



Vishay Intertechnology, Inc.

Rectifiers

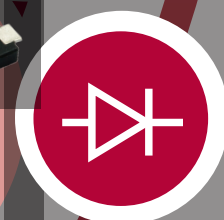
TMBS® IN SMPA

Very Low Profile,
Typical Height of
0.95 mm



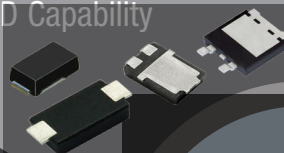
TMBS® IN SlimSMA

Very Low Profile,
Typical Height of
0.95 mm



STANDARD RECTIFIERS IN eSMP® SERIES

Very Low Profile,
ESD Capability



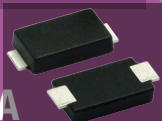
FRED Pt® IN SMF

Very Low Profile,
Typical Height
of 0.98 mm



FRED Pt® IN SlimSMA

Very Low Profile,
Typical Height
of 0.95 mm



FRED Pt® IN SMPD

Low Profile,
Typical Height
of 1.7 mm



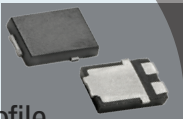
TMBS® IN SMPD

Very Low Profile,
Typical Height of
1.7 mm



FRED Pt® IN SMPC

Very Low Profile,
Typical Height
of 1.1 mm





VISHAY一级代理：威柏电子有限公司 深圳市威柏德电子有限公司



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RECTIFIERS

Focus Products

TMBS® in SlimSMA and SMPA Packages

	Part Number	$I_{F(AV)}$	V_{RRM}	V_F at 125 °C	I_R	I_{FSM}	T_J max.	Package
	VSSAF3L45	3 A	45 V	Typ. = 0.37 V	0.45 mA	80 A	150 °C	DO-221AC (SlimSMA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	VSSAF5L45	5 A	45 V	Typ. = 0.39 V	0.65 mA	100 A	150 °C	DO-221AC (SlimSMA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V4PAL45	4 A	45 V	Typ. = 0.41 V	0.45 mA	80 A	150 °C	DO-221BC (SMPA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V8PAL45	8 A	45 V	Typ. = 0.4 V	1.85 mA	120 A	150 °C	DO-221BC (SMPA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V4PAN50	4 A	50 V	Typ. = 0.46 V	0.6 mA	80 A	150 °C	DO-221BC (SMPA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V8PAN50	8 A	50 V	Typ. = 0.41 V	1.5 mA	120 A	150 °C	DO-221BC (SMPA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V8PAL50	8 A	50 V	Typ. = 0.4 V	0.4 mA	120 A	150 °C	DO-221BC (SMPA)
	Very low profile – typical height of 0.95 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							

TMBS® in SMPD Packages

	Part Number	$I_{F(AV)}$	V_{RRM}	V_F at 125 °C	I_R	I_{FSM}	T_J max.	Package
	V30D45C	30 A	45 V	Typ. = 0.4 V	1.5 mA	200 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V60D45C	60 A	45 V	Typ. = 0.48 V	2.5 mA	320 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V30DL50C	30 A	50 V	Typ. = 0.42 V	1.8 mA	300 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V30D60C	30 A	60 V	Typ. = 0.57 V	1.2 mA	170 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V60D100C	60 A	100 V	Typ. = 0.66 V	1.0 mA	320 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V60D120C	60 A	120 V	Typ. = 0.7 V	0.8 mA	320 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							
	V40DM120C	40 A	120 V	Typ. = 0.64 V	0.5 mA	250 A	150 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free							

ESD Capability Standard Rectifier in SMPD Packages

	Part Number	$I_{F(AV)}$	V_{RRM}	V_F at 125 °C	I_R	I_{FSM}	T_J max.	Package
	SE10DB to SE10DJ	10 A	100 V to 600 V	Typ. = 0.96 V	15 μ A	110 A	175 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							
	SE12DB to SE12DJ	12 A	100 V to 600 V	Typ. = 0.96 V	20 μ A	125 A	175 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							
	SE20DB to SE20DJ	20 A	100 V to 600 V	Typ. = 1.03 V	25 μ A	150 A	175 °C	TO-263AC (SMPD)
	Very low profile – typical height of 1.7 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							

ESD Capability Standard Rectifier in SMP, SlimSMA, and SMPD Packages

	Part Number	$I_{F(AV)}$	V_{RRM}	V_F at 125 °C	I_R	I_{FSM}	T_J max.	Package
	SE20PB thru SE20PJ	2 A	100 V to 600 V	Typ. = 0.85 V	5 μ A	32 A	175 °C	DO-220AA (SMP)
	Very low profile – typical height of 1.0 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							
	SE20AFB thru SE20AFJ	2 A	100 V to 600 V	Typ. = 0.86 V	5 μ A	35 A	175 °C	DO-221AC (SlimSMA)
	Very low profile – typical height of 0.95 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							
	SE30AFB thru SE30AFJ	3 A	100 V to 600 V	Typ. = 0.86 V	10 μ A	40 A	175 °C	DO-221AC (SlimSMA)
	Very low profile – typical height of 0.95 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							
	SE40PB thru SE40PJ	4 A	100 V to 600 V	Typ. = 0.91 V	10 μ A	60 A	175 °C	TO-277A (SMPD)
	Very low profile – typical height of 1.1 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							
	SE70PB thru SE70PJ	7 A	100 V to 600 V	Typ. = 0.87 V	20 μ A	120 A	175 °C	TO-277A (SMPD)
	Very low profile – typical height of 1.1 mm; ESD capability; AEC-Q101-qualified; RoHS-compliant; halogen-free							



RECTIFIERS

Focus Products

FRED Pt® in SMF, SlimSMA, SMPC, and SMPD Packages

Part Number	$I_{F(AV)}$	V_{RRM}	V_F	I_R	I_{FSM}	$T_J \text{ max.}$	Package	$T_{rr(ns)}$
 VS-1EFH02HM3	1 A	200 V	Typ. = 0.73 V	2 μ A	40 A	175 °C	TO-219AB (SMF)	25
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-2EFH02HM3	2 A	200 V	Typ. = 0.75 V	2 μ A	50 A	175 °C	TO-219AB (SMF)	25
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-2EJH02HM3	2 A	200 V	Typ. = 0.72 V	2 μ A	65 A	175 °C	TO-221AC (SlimSMA)	25
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-3EJH02HM3	3 A	200 V	Typ. = 0.74 V	2 μ A	85 A	175 °C	TO-221AC (SlimSMA)	30
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-4CSH02HM3	2 x 2 A	200 V	Typ. = 0.75 V	2 μ A	90 A	175 °C	TO-277A (SMPC)	24
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-4ESH02HM3	4 A	200 V	Typ. = 0.73 V	2 μ A	130 A	175 °C	TO-277A (SMPC)	27
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-6ESH02HM3	6 A	200 V	Typ. = 0.74 V	2 μ A	150 A	175 °C	TO-277A (SMPC)	28
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-6CSH02HM3	2 x 3 A	200 V	Typ. = 0.74 V	2 μ A	150 A	175 °C	TO-277A (SMPC)	27
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-8CSH02HM3	2 x 4 A	200 V	Typ. = 0.72 V	2 μ A	130 A	175 °C	TO-277A (SMPC)	25
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-10CSH02HM3	2 x 5 A	200 V	Typ. = 0.75 V	2 μ A	130 A	175 °C	TO-277A (SMPC)	25
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-6ESU06HM3	6 A	600 V	Typ. = 0.95 V	5 μ A	120 A	175 °C	TO-277A (SMPC)	42
Very low profile – typical height of 0.95 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-16CDH02HM3	2 x 8 A	200 V	Typ. = 0.77 V	2 μ A	190 A	175 °C	TO-263AC (SMPD)	23
Very low profile – typical height of 1.7 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-20CDH02HM3	2 x 10 A	200 V	Typ. = 0.77 V	2 μ A	210 A	175 °C	TO-263AC (SMPD)	22
Very low profile – typical height of 1.7 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-10CDH06HM3	2 x 5 A	600 V	Typ. = 1 V	3 μ A	110 A	175 °C	TO-263AC (SMPD)	35
Very low profile – typical height of 1.1 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-12CDU06HM3	2 x 6 A	600 V	Typ. = 0.89 V	5 μ A	200 A	175 °C	TO-263AC (SMPD)	45
Very low profile – typical height of 1.1 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-16EDU06HM3	16 A	600 V	Typ. = 0.91 V	15 μ A	160 A	175 °C	TO-263AC (SMPD)	55
Very low profile – typical height of 1.1 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-16CDU06HM3	2 x 8 A	600 V	Typ. = 0.94 V	5 μ A	200 A	175 °C	TO-263AC (SMPD)	45
Very low profile – typical height of 1.1 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 VS-30CDU06HM3	2 x 15 A	600 V	Typ. = 0.9 V	15 μ A	300 A	175 °C	TO-263AC (SMPD)	55
Very low profile – typical height of 1.1 mm; FRED Pt technology; $T_J \text{ max.}$ = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								

WORLDWIDE LEADER IN POWER RECTIFIERS AND LOW-PROFILE, SURFACE-MOUNT PACKAGES

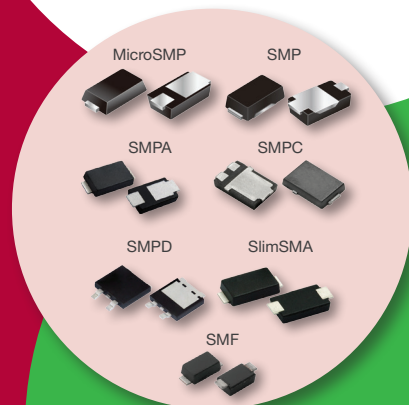


Advantages of Vishay Rectifiers

- Very low-profile, surface-mount packages
- Trench MOS Barrier Schottky technology
- ESD capability standard rectifiers
- FRED Pt® ultrafast recovery rectifiers

For the Following Applications

- Switch mode power supplies (SMPS)
- Smartphone chargers
- Automotive
- Telecom



Switch mode power supply
TMBS® Trench MOS Barrier Schottky rectifiers help maximize efficiency in switch mode power supply applications



Automotive power line polarity protection

ESD capability standard rectifiers and FRED Pt® ultrafast recovery rectifiers for polarity protection in automotive applications help to make designs more efficient, robust, and cost-effective, with increased power density



Useful Links

- Rectifiers
www.vishay.com/diodes/rectifiers/
- Diodes / rectifiers in eSMP® series
www.vishay.com/landingpage/tradeshows/diodes/
- Automotive-qualified products
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**AEC-Q101
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FREE**

A **WORLD OF**
SOLUTIONS