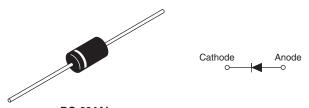
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VS-1N5818, VS-1N5818-M3

Vishay Semiconductors

Schottky Rectifier, 1.0 A



PRODUCT SUMMARY				
Package	DO-204AL (DO-41)			
I _{F(AV)}	1 A			
V _R	30 V			
V _F at I _F	0.5 V			
I _{RM} max.	12 mA at 125 °C			
T _J max.	150 °C			
Diode variation	Single die			
E _{AS}	See Electrical table			

FEATURES

- Low profile, axial leaded outline
- High frequency operation
- Very low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance



HALOGEN

FREE Available

- Guard ring for enhanced ruggedness and long term reliability
- Compliant to RoHS Directive 2002/95/EC
- · Designed and qualified for commercial level
- Halogen-free according to IEC 61249-2-21 definition (-M3 only)

DESCRIPTION

The VS-1N5818... axial leaded Schottky rectifier has been optimized for very low forward voltage drop, with moderate leakage. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

MAJOR RATINGS AND CHARACTERISTICS				
SYMBOL	CHARACTERISTICS	VALUES	UNITS	
I _{F(AV)}	Rectangular waveform	1.0	А	
V _{RRM}		30	V	
I _{FSM}	t _p = 5 μs sine	225	А	
V _F	1 Apk, T _J = 25 °C	0.55	V	
TJ	Range	- 40 to 150	°C	

VOLTAGE RATINGS					
PARAMETER	SYMBOL	VS-1N5818	VS-1N5818-M3	UNITS	
Maximum DC reverse voltage	V _R	30	30	V	
Maximum working peak reverse voltage	V _{RWM}	30	50	V	

ABSOLUTE MAXIMUM RATINGS					
PARAMETER	SYMBOL	TEST CONDITIONS VALUES UN		UNITS	
Maximum average forward current See fig. 4	I _{F(AV)}	50 % duty cycle at T_L = 90 °C, rectangular waveform 1.0			
Maximum peak one cycle non-repetitive surge current		5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated	225	А
See fig. 6	IFSM	10 ms sine or 6 ms rect. pulse V _{RRM} applied		35	

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ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS VA		VALUES	UNITS
	V _{FM} ⁽¹⁾	1 A	T _J = 25 °C	0.55	V
		2 A		0.71	
Maximum forward voltage drop		3 A		0.875	
See fig. 1		1 A	T _J = 125 °C	0.5	
		2 A		0.61	
		3 A		0.77	
		T _J = 25 °C		1.0	
Maximum reverse leakage current See fig. 2	I _{RM} ⁽¹⁾	T _J = 100 °C	$V_R = Rated V_R$	6.0	mA
		T _J = 125 °C		12	
Maximum junction capacitance	C _T	$V_{\rm R}$ = 5 $V_{\rm DC}$ (test signal range 100 kHz to 1 MHz) 25 °C		60	pF
Typical series inductance	L _S	Measured lead to lead 5 mm from package body		8.0	nH
Maximum voltage rate of change	dV/dt	Rated V _R 10 000 V/µs		V/µs	

Note

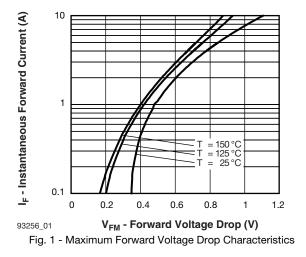
 $^{(1)}\,$ Pulse width < 300 $\mu s,$ duty cycle < 2 $\,\%$

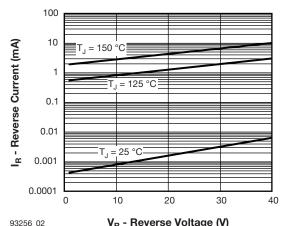
THERMAL - MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 40 to 150	°C
Maximum thermal resistance, junction to lead	R _{thJL} ⁽¹⁾	DC operation See fig. 4	80	°C/W
Approximate weight			0.33	g
Approximate weight			0.012	oz.
Marking device		Case style DO-204AL (DO-41)	1N5	818

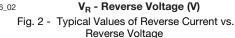
Note

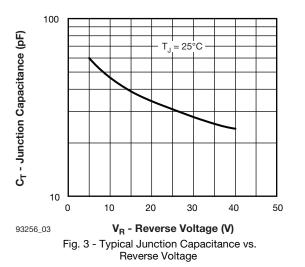
⁽¹⁾ Mounted 1" square PCB, thermal probe connected to lead 2 mm from package



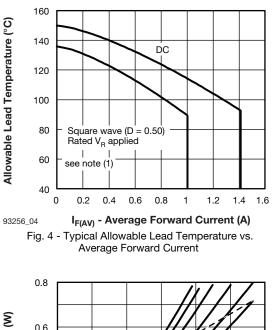








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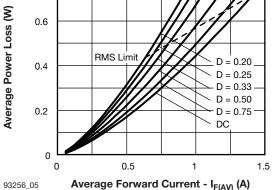
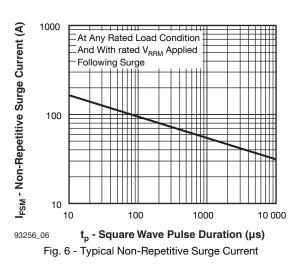


Fig. 5 - Forward Power Loss Characteristics



Note

⁽¹⁾ Formula used: $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$;

Pd = Forward power loss = $I_{F(AV)} \times V_{FM}$ at ($I_{F(AV)}/D$) (see fig. 6); Pd_{REV} = Inverse power loss = $V_{R1} \times I_R$ (1 - D); I_R at V_{R1} = 80 % rated V_R

Revision: 21-Sep-11

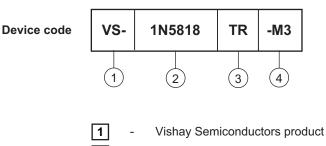
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VS-1N5818, VS-1N5818-M3

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ORDERING INFORMATION TABLE

www.vishay.com



2 - Part number: 1N5818 = 1 A, 30 V

3 - TR = Tape and reel package

None = Bulk package

- 4 Environmental digit
 - None = Lead (Pb)-free and RoHS compliant

• -M3 = Halogen-free, RoHS compliant, and terminations lead (Pb)-free

ORDERING INFORMATION (Example)				
PREFERRED P/N	QUANTITY PER T/R	MINIMUM ORDER QUANTITY	PACKAGING DESCRIPTION	
VS-1N5818	1000	1000	Bulk	
VS-1N5818TR	5000	5000	Tape and reel	
VS-1N5818-M3	1000	1000	Bulk	
VS-1N5818TR-M3	5000	5000	Tape and reel	

LINKS TO RELATED DOCUMENTS			
Dimensions www.vishay.com/doc?95241			
Part marking information	www.vishay.com/doc?95304		
Packaging information	www.vishay.com/doc?95338		

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27.0 (1.06) MIN. (2 places)

1.27 (0.050) MAX.

Flash (2 places)

2.70 (0.106)

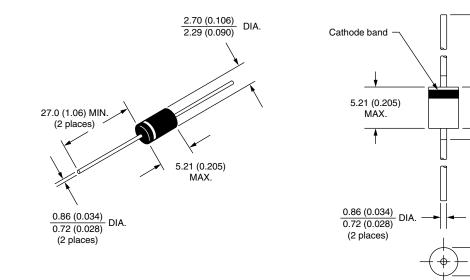
2.29 (0.090)

DIA.



Axial DO-204AL (DO-41)

DIMENSIONS in millimeters (inches)





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