ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS		TYP.	MAX.	UNITS
Maximum forward voltage drop	V_{FM} (1)	1 A	T_J = 25 °C	0.52	0.6	V
		2 A		0.70	0.77	
		1 A	T_J = 125 °C	0.48	0.53	
		2 A		0.63	0.71	
Maximum reverse leakage current	I_{RM} (1)	T_J = 25 °C	V_R = Rated V_R	-	0.1	mA
		T_J = 125 °C		-	4.0	
Maximum junction capacitance	C_T	V_R = 5 V_{DC} (test signal range 100 kHz to 1 MHz), 25 °C		-	80	pF
Typical series inductance	L_S	Measured lead to lead 5 mm from package body		-	2.0	nH
Maximum voltage rate of change	dV/dt	Rated V_R		-	10 000	V/µs

Note

(1) Pulse width < 300 µs, duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T_J (1), T_{Stg}		- 55 to 150	°C
Maximum thermal resistance, junction to lead	R_{thJL} (2)	DC operation See fig. 4	36	°C/W
Maximum thermal resistance, junction to ambient	R_{thJA}	DC operation	80	
Approximate weight			0.10	g
			0.003	oz.
Marking device		Case style SMB (similar to DO-214AA)	V14	

Notes

(1) $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{thJA}}$ thermal runaway condition for a diode on its own heatsink

(2) Mounted 1" square PCB

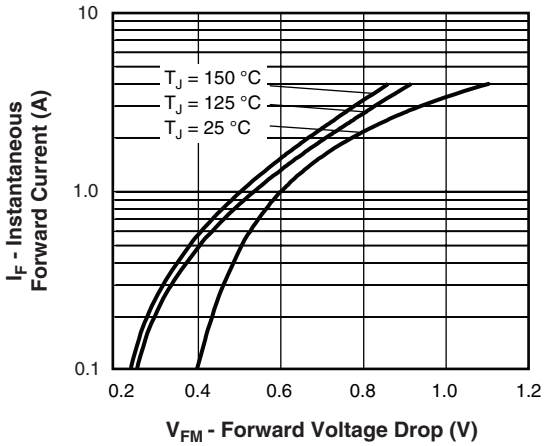


Fig. 1 - Maximum Forward Voltage Drop Characteristics

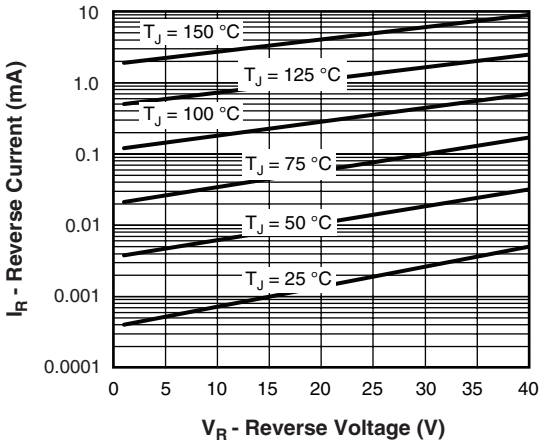


Fig. 2 - Typical Peak Reverse Current vs. Reverse Voltage

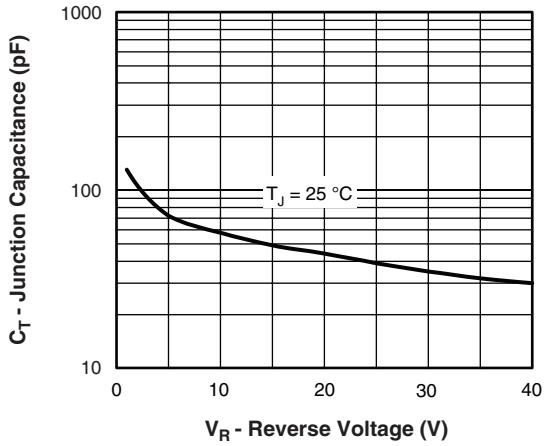


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

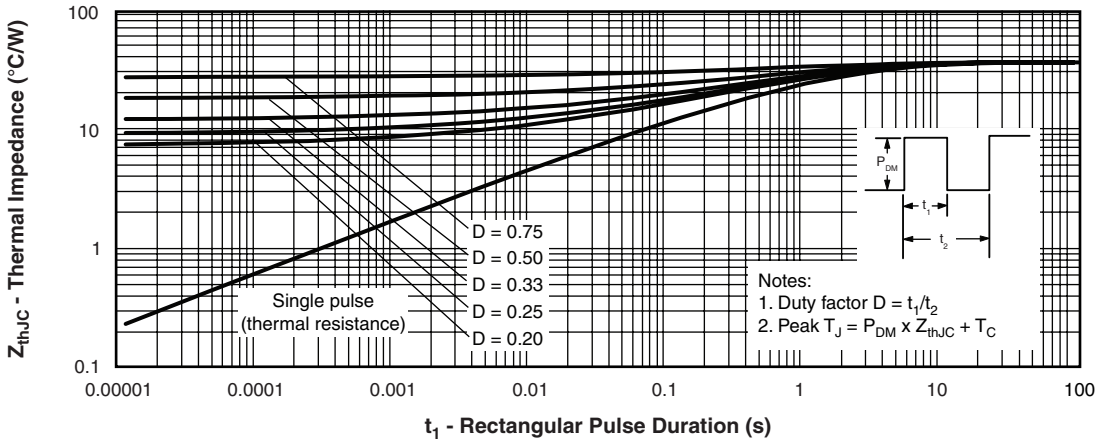


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

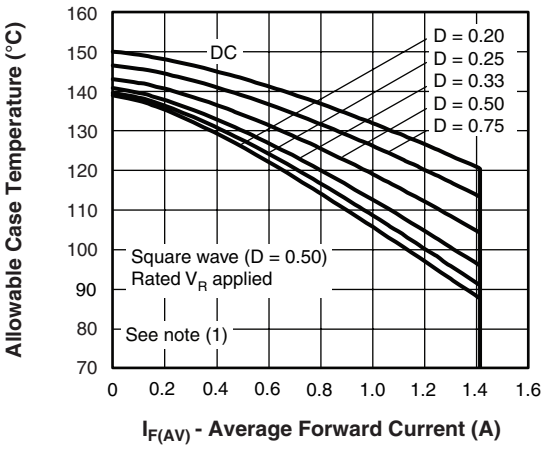


Fig. 5 - Maximum Average Forward Current vs. Allowable Lead Temperature

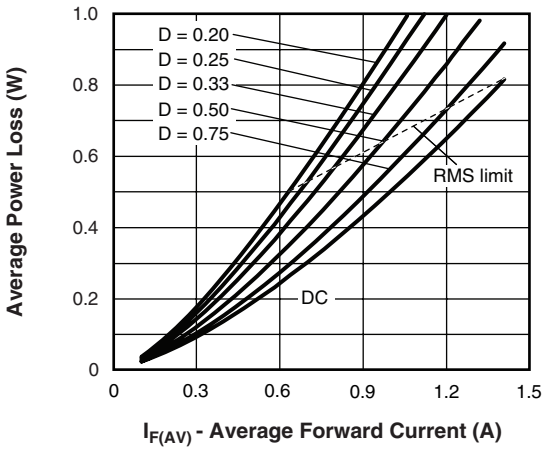


Fig. 6 - Maximum Average Forward Dissipation vs. Average Forward Current

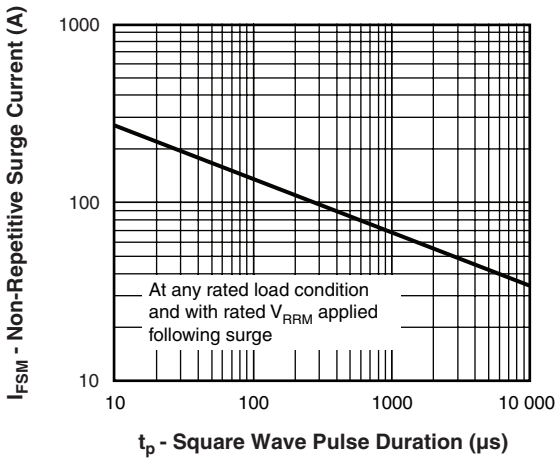


Fig. 7 - Maximum Peak Surge Forward Current vs. Pulse Duration

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

ORDERING INFORMATION TABLE

Device code

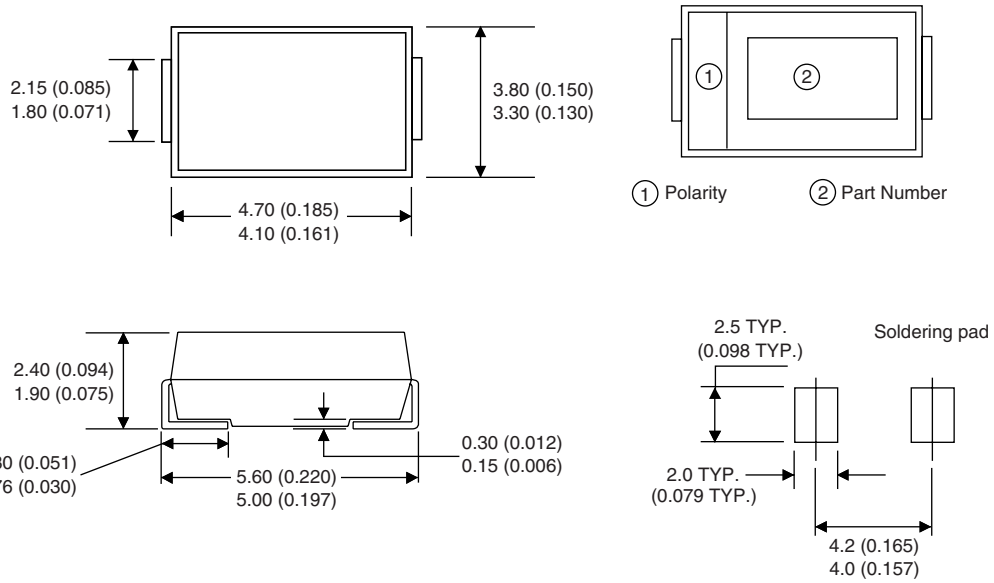
VS-	MBR	S	1	40	TR	PbF
1	2	3	4	5	6	7

1	-	HPP product suffix
2	-	Schottky MBR series
3	-	S = SMB
4	-	Current rating (1 = 1 A)
5	-	Voltage rating (40 = 40 V)
6	-	TR = Tape and reel (3000 pieces)
7	-	PbF = Lead (Pb)-free

LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95017
Part marking information	www.vishay.com/doc?95029
Packaging information	www.vishay.com/doc?95034
SPICE model	www.vishay.com/doc?95299

SMB

DIMENSIONS in millimeters (inches)



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