

## DATA BUS TRANSIENT SUPPRESSOR/THREE PHASE FULL WAVE BRIDGE RECTIFIER

### Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- Ideal For Three Dataline Rail Clamp or Three Phase Full Wave Bridge Rectification
- **Lead Free By Design/RoHS Compliant (Note 4)**
- "Green" Device (Note 5)

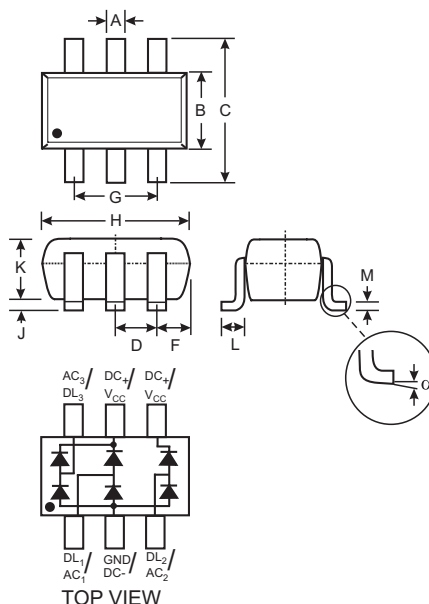
### Data Line Transient Protection

In accordance with (Note 1):

- IEC 61000-4-2 Contact Method:  $\pm 15\text{kV}$
- IEC 61000-4-2 Air Discharge Method:  $\pm 25\text{kV}$

### 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-020C
- Terminals: Finish — Matte Tin annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208
- Ordering Information, See Page 3
- Marking: JAD (See Page 3)



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
E	0.30	0.40
G	1.80	2.20
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
$\alpha$	0°	8°
All Dimensions in mm		

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

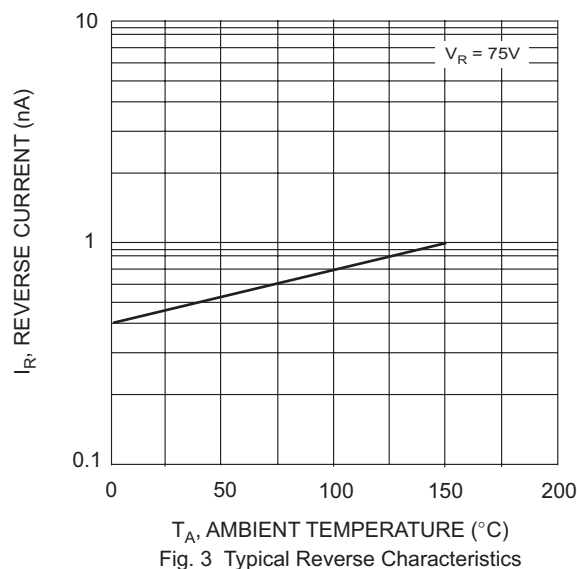
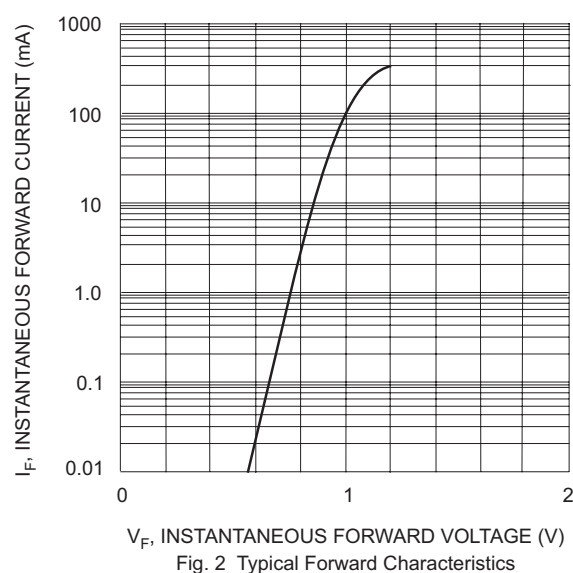
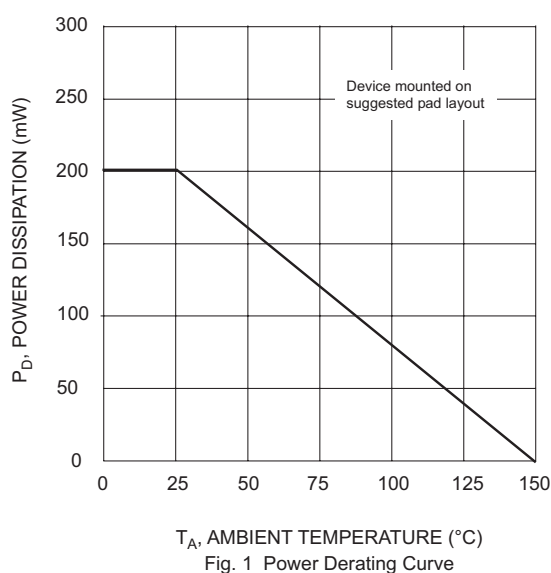
Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	85	V
RMS Reverse Voltage	$V_{R(RMS)}$	60	V
Forward Current (Single Diode)	$I_{FM}$	160	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$ @ $t = 1.0\text{ms}$ @ $t = 1.0\text{s}$	$I_{FSM}$	4.0 1.0 0.5	A
Power Dissipation (Note 2)	$P_d$	200	mW
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Power Dissipation (Note 3)	$P_d$	300	mW
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150	$^\circ\text{C}$

- Notes:
1. Tested with  $V_{CC}$  pins connected to GND pin.
  2. 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>.
  3. 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>.
  4. No purposefully added lead.
  5. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	85	—	—	V	$I_R = 100\mu\text{A}$
Forward Voltage (Note 6)	$V_F$	—	—	0.90 1.0 1.1 1.25	V	$I_F = 1.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 150\text{mA}$
Leakage Current (Note 6)	$I_R$	—	—	5.0 80	nA nA	$V_R = 75\text{V}$ $V_R = 75\text{V}, T_j = 150^\circ\text{C}$
Junction Capacitance (per element)	$C_T$	—	2	—	pF	$V_R = 0, f = 1.0\text{MHz}$
Capacitance Between Two Data Lines (DL <sub>1</sub> & DL <sub>2</sub> , DL <sub>1</sub> & DL <sub>3</sub> )	$C_{LL}$	—	3.5	7	pF	$V_R = 0, f = 1.0\text{MHz}$
Capacitance Between Data Line and Ground	$C_{LG}$	—	2.7	6	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	—	3.0	$\mu\text{s}$	$I_F = I_R = 10\text{mA}$ , $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

Notes: 6. Short duration test pulse to minimize self-heating effect.

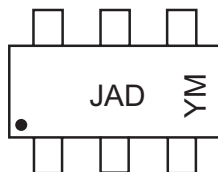


## Ordering Information (Note 7)

Device	Packaging	Shipping
DLPA006-7	SOT-363	3000/Tape & Reel

Notes: 7. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



JAD = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: S = 2005  
 M = Month ex: 9 = September

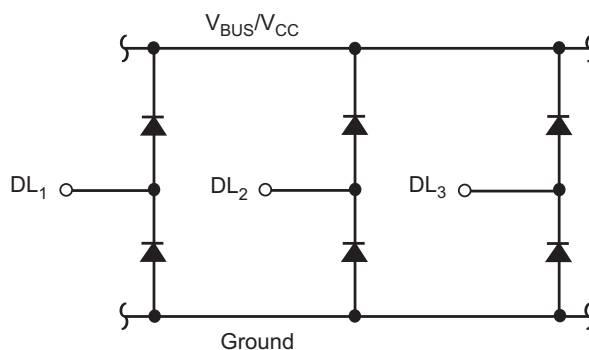
Date Code Key

Year	2005	2006	2007	2008	2009
Code	S	T	U	V	W

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

## Typical Applications

### Data Line Bus Transient Suppressor



### Three Phase, Full-Wave Bridge Rectifier

