

# Rectifiers

**Very Low Profile,**  
Typical Height of 0.95 mm

TMBS® in SlimSMA



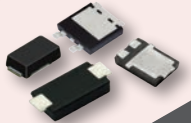
**Very Low Profile,**  
Typical Height of 0.95 mm

TMBS® in SMPA



**Very Low Profile,**  
ESD Capability

STANDARD RECTIFIERS in eSMP® Series



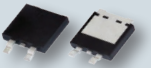
**Very Low Profile,**  
Typical Height of 0.98 mm

FRED Pt® in SMF



**Low Profile,**  
Typical Height of 1.7 mm

FRED Pt® in SMPD



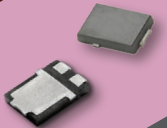
**Very Low Profile Packages,**  
Typical Height of 0.95 mm (SlimSMA),  
Typical Height of 0.98 mm (SlimDPAK)

FRED Pt® in SlimSMA and SlimDPAK



**Very Low Profile,**  
Typical Height of 1.1 mm

FRED Pt® in SMPD



**Very Low Profile,**  
Typical Height of 1.7 mm

TMBS® in SMPD





# RECTIFIERS

## Focus Products

### TMBS® in MicroSMP Package

Part Number	$I_{F(AV)}$	$V_{RRM}$	$V_F$ at 125 °C	$I_R$	$I_{FSM}$	$T_J$ Max.	Package	
Very low profile – typical height of 0.65 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free								
	V2PL45	2 A	45 V	Typ. = 0.40 V	0.35 mA	30 A	150 °C	MicroSMP (DO-219AD)
	V2P6	2 A	60 V	Typ. = 0.51 V	0.2 mA	30 A	150 °C	MicroSMP (DO-219AD)
	V2PM10	2 A	100 V	Typ. = 0.62 V	0.05 mA	30 A	175 °C	MicroSMP (DO-219AD)
	V2PM12	2 A	120 V	Typ. = 0.65 V	0.05 mA	30 A	175 °C	MicroSMP (DO-219AD)
	V2PM15	2 A	150 V	Typ. = 0.68 V	0.05 mA	30 A	175 °C	MicroSMP (DO-219AD)

### TMBS® in SMF Package

Part Number	$I_{F(AV)}$	$V_{RRM}$	$V_F$ at 125 °C	$I_R$	$I_{FSM}$	$T_J$ Max.	Package	
Very low profile – typical height of 0.98 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free								
	V3FL45	3 A	45 V	Typ. = 0.43 V	0.75 mA	50 A	150 °C	SMF (DO-219AB)
	V3F6	3 A	60 V	Typ. = 0.49 V	0.6 mA	60 A	150 °C	SMF (DO-219AB)
	V3FM10	3 A	100 V	Typ. = 0.62 V	0.085 mA	55 A	175 °C	SMF (DO-219AB)
	V3FM12	3 A	120 V	Typ. = 0.64 V	0.1 mA	60 A	175 °C	SMF (DO-219AB)
	V3FM15	3 A	150 V	Typ. = 0.66 V	0.085 mA	40 A	175 °C	SMF (DO-219AB)


### TMBS® in SMPA Package

Part Number	$I_{F(AV)}$	$V_{RRM}$	$V_F$ at 125 °C	$I_R$	$I_{FSM}$	$T_J$ Max.	Package	
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. = 0.40 V	1.85 mA	120 A	150 °C	SMPA (DO-221BC)
	V8PA6	8 A	60 V	Typ. = 0.49 V	0.6 mA	100 A	150 °C	SMPA (DO-221BC)
	V8PA10	8 A	100 V	Typ. = 0.61 V	0.8 mA	100 A	150 °C	SMPA (DO-221BC)
	V8PAM10	8 A	100 V	Typ. = 0.62 V	0.2 mA	100 A	175 °C	SMPA (DO-221BC)
	V8PA12	8 A	120 V	Typ. = 0.64 V	0.6 mA	100 A	150 °C	SMPA (DO-221BC)
	V8PAM12	8 A	120 V	Typ. = 0.65 V	0.5 mA	100 A	175 °C	SMPA (DO-221BC)
	V8PA15	8 A	150 V	Typ. = 0.68 V	0.5 mA	100 A	150 °C	SMPA (DO-221BC)



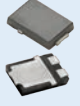


### TMBS® in SlimDPAK Package

Part Number	$I_{F(AV)}$	$V_{RRM}$	$V_F$ at 125 °C, Typ.	$I_R$	$I_{FSM}$	$T_J$ Max.	Package	
Very low profile – typical height of 1.3 mm; Trench MOS Schottky technology; low forward voltage drop; RoHS-compliant; halogen-free								
	V20PWM45	20 A	45 V	0.51 V at 20 A	0.7 mA	200 A	175 °C	SlimDPAK (TO-252AE)
	V20PWM60	20 A	60 V	0.58 V at 20 A	1.2 mA	200 A	175 °C	SlimDPAK (TO-252AE)
	V20PWM10	20 A	100 V	0.7 V at 20 A	0.2 mA	200 A	175 °C	SlimDPAK (TO-252AE)
	V35PWM45	35 A	45 V	0.52 V at 35 A	1.1 mA	260 A	175 °C	SlimDPAK (TO-252AE)
	V35PWM60	35 A	60 V	0.58 V at 35 A	2.1 mA	260 A	175 °C	SlimDPAK (TO-252AE)
	V35PWM10	35 A	100 V	0.68 V at 35 A	0.8 mA	260 A	175 °C	SlimDPAK (TO-252AE)
	V40PWM45C	40 A	45 V	0.52 V at 20 A	0.4 mA	240 A	175 °C	SlimDPAK (TO-252AE)
	V40PWM60C	40 A	60 V	0.59 V at 20 A	1.4 mA	240 A	175 °C	SlimDPAK (TO-252AE)
	V40PWM10C	40 A	100 V	0.68 V at 20 A	0.4 mA	240 A	175 °C	SlimDPAK (TO-252AE)

**ESD Capability Standard Rectifiers in SlimDPAK Package**

Part Number	$I_{F(AV)}$	$V_{RRM}$	$V_F$ at 125 °C, Typ.	$I_R$	$I_{FSM}$	$T_J$ Max.	Package
Very low profile – typical height of 1.3 mm; ESD capability; AEC-Q101 qualified; RoHS-compliant; halogen-free							
 <b>SE40PWBC thru SE40PWJC</b>	4 A	100 V to 600 V	0.92 V at 2 A	10 $\mu$ A	36 A	175 °C	SlimDPAK (TO-252AE)
<b>SE60PWBC thru SE60PWJC</b>	6 A	100 V to 600 V	0.94 V at 3 A	10 $\mu$ A	42 A	175 °C	SlimDPAK (TO-252AE)
<b>SE80PWB thru SE80PWJ</b>	8 A	100 V to 600 V	0.92 V at 8 A	15 $\mu$ A	110 A	175 °C	SlimDPAK (TO-252AE)
<b>SE100PWB thru SE100PWJ</b>	10 A	100 V to 600 V	0.93 V at 10 A	20 $\mu$ A	125 A	175 °C	SlimDPAK (TO-252AE)

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

Part Number	$I_{F(AV)}$	$V_{RRM}$	$V_F$ at 125 °C, Typ.	$I_R$	$I_{FSM}$	$T_J$ Max.	$t_{rr}$	Package
Low profile – typical height of 1.0 mm; FRED Pt® technology; $T_J$ max. = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 <b>VS-1EFH02HM3</b>	1 A	200 V	0.73 V	2 $\mu$ A	40 A	175 °C	25 ns	SMF (DO-219AB)
<b>VS-2EFH02HM3</b>	2 A	200 V	0.75 V	2 $\mu$ A	50 A	175 °C	25 ns	SMF (DO-219AB)
Very low profile – typical height of 0.95 mm; FRED Pt® technology; $T_J$ max. = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 <b>VS-2EJH02HM3</b>	2 A	200 V	0.72 V	2 $\mu$ A	65 A	175 °C	25 ns	SlimSMA (TO-221AC)
<b>VS-3EJH02HM3</b>	3 A	200 V	0.74 V	2 $\mu$ A	85 A	175 °C	30 ns	SlimSMA (TO-221AC)
Low profile – typical height of 1.1 mm; FRED Pt® technology; $T_J$ max. = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 <b>VS-4CSH02HM3</b>	2 x 2 A	200 V	0.75 V	2 $\mu$ A	90 A	175 °C	24 ns	SMPC (TO-277A)
<b>VS-4ESH02HM3</b>	4 A	200 V	0.73 V	2 $\mu$ A	130 A	175 °C	27 ns	SMPC (TO-277A)
<b>VS-6ESH02HM3</b>	6 A	200 V	0.74 V	2 $\mu$ A	150 A	175 °C	28 ns	SMPC (TO-277A)
<b>VS-6CSH02HM3</b>	2 x 3 A	200 V	0.74 V	2 $\mu$ A	150 A	175 °C	27 ns	SMPC (TO-277A)
<b>VS-8CSH02HM3</b>	2 x 4 A	200 V	0.72 V	2 $\mu$ A	130 A	175 °C	25 ns	SMPC (TO-277A)
<b>VS-10CSH02HM3</b>	2 x 5 A	200 V	0.75 V	2 $\mu$ A	130 A	175 °C	25 ns	SMPC (TO-277A)
<b>VS-6ESU06HM3</b>	6 A	600 V	0.95 V	5 $\mu$ A	120 A	175 °C	42 ns	SMPC (TO-277A)
Low profile – typical height of 1.7 mm; FRED Pt® technology; $T_J$ max. = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 <b>VS-16CDH02HM3</b>	2 x 8 A	200 V	0.77 V	2 $\mu$ A	190 A	175 °C	23 ns	SMPD (TO-263AC)
<b>VS-20CDH02HM3</b>	2 x 10 A	200 V	0.77 V	2 $\mu$ A	210 A	175 °C	22 ns	SMPD (TO-263AC)
<b>VS-10CDH06HM3</b>	2 x 5 A	600 V	1 V	3 $\mu$ A	110 A	175 °C	35 ns	SMPD (TO-263AC)
<b>VS-12CDU06HM3</b>	2 x 6 A	600 V	0.89 V	5 $\mu$ A	200 A	175 °C	45 ns	SMPD (TO-263AC)
<b>VS-16EDU06HM3</b>	16 A	600 V	0.91 V	15 $\mu$ A	160 A	175 °C	55 ns	SMPD (TO-263AC)
<b>VS-16CDU06HM3</b>	2 x 8 A	600 V	0.94 V	5 $\mu$ A	200 A	175 °C	45 ns	SMPD (TO-263AC)
<b>VS-30CDU06HM3</b>	2 x 15 A	600 V	0.9 V	15 $\mu$ A	300 A	175 °C	55 ns	SMPD (TO-263AC)
Low profile – typical height of 1.3 mm; FRED Pt® technology; $T_J$ max. = 175 °C; low forward voltage drop; soft recovery; halogen-free; AEC-Q101								
 <b>VS-4EVH02HM3</b>	1 x 4 A	200 V	0.71 V	3 $\mu$ A	100 A	175 °C	16 ns	SlimDPAK (TO-252AE)
<b>VS-6CVH02HM3</b>	2 x 3 A	200 V	0.75 V	5 $\mu$ A	140 A	175 °C	20 ns	SlimDPAK (TO-252AE)
<b>VS-8CVH02HM3</b>	2 x 4 A	200 V	0.71 V	4 $\mu$ A	200 A	175 °C	16 ns	SlimDPAK (TO-252AE)
<b>VS-10CVH02HM3</b>	2 x 5 A	200 V	0.74 V	2 $\mu$ A	200 A	175 °C	16 ns	SlimDPAK (TO-252AE)
<b>VS-6EVL06HM3</b>	1 x 6 A	600 V	0.98 V	5 $\mu$ A	80 A	175 °C	34 ns	SlimDPAK (TO-252AE)
<b>VS-6EVH06HM3</b>	1 x 6 A	600 V	1.26 V	5 $\mu$ A	70 A	175 °C	16 ns	SlimDPAK (TO-252AE)
<b>VS-6EVX06HM3</b>	1 x 6 A	600 V	1.65 V	5 $\mu$ A	50 A	175 °C	14 ns	SlimDPAK (TO-252AE)
<b>VS-8EVL06HM3</b>	1 x 8 A	600 V	0.98 V	5 $\mu$ A	130 A	175 °C	34 ns	SlimDPAK (TO-252AE)
<b>VS-8EVH06HM3</b>	1 x 8 A	600 V	1.3 V	5 $\mu$ A	90 A	175 °C	16 ns	SlimDPAK (TO-252AE)
<b>VS-8EVX06HM3</b>	1 x 8 A	600 V	1.4 V	5 $\mu$ A	80 A	175 °C	14 ns	SlimDPAK (TO-252AE)
<b>VS-15EVL06HM3</b>	1 x 15 A	600 V	0.98 V	5 $\mu$ A	180 A	175 °C	38 ns	SlimDPAK (TO-252AE)
<b>VS-15EVU06HM3</b>	1 x 15 A	600 V	1.1 V	5 $\mu$ A	160 A	175 °C	26 ns	SlimDPAK (TO-252AE)
<b>VS-15EVH06HM3</b>	1 x 15 A	600 V	1.2 V	5 $\mu$ A	120 A	175 °C	20 ns	SlimDPAK (TO-252AE)



# Worldwide Leader in Power Rectifiers in 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<sup>®</sup> ultrafast recovery rectifiers

## For the Following Applications

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



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



TMBS<sup>®</sup> Trench MOS Barrier Schottky rectifiers help maximize efficiency in switch mode power supply applications

## Useful Links

- Rectifiers  
[www.vishay.com/diodes](http://www.vishay.com/diodes)
- Diodes / Rectifiers in eSMP<sup>®</sup> series  
[www.vishay.com/landingpage/tradeshows/diodes/](http://www.vishay.com/landingpage/tradeshows/diodes/)
- Diodes in the Automotive Industry  
[www.vishay.com/doc?48371](http://www.vishay.com/doc?48371)

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