





DATA BUS TRANSIENT SUPPRESSOR / 3-PHASE FULL WAVE BRIDGE RECTIFIER

Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For 3-Phase Full Wave Bridge Rectification, or 3 Dataline Rail Clamp
- Lead Free By Design/RoHS Compliant (Note 3)
- "Green" Device (Note 4)

IEC Compatibility (Note 5)

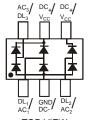
- 61000-4-2 (ESD) Air-10kV Contact-8kV
- 61000-4-5 (Surge) 8x20μs, 14.5 Amperes



TOP VIEW

Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0 (Note 4)
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish Matte Tin annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.006 grams (approximate)



TOP VIEW Internal Schematic

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit	
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	75	V	
RMS Reverse Voltage	V _{R(RMS)}	53	V	
Forward Continuous Current (Note 1)	I _{FM}	215	mA	
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs @ t = 1.0ms @ t = 1.0s	I _{FSM}	2.0 1.0 0.5	А	
Clamping Voltage (Note 6) @ lpp = 14.5A 8x20μs Waveform	V _C	16	V	

SOT-363

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P _D	200	mW
Power Dissipation (Note 2)	P _D	300	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{ heta JA}$	625	°C/W
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Notes:

- 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 2. Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 3. No purposefully added lead.
- 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
- 5. Tested with V_{CC} connected to Ground to simulate appropriate V_{CC} decoupling to Ground.
- 6. Reference to V_{CC} or Ground.

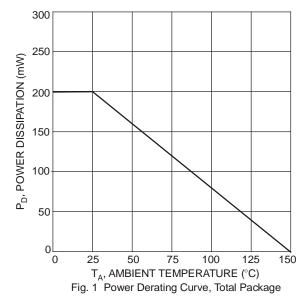


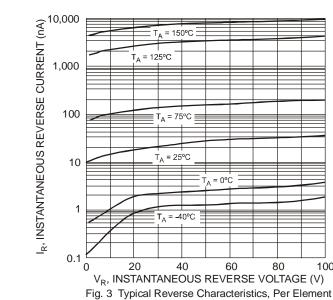
Electrical Characteristics @T_A = 25°C unless otherwise specified

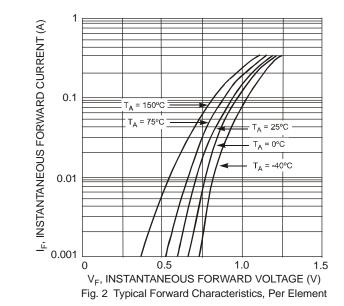
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	75	_		V	$I_R = 2.5 \mu A$
Forward Voltage (Note 7)	V_{F}		_	0.715 0.855 1.0 1.25	V	I _F = 1.0mA I _F = 10mA I _F = 50mA I _F = 150mA
Reverse Current (Note 7)	I _R		_	2.5 50 30 25	μА	$V_R = 75V$ $V_R = 75V$, $T_J = 150^{\circ}C$ $V_R = 25V$, $T_J = 150^{\circ}C$ $V_R = 20V$
Junction Capacitance (per element)	CJ	_	_	2.0	pF	$V_R = 0V$, $f = 1.0MHz$
Capacitance, Between I/O Lines (I/O1 & I/O2)	C_LL	_	35	_	рF	$V_R = 0V$, $f = 1.0MHz$
Capacitance, Between I/O Line and Ground	C_LG	_	11	_	рF	$V_R = 0V$, $f = 1.0MHz$
Reverse Recovery Time	t _{rr}		_	4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$

2 of 4

Notes: 7. Short duration pulse test used to minimize self-heating effect.







2.0 1.8 1.6 TOTAL CAPACITANCE (pF) 1.4 1.2 1.0 8.0 0.6 0.4 0.2 0.0 20 40 V_R, DC REVERSE VOLTAGE (V) Fig. 4 Total Capacitance vs. Reverse Voltage,

Per Element

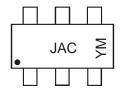


Ordering Information (Note 8)

Part Number	Case	Packaging
SDA006-7	SOT-363	3000/Tape & Reel

Notes: 8. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



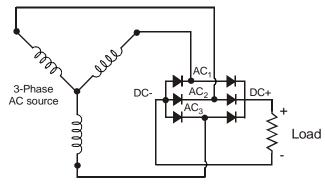
JAC = Product Type Marking Code YM = Date Code Marking Y = Year ex: N = 2002 M = Month ex: 9 = September

Date Code Key

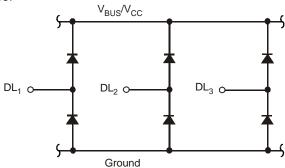
Year	2002	2003	2004	2005	200	6 20	007	2008	2009		2010	2011	2012
Code	N	Р	R	S	Т		U	V	W		Χ	Υ	Z
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	I Au	g S	ер	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8		9	0	N	D

Typical Applications

Three Phase, Full-Wave Bridge Rectifier

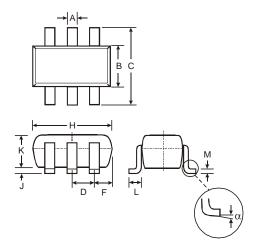


Data Line Bus Transient Suppressor



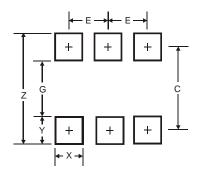


Package Outline Dimensions



SOT-363					
Dim	Min	Max			
Α	0.10	0.30			
В	1.15	1.35			
С	2.00	2.20			
D	0.65 Nominal				
F	0.30	0.40			
Н	1.80	2.20			
J	_	0.10			
K	0.90	1.00			
L	0.25	0.40			
M	0.10	0.25			
α	0°	8°			
All Di	All Dimensions in mm				

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.5
G	1.3
Х	0.42
Υ	0.6
С	1.9
Е	0.65

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.