New Product

Vishay Semiconductors
formerly General Semiconductor

Bidirectional Surface Mount THYZORB® Thyristor Overvoltage Protectors

DO-214AA (SMB)

DO-214AC (SMA)

Symbol

Stand-off Voltage 58 to 320V
Breakover Voltage 70 to 395V
Holding Current 150mA minimum

Mechanical Data

Case: JEDEC DO-214AA molded plastic body over passivated junction

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
High temperature soldering guaranteed: 250°C/10 seconds at terminals

Mounting Position: Any

Weight: 0.003 ounces, 0.093 gram

Features

- Bidirectional crowbar protection
- Complies with Bellcore TR-NWT-001089, and IEC-1000-4-5 standards
- Series is designed to protect telecommunication equipment against lightening and AC induced transients
- Plastic package has UL Flammability Classification 94V-0
- Low profile package with built-in strain relief for surface mounted applications
- 50 Amp (10/1000μs) available in SMA package

Maximum Ratings and Thermal Characteristics T_A= 25°C unless otherwise noted.

Parameter	Symbol	AA	A	C	Unit
Case outline	–	SMA	SMB		–
Peak Pulse Current 10/1000μs 8/20μs	I_{PP}	50 200	50 200	100 300	A
Non-repetitive surge peak on-state current at 60Hz	I_{TSM}	20	20	60	A
Critical rate of rise of off-state voltage (V_{RM})	dV/dt	5			KV/μs
Storage temperature range	T_{stg}	-55 to +150			°C
Junction temperature range	T_j	-40 to 150			°C
Thermal resistance junction to leads	$R_{\theta JL}$	30		20	°C/W
Thermal resistance junction to ambient on P.C.B. with recommended pad layout	$R_{\theta JA}$	120		90	°C/W

I_{PP} Ratings for the Following Surge Standards

Standard	Waveform	I_{PP} (A, AA)	I_{PP} (C)
GR-1089-CORE	2/10μs	300A+	500A
IEC61000-4-5	8/20μs	200A+	300A
FCC Part 68	10/160μs	120A+	250A+
ITU-TK20/21	10/700μs	100A	200A
FCC Part 68	10/560μs	75A+	160A+
GR-1089-CORE	10/1000μs	50A+	100A

Values with + have improved I_{PP} specs over equivalent competitor part numbers

Electrical Characteristics (T_A = 25°C unless otherwise noted)

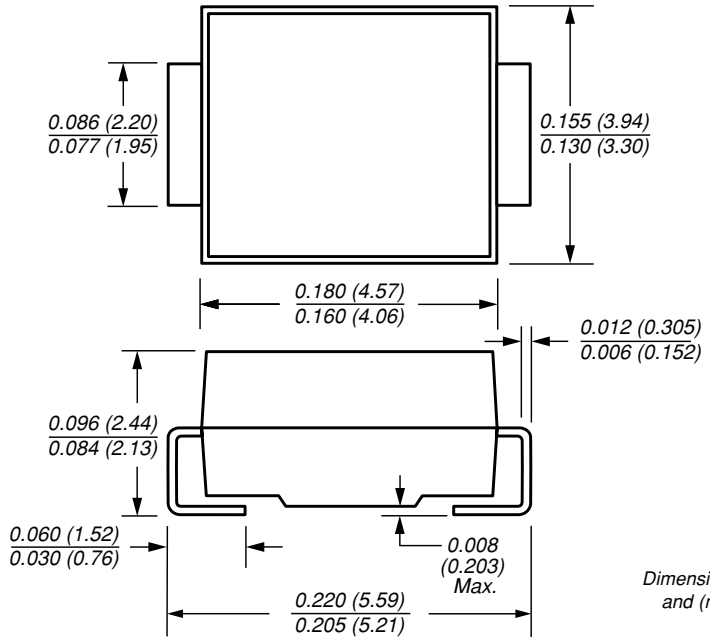
Type	Stand-off Voltage V_{DRM} (V)	Max. Reverse Leakage at V_{DRM} I_{DRM} (μA)	Maximum Breakover Voltage V_{BO} (V)(1)(3)	Maximum Breakover Current I_{BO} (mA)(1)	Max. On-State Voltage at I_T = 1A V_T (V)	Minimum Holding Current I_H (mA)	Typical Capacitance C (pF)(2)	
							AA, A	C
P0640S_	58	5	70*	800	3.0	150	75	115
P0720S_	65	5	80*	800	3.0	150	70	115
P0900S_	75	5	95*	800	3.0	150	66	115
P1100S_	90	5	115*	800	3.0	150	60	75
P1300S_	120	5	145*	800	3.0	150	50	70
P1500S_	140	5	180	800	3.0	150	45	65
P1800S_	160	5	220	800	3.0	150	45	65
P2300S_	190	5	250*	800	3.0	150	45	65
P2600S_	220	5	290*	800	3.0	150	40	65
P3100S_	275	5	350	800	3.0	150	40	60
P3500S_	320	5	395*	800	3.0	150	35	60

Notes: (1) dv/dt = 100V/μs
(2) V_R = 2V, f = 1MHz
(3) Values with * have improved VBO specs over equivalent competitor part numbers

Device Marking

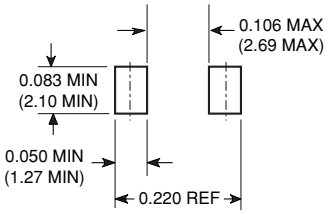
Type	Suffix		
	AA	A	C
P0640S_	06A	P06A	P06C
P0720S_	07A	P07A	P07C
P0900S_	09A	P09A	P09C
P1100S_	11A	P11A	P11C
P1300S_	13A	P13A	P13C
P1500S_	15A	P15A	P15C
P1800S_	18A	P18A	P18C
P2300S_	23A	P23A	P23B
P2600S_	26A	P26A	P26B
P3100S_	31A	P31A	P31C
P3500S_	35A	P35A	P35C

DO-214AA (SMB)

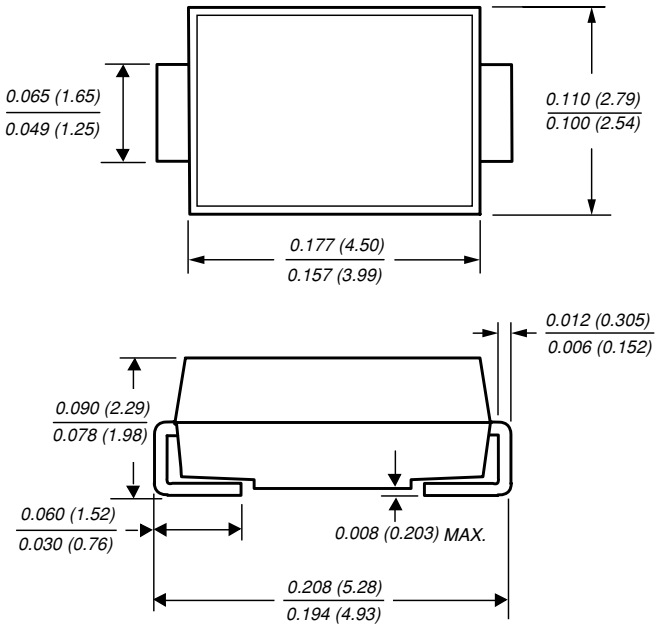


Dimensions in inches and (millimeters)

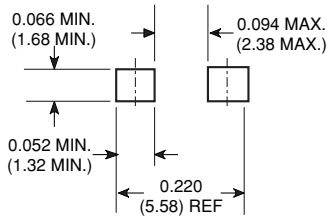
SMB Mounting Pad Layout



DO-214AC (SMA)



SMA Mounting Pad Layout



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