



ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop See fig. 1	$V_{FM}^{(1)}$	3 A	$T_J = 25\text{ }^{\circ}\text{C}$	0.85	V
		6 A		0.97	
		3 A	$T_J = 125\text{ }^{\circ}\text{C}$	0.69	
		6 A		0.80	
Maximum reverse leakage current See fig. 4	$I_{RM}^{(1)}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_R = \text{Rated } V_R$	1	mA
		$T_J = 125\text{ }^{\circ}\text{C}$		3	
Typical junction capacitance	C_T	$V_R = 5\text{ }V_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^{\circ}\text{C}$		110	pF
Typical series inductance	L_S	Measured lead to lead 5 mm from package body		9.0	nH
Maximum voltage rate of charge	dV/dt	Rated V_R		10 000	V/μs

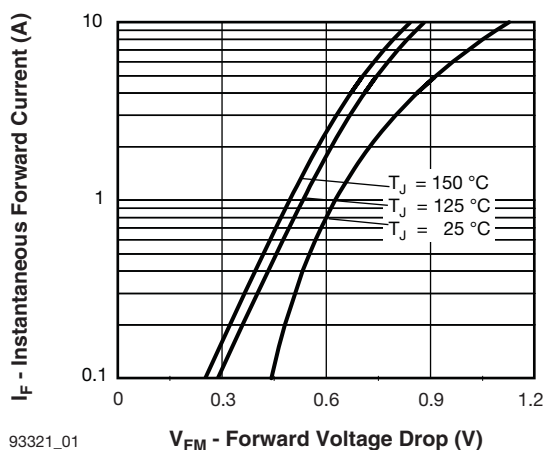
Note

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

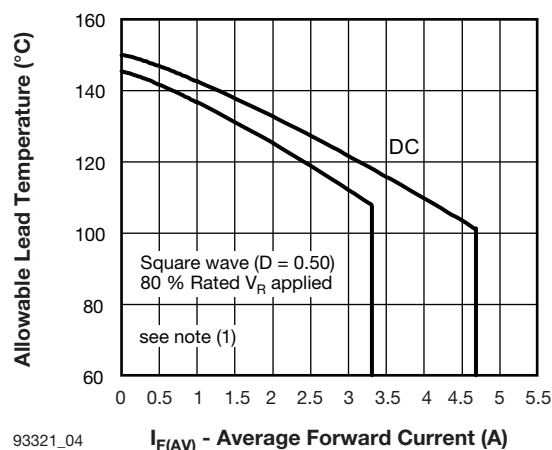
THERMAL - MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J ⁽¹⁾ , T _{Stg}		- 40 to 150	°C
Maximum thermal resistance, junction to ambient	R _{thJA}	DC operation Without cooling fin	80	°C/W
Typical thermal resistance, junction to lead	R _{thJL}	DC operation	15	
Approximate weight			1.2	g
			0.042	oz.
Marking device		Case style C-16	31DQ09	
			31DQ10	

Note

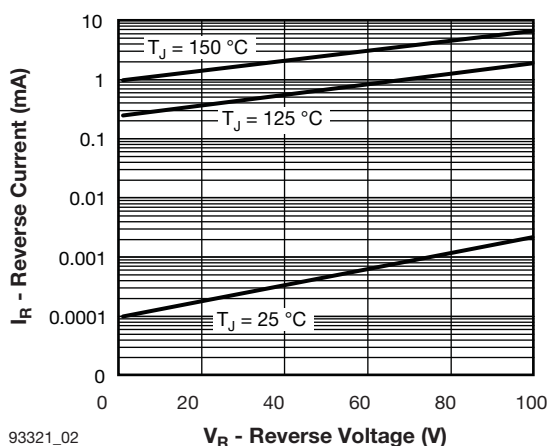
(1) $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{thJA}}$ thermal runaway condition for a diode on its own heatsink



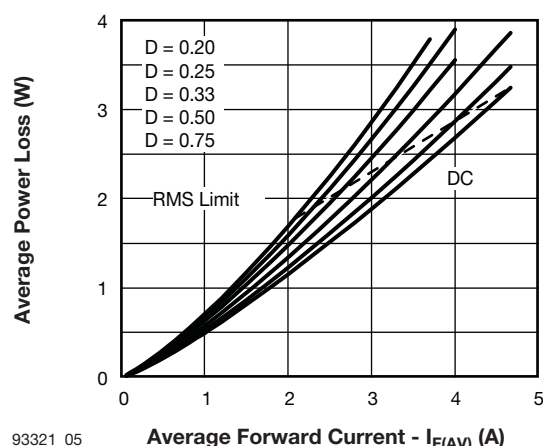
93321_01
Fig. 1 - Maximum Forward Voltage Drop Characteristics



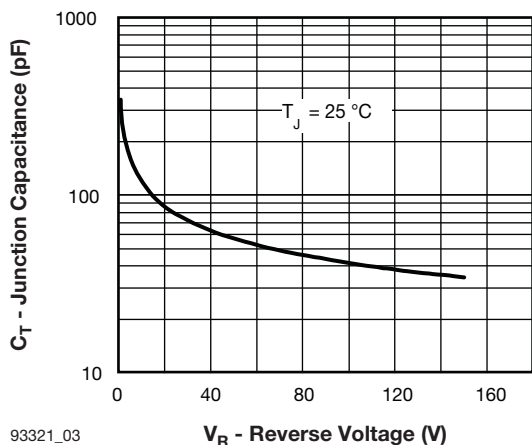
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Fig. 4 - Maximum Allowable Lead Temperature vs. Average Forward Current



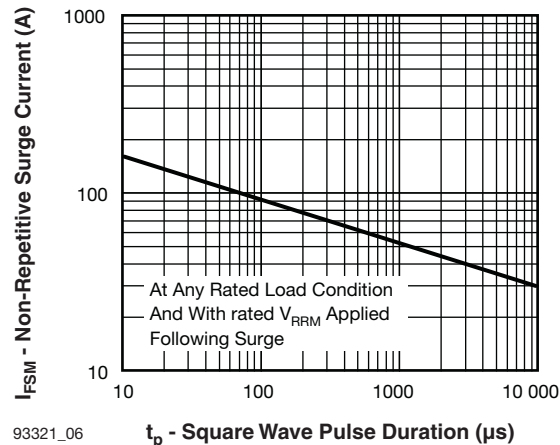
93321_02
Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage



93321_05
Fig. 5 - Forward Power Loss Characteristics



93321_03
Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage



93321_06
Fig. 6 - Maximum Non-Repetitive Surge Current

Note

- (1) Formula used: $T_C = T_J - (P_d + P_{dREV}) \times R_{thJL}$;
 P_d = Forward power loss = $I_{F(AV)} \times V_{FM}$ at $(I_{F(AV)}/D)$ (see fig. 6); P_{dREV} = 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-	31	D	Q	10	TR	-M3
	1	2	3	4	5	6	7

- | | | | |
|----------|---|--|-------------------------|
| 1 | - | Vishay Semiconductors product | |
| 2 | - | 31 = Current Rating, 3.3 A | |
| 3 | - | D = DO-201 package | |
| 4 | - | Q = Schottky Q.. series | |
| 5 | - | 10 = Voltage ratings | 09 = 90 V
10 = 100 V |
| 6 | - | • TR = Tape and reel package
• None = Bulk package | |
| 7 | - | Environmental digit
• None = Lead (Pb)-free and RoHS compliant
• -M3 = Halogen-free, RoHS compliant, and terminations lead (Pb)-free | |

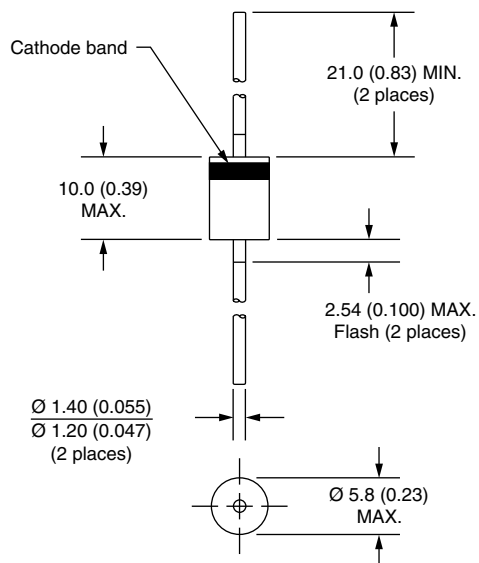
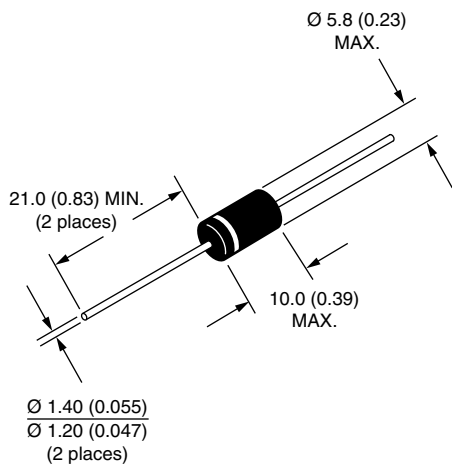
ORDERING INFORMATION (Example)			
PREFERRED P/N	QUANTITY PER T/R	MINIMUM ORDER QUANTITY	PACKAGING DESCRIPTION
VS-31DQ09	500	500	Bulk
VS-31DQ09TR	1200	1200	Tape and reel
VS-31DQ09-M3	500	500	Bulk
VS-31DQ09TR-M3	1200	1200	Tape and reel
VS-31DQ10	500	500	Bulk
VS-31DQ10TR	1200	1200	Tape and reel
VS-31DQ10-M3	500	500	Bulk
VS-31DQ10TR-M3	1200	1200	Tape and reel

LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95242
Part marking information	www.vishay.com/doc?95304
Packaging information	www.vishay.com/doc?95338
SPICE model	www.vishay.com/doc?95300



Axial DO-201AD (C-16)

DIMENSIONS in millimeters (inches)





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