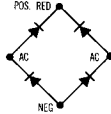




# VARO SEMICONDUCTOR, INC.

P.O. BOX 676, 1000 N. SHILOH, GARLAND, TEX. 75040 (214) 272-4551 TWX 910-860-5178

## IBR®



## SILICON AVALANCHE INTEGRATED BRIDGE RECTIFIERS

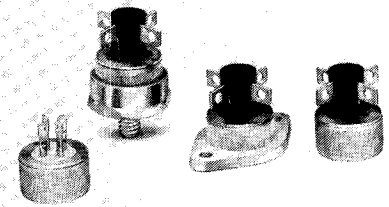
### 10 AMP & 25 AMP SINGLE PHASE, FULL WAVE

- Operation to full rated load at 100°C, T<sub>C</sub>
- 250V, 450V, 650V & 850V minimum avalanche voltages (V<sub>BR</sub>)
- Fast recovery series with 200 nanosec recovery time (t<sub>rr</sub>)
- 2000 V minimum circuit-to-case isolation.

The IBR offers full wave rectification in a rigidly constructed, hermetically sealed, welded package. The controlled avalanche characteristics permit the use of lower PRV safety factors for junction protection from transient over voltages. Proper heat sinking allows great flexibility in DC output current ranges.

These characteristics plus the electrically isolated case allows the IBR to be used in applications where space, current and cost requirements have previously not allowed the use of semiconductors.

Three mounting options available, press-fit, stud mount, TO-3 outline flange.



### MAXIMUM RATINGS @ 60 Hz RESISTIVE AND INDUCTIVE LOAD, T<sub>A</sub> = 25°C (UNLESS OTHERWISE SPECIFIED)

Varo Part Number	Peak Rep. Reverse Voltage (V <sub>RRM</sub> ) (Volts)	RMS Reverse Voltage [V <sub>R(RMS)</sub> ] (Volts)	Power Dissipation (100 μsec sq. wave) (P <sub>RM</sub> ) (Watts)	Peak Surge Current (½ cycle @ 60 Hz, Non-Rep) (I <sub>FSM</sub> ) (Amps)	DC Forward Current @ T <sub>C</sub> = 100°C (I <sub>O</sub> ) (Amps)	Junction Operating Stg. Temp. Range (T <sub>J</sub> , T <sub>STG</sub> ) (°C)
<b>10 AMP CONTROLLED AVALANCHE</b>						
IN4436	200	140	600	100	10	-65 to +160
IN4437	400	280	600	100	10	-65 to +160
IN4438	600	400	600	100	10	-65 to +160
IN4439	800	560	600	100	10	-65 to +160
<b>10 AMP FAST RECOVERY (See Note 4)</b>						
VR100X	100	70	NA	75	10	-65 to +150
VR200X	200	140	NA	75	10	-65 to +150
VR400X	400	280	NA	75	10	-65 to +150
VR600X	600	400	NA	75	10	-65 to +150
<b>25 AMP CONTROLLED AVALANCHE</b>						
VT200	200	140	1500	250	25	-65 to +180
VT400	400	280	1500	250	25	-65 to +180
VT600	600	400	1500	250	25	-65 to +180
VT800	800	560	1500	250	25	-65 to +180
<b>25 AMP FAST RECOVERY (See Note 4)</b>						
VY100X	100	70	NA	150	25	-65 to +150
VY200X	200	140	NA	150	25	-65 to +150
VY400X	400	280	NA	150	25	-65 to +150
VY600X	600	400	NA	150	25	-65 to +150

### ELECTRICAL CHARACTERISTICS @ T<sub>A</sub> = 25°C (UNLESS OTHERWISE SPECIFIED)

Varo Part Number	Avalanche Voltage (V <sub>AV</sub> )		Max. Inst. Forward Voltage Drop at I <sub>O</sub> (V <sub>FM</sub> ) (Volts/Leg)	Max. Reverse Current @ Rated V <sub>RRM</sub> & Indicated T <sub>C</sub> (I <sub>RM</sub> ) (mA/Leg)	Max. Reverse Recovery Time (t <sub>rr</sub> ) (nanosec.)	Max. Thermal Res. Junction-to-Case (R <sub>θj-c</sub> ) (°C/Watt)	Write For Data Sheet Number	Pricing*	
	(Min. Volts)	(Max. Volts)						1-99	100-999
<b>10 AMP CONTROLLED AVALANCHE</b>									
IN4436	250	700	1.2	0.2 @ 160°C	NA	1.5	DLS-022	\$4.15	\$3.05
IN4437	450	900	1.2	0.2 @ 160°C	NA	1.5	DLS-022	5.45	4.00
IN4438	650	1100	1.2	0.2 @ 160°C	NA	1.5	DLS-022	7.45	5.45
IN4439	850	1300	1.2	0.2 @ 160°C	NA	1.5	DLS-022	8.94	6.54
<b>10 AMP FAST RECOVERY</b>									
VR100X	NA	NA	1.5	5 @ 150°C	200	1.5	DLS-024	6.30	5.05
VR200X	NA	NA	1.5	5 @ 150°C	200	1.5	DLS-024	7.45	5.95
VR400X	NA	NA	1.5	5 @ 150°C	200	1.5	DLS-024	10.90	8.00
VR600X	NA	NA	1.5	5 @ 150°C	200	1.5	DLS-024	11.95	8.80
<b>25 AMP CONTROLLED AVALANCHE</b>									
VT200	250	700	1.5	5 @ 180°C	NA	1.0	DLS-025	5.35	3.95
VT400	450	900	1.5	5 @ 180°C	NA	1.0	DLS-025	7.00	5.30
VT600	650	1100	1.5	5 @ 180°C	NA	1.0	DLS-025	9.85	7.10
VT800	850	1300	1.5	5 @ 180°C	NA	1.0	DLS-025	11.82	8.52
<b>25 AMP FAST RECOVERY</b>									
VY100X	NA	NA	1.8	5 @ 150°C	200	1.0	DLS-032	8.16	6.54
VY200X	NA	NA	1.8	5 @ 150°C	200	1.0	DLS-032	9.60	7.70
VY400X	NA	NA	1.8	5 @ 150°C	200	1.0	DLS-032	14.00	10.60
VY600X	NA	NA	1.8	5 @ 150°C	200	1.0	DLS-032	15.40	11.66

NOTE 1: Case temperature is measured on the bottom of the case within 0.125 inches of center.

NOTE 2: At I<sub>F</sub> = 1 Amp, I<sub>R</sub> = 2 Amps, Recovery to I<sub>R(REC)</sub> = .2 Amps.

NOTE 3: Also see mounting adapter price adders.

NOTE 4: For V<sub>RRM</sub> (Non-Rep), Add 20% to device V<sub>RRM</sub>.