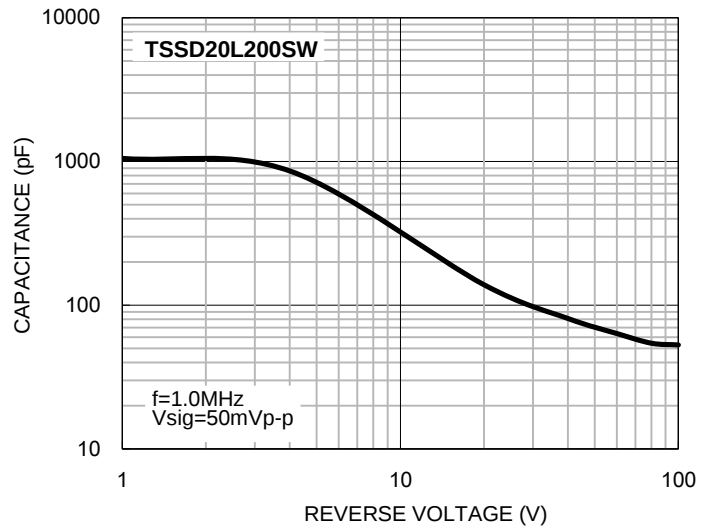


Fig.11 Typical Reverse Characteristics

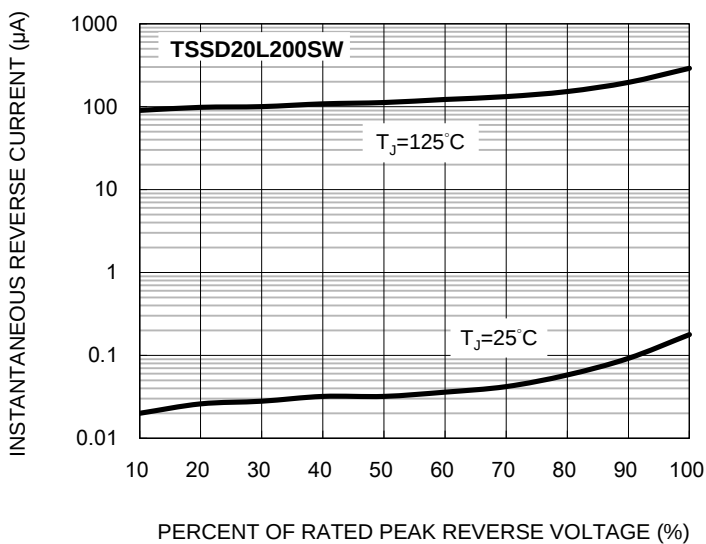
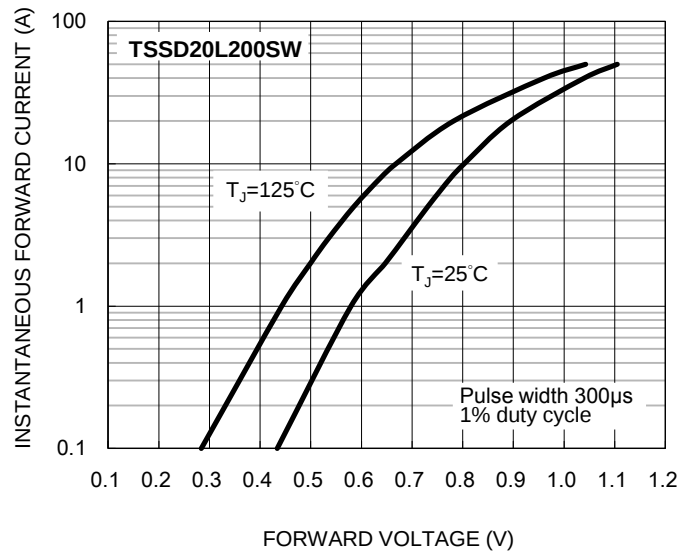
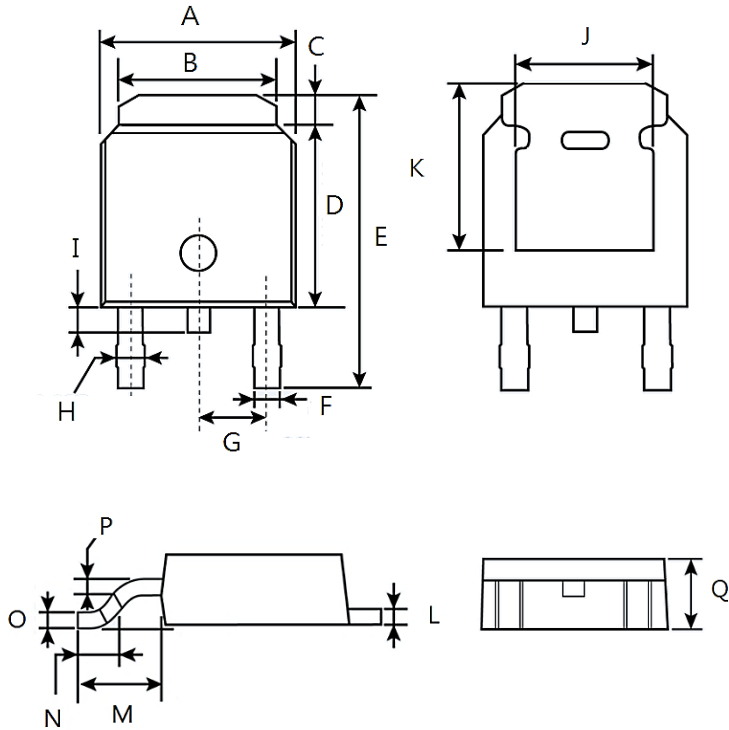


Fig.12 Typical Forward Characteristics

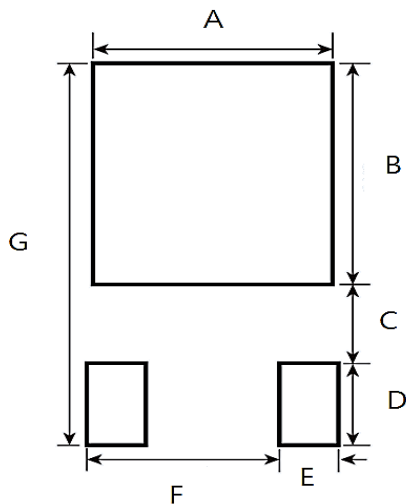


PACKAGE OUTLINE DIMENSIONS

TO-252 (D-PAK)


DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	6.41	6.73	0.252	0.265
B	5.21	5.47	0.205	0.215
C	0.89	1.27	0.035	0.050
D	6.00	6.22	0.236	0.245
E	9.40	10.40	0.370	0.409
F	0.64	0.88	0.025	0.035
G	2.286(REF)		0.090	
H	0.77	1.14	0.030	0.045
I	0.64	1.01	0.025	0.040
J	4.40	-	0.173	-
K	5.30	-	0.209	-
L	0.45	0.58	0.018	0.023
M	2.743(REF)		0.107	
N	1.40	1.77	0.055	0.070
O	0.508(REF)		0.020	
P	0.45	0.60	0.018	0.024
Q	2.20	2.38	0.087	0.094

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	5.69	0.224
B	6.18	0.243
C	2.20	0.087
D	2.29	0.090
E	1.40	0.055
F	4.57	0.180
G	10.67	0.420

MARKING DIAGRAM



P/N = Marking Code

YWW = Date Code

F = Factory Code

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.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9