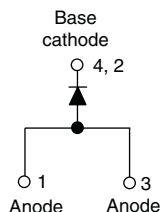


Phase Control SCR, 8 A



D²PAK



DESCRIPTION/FEATURES

The 12TTS08SPbF high voltage series of silicon controlled rectifiers are specifically designed for medium power switching and phase control applications. The glass passivation technology used has reliable operation up to 125 °C junction temperature.



RoHS
COMPLIANT

Typical applications are in input rectification and crow-bar (soft start) and these products are designed to be used with Vishay HPP input diodes, switches and output rectifiers which are available in identical package outlines.

This product has been designed and qualified for industrial level and lead (Pb)-free ("PbF" suffix).

PRODUCT SUMMARY

V_T at 8 A	< 1.2 V
I_{TSM}	140 A
V_{RRM}	800 V

OUTPUT CURRENT IN TYPICAL APPLICATIONS

APPLICATIONS	SINGLE-PHASE BRIDGE	THREE-PHASE BRIDGE	UNITS
Capacitive input filter $T_A = 55\text{ °C}$, $T_J = 125\text{ °C}$, common heatsink of 1 °C/W	13.5	17	A

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{T(AV)}$	Sinusoidal waveform	8	A
$I_{T(RMS)}$		12.5	
V_{RRM}/V_{DRM}		800	V
I_{TSM}		140	A
V_T	8 A, $T_J = 25\text{ °C}$	1.2	V
dV/dt		150	V/ μ s
dI/dt		100	A/ μ s
T_J	Range	- 40 to 125	°C

VOLTAGE RATINGS

PART NUMBER	V_{RRM} , MAXIMUM PEAK REVERSE VOLTAGE V	V_{DRM} , MAXIMUM PEAK DIRECT VOLTAGE V	I_{RRM}/I_{DRM} AT 125 °C mA
12TTS08SPbF	800	800	1.0

12TTS08SPbF High Voltage Series

Vishay High Power Products Phase Control SCR, 8 A



ABSOLUTE MAXIMUM RATINGS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average on-state current	$I_{T(AV)}$	$T_C = 108\text{ }^{\circ}\text{C}$, 180° conduction, half sine wave	8	A
Maximum RMS on-state current	$I_{T(RMS)}$		12.5	
Maximum peak one-cycle non-repetitive surge current	I_{TSM}	10 ms sine pulse, rated V_{RRM} applied, $T_J = 125\text{ }^{\circ}\text{C}$	120	
		10 ms sine pulse, no voltage reapplied, $T_J = 125\text{ }^{\circ}\text{C}$	140	A^2s
Maximum I^2t for fusing	I^2t	10 ms sine pulse, rated V_{RRM} applied, $T_J = 125\text{ }^{\circ}\text{C}$	72	
		10 ms sine pulse, no voltage reapplied, $T_J = 125\text{ }^{\circ}\text{C}$	100	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$t = 0.1$ to 10 ms, no voltage reapplied, $T_J = 125\text{ }^{\circ}\text{C}$	1000	$A^2\sqrt{s}$
Maximum on-state voltage drop	V_{TM}	8 A, $T_J = 25\text{ }^{\circ}\text{C}$	1.2	V
On-state slope resistance	r_t	$T_J = 125\text{ }^{\circ}\text{C}$	16.2	$m\Omega$
Threshold voltage	$V_{T(TO)}$		0.87	V
Maximum reverse and direct leakage current	I_{RM}/I_{DM}	$T_J = 25\text{ }^{\circ}\text{C}$	0.05	mA
		$T_J = 125\text{ }^{\circ}\text{C}$	1.0	
Typical holding current	I_H	$V_R = \text{Rated } V_{RRM}/V_{DRM}$	30	
Maximum latching current	I_L	Anode supply = 6 V, resistive load, initial $I_T = 1\text{ A}$	50	
Maximum rate of rise of off-state voltage	dV/dt	Anode supply = 6 V, resistive load	150	$V/\mu s$
Maximum rate of rise of turned-on current	dI/dt	$T_J = 25\text{ }^{\circ}\text{C}$	100	$A/\mu s$

TRIGGERING				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum peak gate power	P_{GM}		8.0	W
Maximum average gate power	$P_{G(AV)}$		2.0	
Maximum peak positive gate current	$+I_{GM}$		1.5	A
Maximum peak negative gate voltage	$-V_{GM}$		10	V
Maximum required DC gate current to trigger	I_{GT}	Anode supply = 6 V, resistive load, $T_J = -65\text{ }^{\circ}\text{C}$	20	mA
		Anode supply = 6 V, resistive load, $T_J = 25\text{ }^{\circ}\text{C}$	15	
		Anode supply = 6 V, resistive load, $T_J = 125\text{ }^{\circ}\text{C}$	10	
Maximum required DC gate voltage to trigger	V_{GT}	Anode supply = 6 V, resistive load, $T_J = -65\text{ }^{\circ}\text{C}$	1.2	V
		Anode supply = 6 V, resistive load, $T_J = 25\text{ }^{\circ}\text{C}$	1	
		Anode supply = 6 V, resistive load, $T_J = 125\text{ }^{\circ}\text{C}$	0.7	
Maximum DC gate voltage not to trigger	V_{GD}	$T_J = 125\text{ }^{\circ}\text{C}$, $V_{DRM} = \text{Rated value}$	0.2	mA
Maximum DC gate current not to trigger	I_{GD}		0.1	

SWITCHING				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Typical turn-on time	t_{gt}	$T_J = 25\text{ }^{\circ}\text{C}$	0.8	μs
Typical reverse recovery time	t_{rr}	$T_J = 125\text{ }^{\circ}\text{C}$	3	
Typical turn-off time	t_q		100	



12TTS08SPbF High Voltage Series

Phase Control SCR, 8 A Vishay High Power Products

THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER		SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range		T _J , T _{Stg}		- 40 to 125	°C
Maximum thermal resistance, junction to case		R _{thJC}	DC operation	1.5	°C/W
Maximum thermal resistance, junction to ambient		R _{thJA}		62	
Typical thermal resistance, case to heatsink		R _{thCS}	Mounting surface, smooth and greased	0.5	
Approximate weight				2	g
				0.07	oz.
Mounting torque	minimum			6 (5)	kgf · cm (lbf · in)
	maximum			12 (10)	
Marking device			Case style D ² PAK (SMD-220)	12TTS08S	

12TTS08SPbF High Voltage Series

Vishay High Power Products Phase Control SCR, 8 A

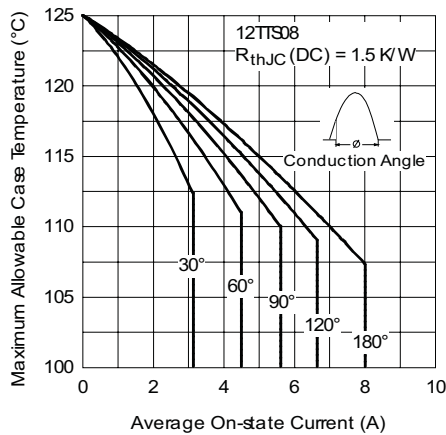


Fig. 1 - Current Rating Characteristics

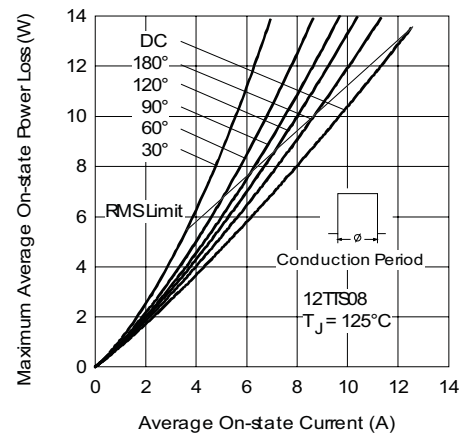


Fig. 4 - On-State Power Loss Characteristics

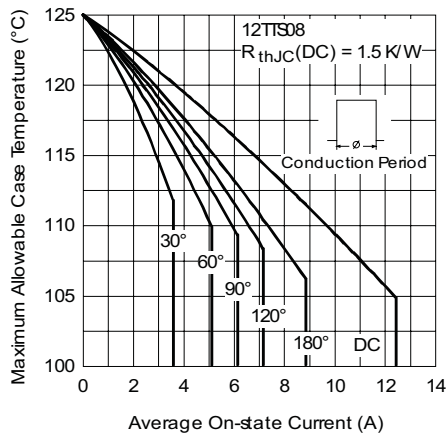


Fig. 2 - Current Rating Characteristics

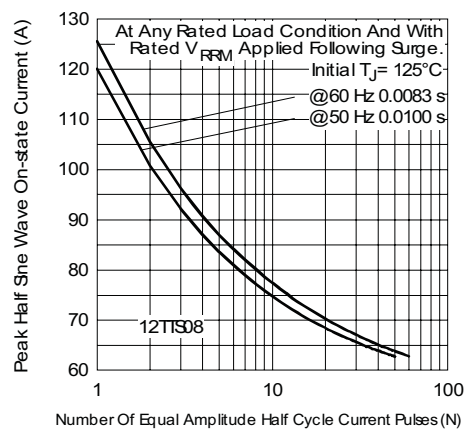


Fig. 5 - Maximum Non-Repetitive Surge Current

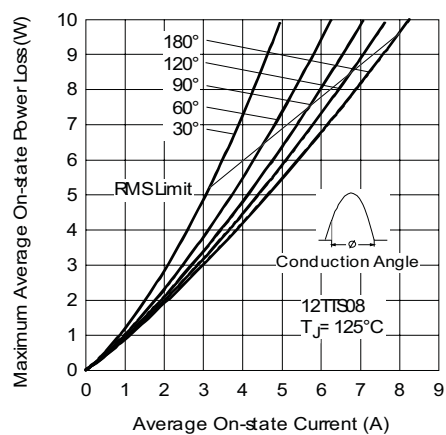


Fig. 3 - On-State Power Loss Characteristics

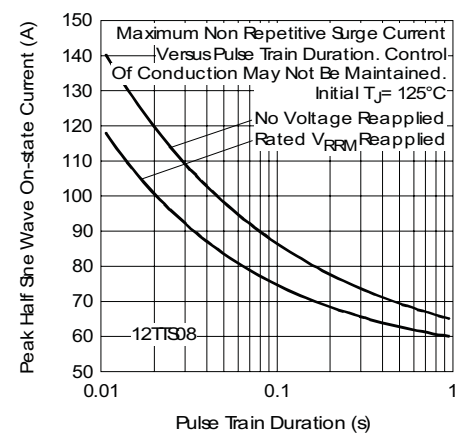


Fig. 6 - Maximum Non-Repetitive Surge Current

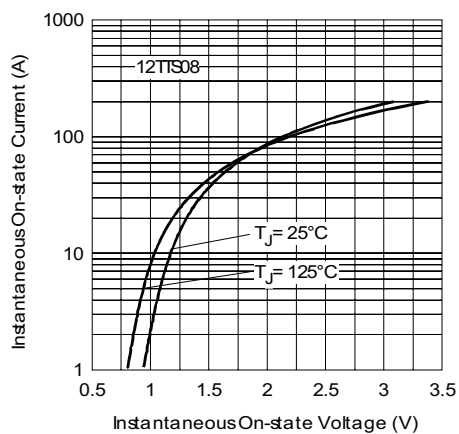


Fig. 7 - On-State Voltage Drop Characteristics

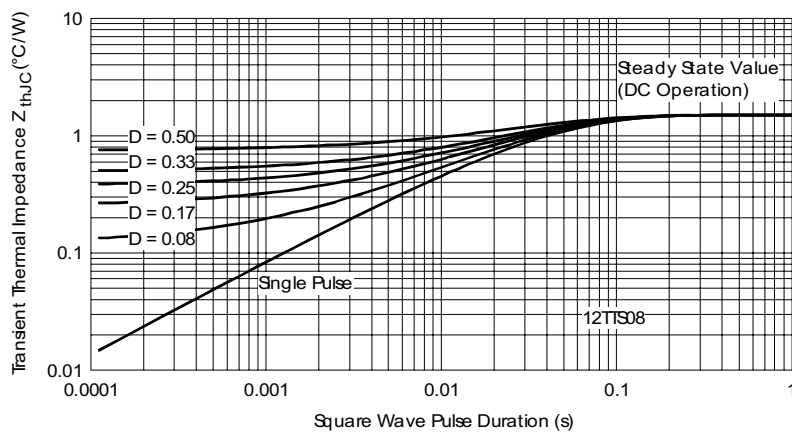


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

12TTS08SPbF High Voltage Series

Vishay High Power Products Phase Control SCR, 8 A



ORDERING INFORMATION TABLE

Device code	12	T	T	S	08	S	TRL	PbF
	1	2	3	4	5	6	7	8

- 1** - Current rating (12.5 A)
- 2** - Circuit configuration:
T = Single thyristor
- 3** - Package:
T = TO-220AC
- 4** - Type of silicon:
S = Standard recovery rectifier
- 5** - Voltage rating (08 = 800 V)
- 6** - S = TO-220 D²PAK (SMD-220) version
- 7** -
 - None = Tube
 - TRL = Tape and reel (left oriented)
 - TRR = Tape and reel (right oriented)
- 8** -
 - None = Standard production
 - PbF = Lead (Pb)-free

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95046
Part marking information	http://www.vishay.com/doc?95054
Packaging information	http://www.vishay.com/doc?95032



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru