

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)**

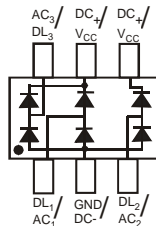
IEC Compatibility (Note 5)

- 61000-4-2 (ESD) Air-10kV Contact-8kV
- 61000-4-5 (Surge) 8x20 μ s, 14.5 Amperes



TOP VIEW

SOT-363


 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	V _{RRM}	75	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	53	V
Forward Continuous Current (Note 1)	I _{FM}	215	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0 μ s @ t = 1.0ms @ t = 1.0s	I _{FSM}	2.0	A
		1.0	
		0.5	
Clamping Voltage (Note 6) @ I _{pp} = 14.5A 8x20 μ s Waveform	V _C	16	V

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 _{θJA}	625	°C/W
Thermal Resistance Junction to Ambient Air (Note 2)	R _{θJA}	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	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	75	—	—	V	I _R = 2.5μA
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	μA μA μA nA	V _R = 75V V _R = 75V, T _J = 150°C V _R = 25V, T _J = 150°C V _R = 20V
Junction Capacitance (per element)	C _J	—	—	2.0	pF	V _R = 0V, f = 1.0MHz
Capacitance, Between I/O Lines (I/O1 & I/O2)	C _{LL}	—	35	—	pF	V _R = 0V, f = 1.0MHz
Capacitance, Between I/O Line and Ground	C _{LG}	—	11	—	pF	V _R = 0V, f = 1.0MHz
Reverse Recovery Time	t _{rr}	—	—	4.0	ns	I _F = I _R = 10mA, I _{rr} = 0.1 x I _R , R _L = 100Ω

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

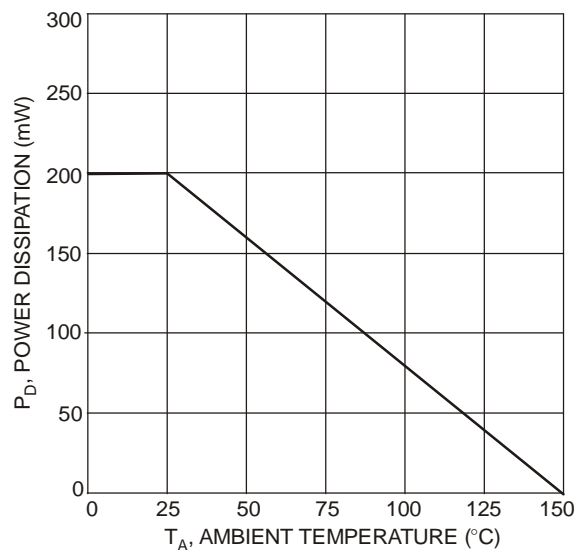


Fig. 1 Power Derating Curve, Total Package

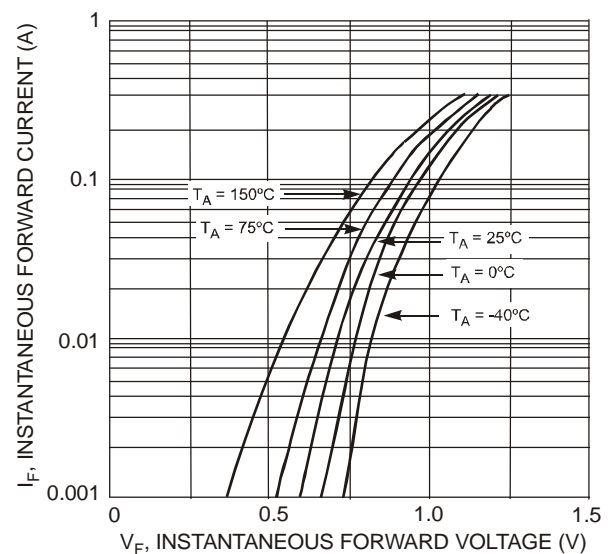


Fig. 2 Typical Forward Characteristics, Per Element

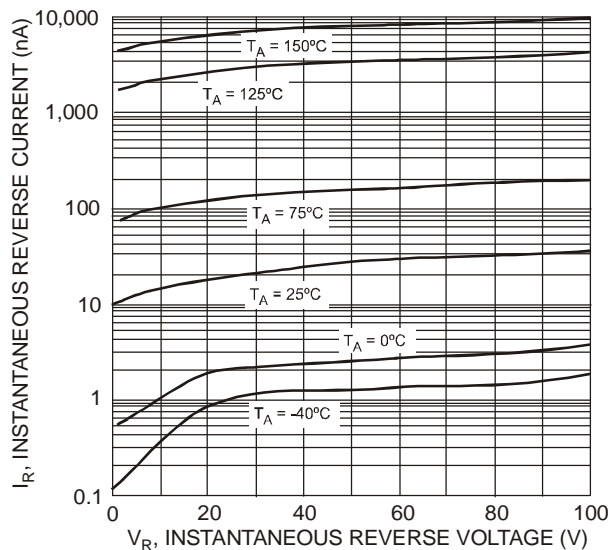


Fig. 3 Typical Reverse Characteristics, Per Element

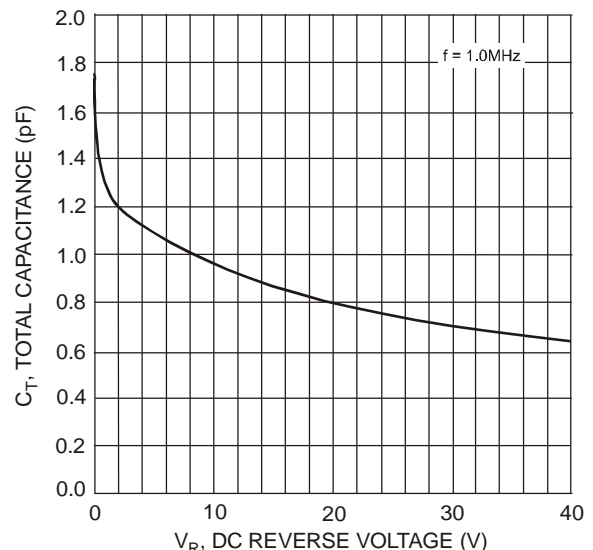


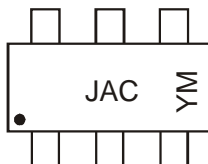
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

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

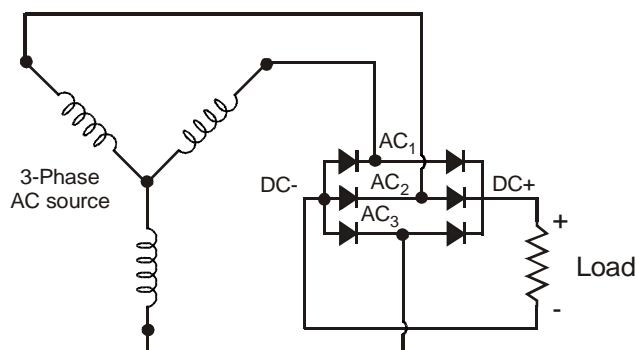
Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	N	P	R	S	T	U	V	W	X	Y	Z

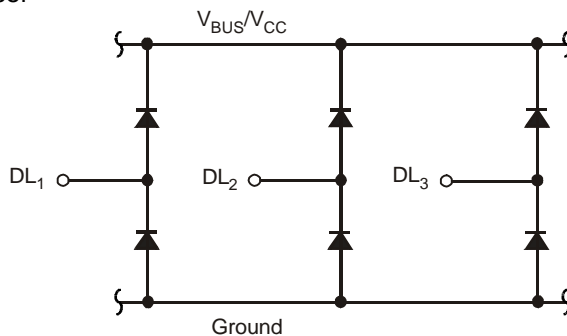
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Typical Applications

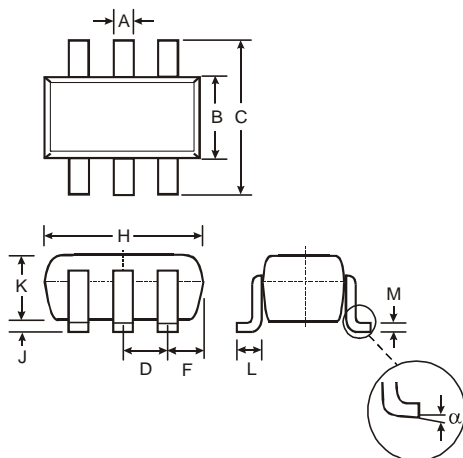
Three Phase, Full-Wave Bridge Rectifier



Data Line Bus Transient Suppressor

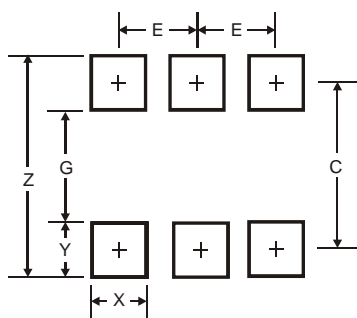


Package Outline Dimensions



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	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 Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C	1.9
E	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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Diodes Incorporated:](#)

[SDA006-7](#)