

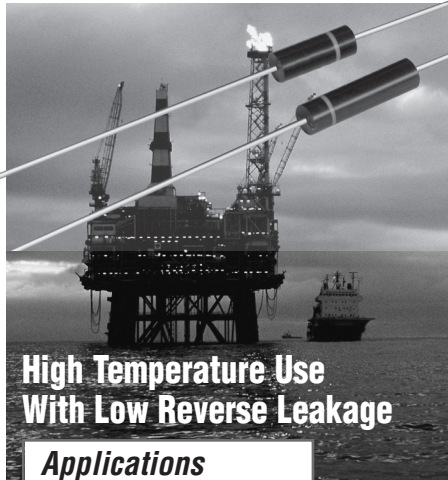
Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM}@55^{\circ}C$ mA	Max. Forward Voltage Drop $V_F@I_F$ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C$ μA	Max. Surge Current I_{FSM}^3 A	Junction Capacitance Typ C_J^2 pF	Max. Reverse Recovery Time T_{RR}^1 nS	Body Length L	Body Diameter D	Lead Diameter d
NV Series - Subminiature High Voltage Diodes T_{RR} 80nS										Figure 2
NV20FP	2000	20	10	0.02	3	0.85	80	0.120	0.080	0.020
NV30FP	3000	20	10	0.02	3	0.85	80	0.120	0.080	0.020
NV40FP	4000	20	10	0.02	3	0.85	80	0.120	0.080	0.020
NV50FP	5000	20	10	0.02	3	0.85	80	0.120	0.080	0.020
G Series - Subminiature High Voltage Diodes T_{RR} 75nS										Figure 2
G2FSA	2000	25	12	0.20	3	0.50	75	0.195	0.080	0.020
G3FSA	3000	25	12	0.20	3	0.50	75	0.195	0.080	0.020
G4FSA	4000	25	12	0.20	3	0.50	75	0.195	0.080	0.020
G5FSA	5000	25	12	0.20	3	0.50	75	0.195	0.080	0.020
G Series - Miniature High Voltage Diodes T_{RR} 100nS										Figure 2
G6FS	6000	25	18	0.20	3	0.38	100	0.320	0.120	0.020
G7FS	7000	25	18	0.20	3	0.38	100	0.320	0.120	0.020
G8FS	8000	25	23	0.20	3	0.65	100	0.320	0.120	0.024
G10FS	10000	25	23	0.20	3	0.65	100	0.320	0.120	0.024
G12FS	12000	25	25	0.20	3	0.26	100	0.400	0.120	0.024
G15FS	15000	25	25	0.20	3	0.26	100	0.400	0.120	0.024
G20FS	20000	25	35	0.20	3	0.25	100	0.470	0.120	0.024
G25FS	25000	25	42	0.20	3	0.20	100	0.470	0.120	0.024
G30FS	30000	25	48	0.20	3	0.26	100	0.470	0.120	0.024
DV Series - Subminiature High Voltage Rectifier T_{RR} 75nS										Figure 2
DV6P	6000	90	8	0.02	3	1.3	75	0.195	0.080	0.020
DV8P	8000	70	11	0.02	3	0.9	75	0.195	0.080	0.020
DV10P	10000	55	16	0.04	3	0.65	75	0.195	0.080	0.020
HVEF Series - Miniature High Voltage Diodes T_{RR} 20nS										Figure 2
HVEF8P	8000	25	20	0.20	3	0.33	20	0.260	0.100	0.021
HVEF10P	10000	20	23	0.20	3	0.30	20	0.400	0.100	0.021
HVEF12P	12000	20	27	0.20	3	0.25	20	0.400	0.100	0.021
HVRL Series - Miniature High Voltage Diodes T_{RR} 100nS										Figure 2
HVRL150	15000	30	30	1.00	3	0.5	100	0.60	0.17	0.032
HVRL200	20000	30	35	1.00	3	1.0	100	0.60	0.17	0.032
HVRL250	25000	30	40	1.00	3	0.9	100	0.60	0.17	0.032
HVRL300	30000	30	45	1.00	3	0.8	100	0.60	0.17	0.032
HVRL400	40000	30	50	1.00	3	0.6	100	0.60	0.17	0.032
HL Series - Miniature High Voltage Diodes T_{RR} 100nS										Figure 2
HL300	3000	40	26	1.00	3	0.3	100	0.4	0.12	0.025
HL500	5000	40	26	1.00	3	0.3	100	0.4	0.12	0.025
HL800	8000	40	26	1.00	3	0.3	100	0.4	0.12	0.025
HL1000	10000	40	26	1.00	3	0.3	100	0.4	0.12	0.025
HL1200	12000	40	26	1.00	3	0.3	100	0.4	0.12	0.025
HVRT Series - Miniature High Voltage Diodes T_{RR} 100nS										Figure 2
HVRT080	8000	30	20	1.00	0.5	0.8	100	0.32	0.12	0.025
HVRT100	10000	30	23	1.00	0.5	0.7	100	0.4	0.12	0.025
HVRT120	12000	30	25	1.00	0.5	0.6	100	0.4	0.12	0.025
HVRT150	15000	55	35	1.00	3	0.5	100	0.47	0.12	0.025
HVRT200	20000	55	35	1.00	3	1.0	100	0.47	0.12	0.025
HVRT250	25000	55	35	1.00	3	0.9	100	0.47	0.12	0.025
HVRT300	30000	55	48	1.00	3	0.8	100	0.47	0.12	0.025

Notes:

¹ See page 23, Fig 141 for data related to T_{RR} measurements.² Diode Junction Capacitance is measured at 1 MHz, $V_R = 0$ and $T_A = 25^{\circ}C$ ³ $\frac{1}{2}$ Sine(60Hz) @ $25^{\circ}C$

All devices listed are RoHS compliant.

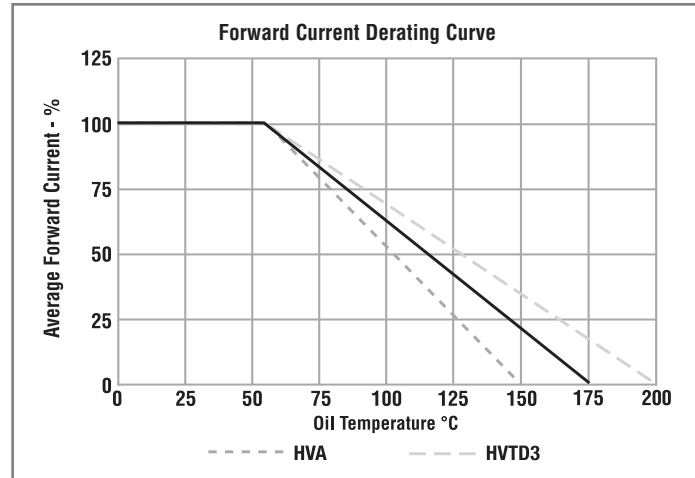
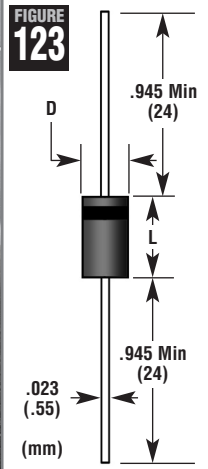
Direct replacements for the discontinued CS4200 and CS4300 series diodes may be found on this page. Contact factory.



High Temperature Use With Low Reverse Leakage

Applications

- Downhole Use
- Oil Well Drilling
- Automotive



Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Average Forward Current Max. $I_{FAVM@55^{\circ}C}$ mA	Average Forward Current Max. $I_{FAVM@175^{\circ}C}$ mA	Maximum Forward Voltage Drop $V_F@I_{FAVM@25^{\circ}C}$ V	Maximum Reverse Current $I_{RR}@25^{\circ}C$ μA	Maximum Reverse Current $I_{RR}@175^{\circ}C$ μA	Maximum Forward Surge Current I_{FSM}^1 A	Typical Reverse Recovery Time T_{RR}^2 nS	Body Length L Inches	Body Diameter D Inches
HVTDR Series - High Temperature Fast Recovery Diodes										
Ambient Operating Temperature Range -55°C to +175°C										
Figure 123										
HVTDR3	3000	25	1	25.0	0.20	14.0	3	300@175°C	0.26	0.10
HVTDR4	4000	25	1	25.0	0.20	15.0	3	300@175°C	0.26	0.10
HVTDR5	5000	25	1	25.0	0.20	16.0	3	300@175°C	0.26	0.10
HVTDR6	6000	25	1	25.0	0.20	18.0	3	300@175°C	0.26	0.10
HVTDR7	7000	25	1	25.0	0.20	20.0	3	300@175°C	0.26	0.10

Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Average Forward Current Max. $I_{FAVM@55^{\circ}C}$ mA	Average Forward Current Max. $I_{FAVM@200^{\circ}C}$ mA	Maximum Forward Voltage Drop $V_F@I_{FAVM@25^{\circ}C}$ V	Maximum Reverse Current $I_{RR}@25^{\circ}C$ μA	Maximum Reverse Current $I_{RR}@200^{\circ}C$ μA	Maximum Forward Surge Current I_{FSM}^1 A	Typical Reverse Recovery Time T_{RR} nS	Body Length L Inches	Body Diameter D Inches
HVTDR Series - Very High Temperature Diodes										
Ambient Operating Temperature Range -55°C to +200°C										
Figure 123										
HVTDR3	3000	50	1	25	0.5	18.0 Typ	3	-	0.40	0.10

Part Number	Max. Reverse Voltage $V_{TA=25^{\circ}C}$ V	Reverse Avalanche Voltage V_Z $I_R=100\mu A@25^{\circ}C$ V	Average Forward Current Max. $I_{TA=55^{\circ}C}$ mA	Max. Forward Voltage Drop $V_F@I_R=1mA@25^{\circ}C$ V	Max. Reverse Current $I_{RR}@25^{\circ}C$ μA	Max. Reverse Current $I_{RR}@150^{\circ}C$ μA	Max. Forward Surge Current I_{FSM}^1 A	Max. Junction Temperature T_{JMAX} °C	Body Length L Inches	Body Diameter D Inches
HVA Series Automotive Diodes³										
Ambient Operating Temperature Range -55°C to +150°C										
Figure 123										
HVA8J	4000	3200 - 6000	150	8.0	2.0	10	3.0	150	.32	.12

Notes:

¹ 1/2 Sine(60Hz) @ 25°C

² T_{RR} 100nS@25°C

³ The HVA8J is used in many automotive applications but has not been subjected to the full AEC Q101 testing regime.

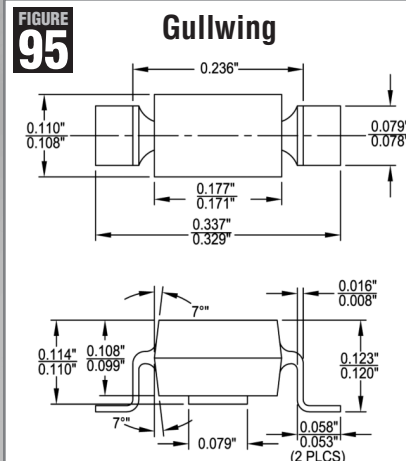
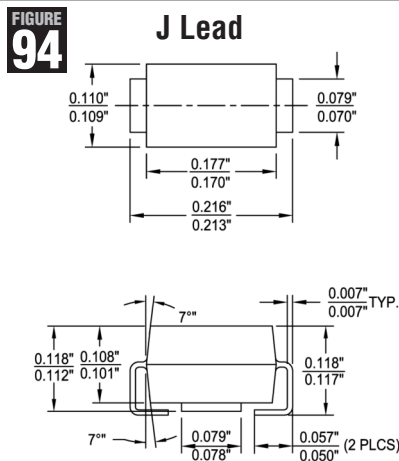
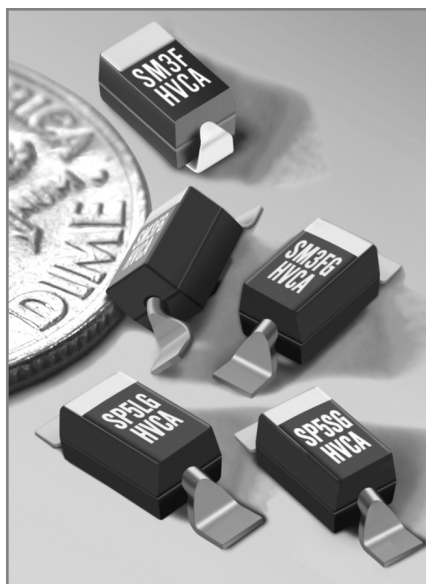
Operating & Storage Temperature -55°C to 150°C unless otherwise noted.

C_J Data is not available for standard recovery devices except by special request

I_R is measured in oil after voltage has been applied for 3 minutes on all HVTDR series diodes.

HVTDR3 – HVTDR7 have the same $C_J = 0.36pF$ measured at $F = 1\text{ MHz}$, $V_R = 0$, $T_A = 25^{\circ}C$

All devices listed are RoHS compliant.



SMA Package Voltages up to 8kV

Currents up to 900mA

Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Average Forward Current Max. $I_{FAVM@T_L=55^{\circ}C}$ mA	Average Forward Current Max. $I_{FAVM@T_L=100^{\circ}C}$ mA	Maximum Forward Voltage Drop $V_F@100mA$ V	Typical Junction Capacitance $C_J@V_R=0$ VDC ¹ (pf)	Maximum Reverse Current IR@ $V_{RRM}@25^{\circ}C$ μA	Maximum Reverse Recovery Time $T_{RR}@25^{\circ}C$ nS	Maximum Surge Current I_{FSM}^2 A	Typical Thermal Resistance $R_{\theta JL}$ ($^{\circ}C/W$) ³
SM & SP Series - High Voltage Surface Mount Diodes					J Lead Devices		Figure 94		
SM3F	3000	900	350	3.7	6.0	0.5	65	10	27
SP3A	3000	750	200	3.2	15.0	0.5	100	15	30
SP3L	3000	450	110	3.6	9.0	0.5	75	10	17
SP3S	3000	120	50	3.9	2.5	0.5	75	3	40
SP5L	5000	270	140	8.5	4.5	0.5	75	10	32
SP5LF	5000	270	140	7.6	6.8	0.5	50	10	32
SP5S	5000	40	20	14.0	1.0	0.5	60	3	55
SM & SP Series - High Voltage Surface Mount Diodes					Gullwing Devices		Figure 95		
SM3FG	3000	900	350	3.7	6.0	0.5	65	10	27
SP3AG	3000	750	200	3.2	15.0	0.5	100	15	30
SP3LG	3000	450	110	3.6	9.0	0.5	75	10	17
SP3SG	3000	120	50	3.9	2.5	0.5	75	3	40
SP5LG	5000	270	140	8.5	4.5	0.5	75	10	32
SP5LFG	5000	270	140	7.6	7.2	0.5	50	10	32
SP5SG	5000	40	20	14.0	1.0	0.5	60	3	55
SP8LG ⁴	8000	100	40	18.0	3.3	0.5	75	10	15
SP8SG ⁴	8000	40	20	18.0	0.8	0.5	75	3	45

Notes:

¹ Diode Junction Capacitance is measured at 1 MHz, $V_R=0$ and $T_A=25^{\circ}C$

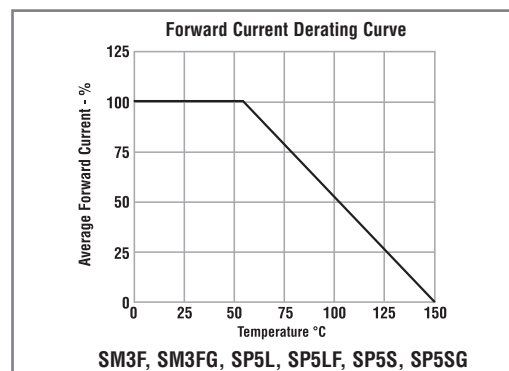
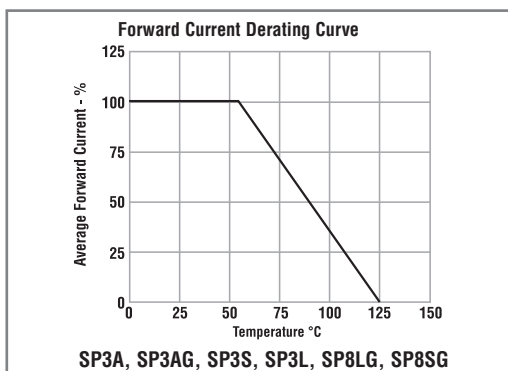
² 1/2 Sine(60Hz) @ 25°C

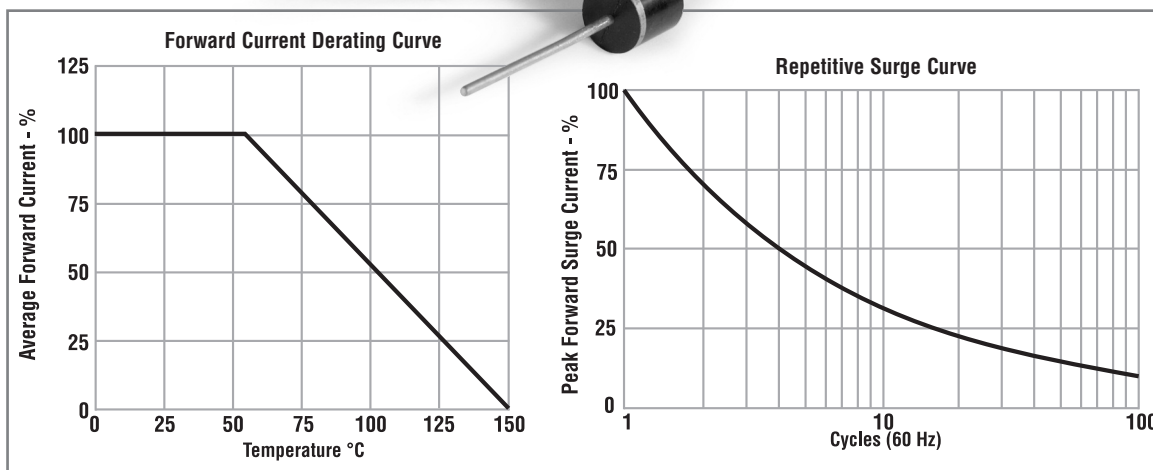
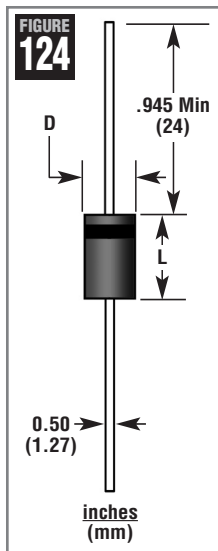
³ P.C.B. mounted on 0.2" x 0.2" (5.0mm x 5.0mm) copper solder pads

⁴ SP8LG & SP8SG should not be operated at voltages above 5kV in air.

See page 23 for notes on max package operating voltage - V_{RRM} vs package applicability
All devices listed are RoHS compliant.

Derating Curves





Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max $I_{FAVM@55^{\circ}C}$ A	Avg. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current $I_R@V_{RRM@25^{\circ}C}$ μA	Max. Surge Current I_{FSM} (8.3ms) A	Typical Junction Capacitance ¹ pF	Max. Reverse Recovery Time T_{RR} ² nS	Body Length L Inches	Body Diameter D Inches
BR Series - High Voltage Medium and High Current Diodes									Figure 124
BR2	2000	1.00	2.4	5.0	40	-	-	0.354	0.197
BR4	4000	0.85	4.4	5.0	20	-	-	0.354	0.197
BR2F	2000	0.9	3.8	5.0	40	35	100	0.354	0.197
BR4F	4000	0.6	7.0	5.0	20	36	100	0.354	0.197
BR5F	5000	0.6	8.8	5.0	20	20	100	0.354	0.197
BR6F	6000	0.5	10.5	5.0	20	19	100	0.354	0.197
BR10F	10000	0.25	14.0	5.0	20	10	100	0.354	0.197
BRU10SF	10000	0.25	17.0	5.0	20	7	75	0.354	0.197
HVW HVRW Series - High Voltage High Current Diodes									Figure 124
HVW3	3000	2.0	3.0	5.0	300	-	-	0.36	0.36
HVRW1	1000	2.5	2.0	10.0	200	105.0	150	0.38	0.32
HVRW2	2000	1.5	4.0	10.0	200	52.0	150	0.38	0.32
HVRW3	3000	1.5	5.0	10.0	200	35.0	150	0.38	0.32
HVRW4	4000	1.0	6.0	10.0	200	27.0	150	0.38	0.32
CL03 Series - High Voltage Medium Current Fast Recovery Diodes									Figure 124
CL03-8	8000	0.40	20.0	2.0	20	6.2	100	0.87	0.3
CL03-10	10000	0.30	25.0	2.0	20	5.3	100	0.87	0.3
CL03-12	12000	0.25	30.0	2.0	20	4.4	100	0.87	0.3
CL03-15	15000	0.20	35.0	2.0	20	3.5	100	0.87	0.3
CL03-20	20000	0.12	38.0	2.0	20	2.8	100	0.87	0.3
2CL100 Series - High Voltage Medium Current Standard Recovery Diodes									Figure 124
2CL105	9000	0.45	10.0	2.0	30	-	-	0.84	0.3
2CL106	12000	0.45	12.0	2.0	30	-	-	0.84	0.3
HV550 Series - High Voltage Medium Current Standard Recovery Diodes									Figure 124
HV550S08	8000	0.55	8.0	5.0	30	-	-	0.87	0.3
HV550S10	10000	0.45	9.0	5.0	30	-	-	0.87	0.3
HV550S12	12000	0.40	12.0	30.0	30	-	-	0.87	0.3
HV550S15	15000	0.35	14.0	30.0	30	-	-	0.87	0.3
HV550S20	20000	0.25	17.0	30.0	30	-	-	0.87	0.3
HV550S25	25000	0.20	21.0	30.0	30	-	-	0.87	0.3
HV550S30	30000	0.20	25.0	30.0	30	-	-	0.87	0.3

Notes:

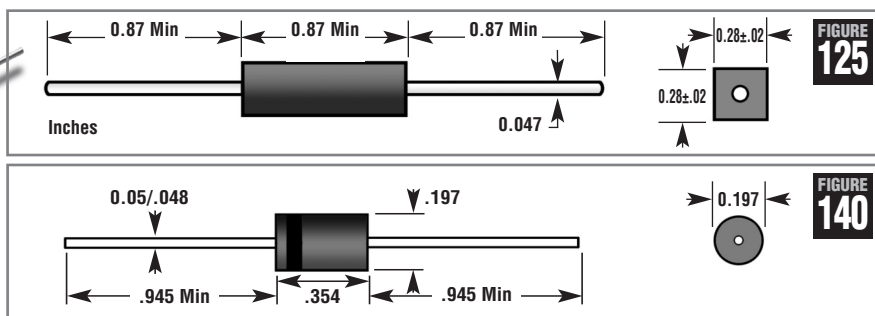
¹ Diode Junction Capacitance is measured at 1 MHz, $V_R=0$ and $T_A=25^{\circ}C$ ² A "-" indicates the component is a standard recovery device and no T_{RR} data is taken. See page 23 for info.

DTI suggests that a proper heatsink is used on the leads of this device to prevent damage from heating and to achieve maximum current capability.

All devices listed are RoHS compliant.

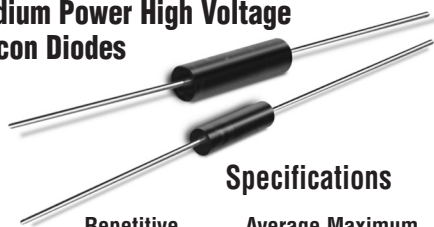


High Voltage Power Diodes Ultra-Fast Recovery

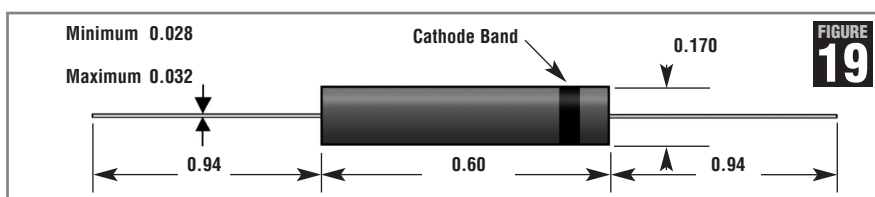


Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Average Maximum Forward Current I_{FAVM} @		Maximum Foward Voltage Drop $V_F @ I_F^3$ V	Maximum Surge Current I_{FSM}^2 A	Maximum Reverse Current $I_R @ V_{RRM} @ 25^{\circ}C$ μA	Typical Junction Cap C_J^1 pF	Maximum Reverse Recovery Time T_{RR} nS	Figure
		$T_A=55^{\circ}C$ mA	$T_{OIL}=55^{\circ}C$ mA						
UX Series - Ultra Fast Recovery High Current Diodes									
UX-FOB	8000	500	600	12	20	0.5	7.5	40	125
UX-FBR8	8000	420	500	12	20	0.5	7.5	40	140
UX-F15B	15000	200	320	16	20	0.5	3.5	50	125
UX-F2CL15	15000	150	250	16	20	0.5	3.5	50	19
HV200UF Series - Ultra Fast Recovery High Current Diodes									
HV200UF3	3000	200	375	15	8	1.0	12	50	140
HV200UF4	4000	200	375	15	8	1.0	12	50	140
HV200UF5	5000	200	375	15	8	1.0	12	50	140

Medium Power High Voltage Silicon Diodes



Specifications



Part Number	Repetitive Peak Reverse Voltage	Average Maximum Forward Current		Maximum Forward Voltage Drop	Maximum Surge Current	Maximum Reverse Current		Typical Junction Cap C _J ¹ pF	Maximum Reverse Recovery Time T _{RR} nS	Figure
	V _{RRM}	^{I_{FAVM}} @T _A =40°C	@T _{OL} =55°C	V _F @I _F ³	I _{FSM} ²	T _A =25°C	T _A =100°C			
	V	mA	mA	V	A	μA	μA			
2CL Series - Medium Current Diodes										
2CL2F	8000	100	220	10	20	2.0	40	-	-	19
2CL2G	10000	100	220	12	20	2.0	40	-	-	19
2CL2H	12000	100	220	13	20	2.0	40	-	-	19
2CL2J	15000	100	220	16	20	2.0	40	-	-	19
2CL2FF	8000	60	120	16	10	2.0	50	4.1	150	19
2CL2FG	10000	60	120	18	10	2.0	50	3.3	150	19
2CL2FH	12000	60	120	20	10	2.0	50	2.3	150	19
2CL2FJ	15000	60	120	24	10	2.0	50	1.8	150	19
2CL2FK	10000	140	240	22	10	2.0	50	2.7	100	19
2CL2FL	15000	120	200	26	10	2.0	50	2.5	100	19
2CL2FM	20000	100	170	35	10	2.0	50	1.9	100	19
2CL2FP	30000	80	140	46	10	2.0	50	1.1	100	19
2CL2FR	35000	60	100	52	10	2.0	50	0.9	100	19
HV Series - High Current Diodes										
HV37-08	8000	210	410	12	15	2.0	10	7.4	150	19
HV37-10	10000	190	365	13	15	2.0	10	6.0	150	19
HV37-10F	10000	190	365	14	15	2.0	10	5.0	120	19
HV07-12B	12000	225	500	11	30	2.0	10	-	-	19

Notes:

¹ Diode Junction Capacitance is measured at 1 MHz, $V_R=0$ and $T_A=25^\circ\text{C}$

² 1/2 Sine(60Hz) @ 25°C

³ V_F measured at 100mA & 25°C

See page 23 for notes on max package operating voltage - V_{RRM} vs package applicability
All devices listed are RoHS compliant.



Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM@55^{\circ}C}$ mA	Max. Forward Voltage Drop $V_F@I_F$ Per Leg V	Max. Reverse Current $I_R@V_{RRM@25^{\circ}C}$ μA	Max. Surge Current I_{FSM} (8.3ms) A	Max. Reverse Recovery Time T_{RR} nS	Figure 20 Board Size
HVB, XRB Series - High Voltage Rectifiers							
HVSB100	100000	220	140	2	20	-	A
HVSB150	150000	220	182	2	20	-	A
HVSB200	200000	220	224	2	20	-	A
HVSBF100	100000	220	308	2	10	100	A
HVSBF150	150000	220	364	2	10	100	A
HVSBF200	200000	220	364	2	10	100	A
XRB100	100000	220	160	2	20	-	B
XRB125	125000	220	192	2	20	-	B
XRB150	150000	220	208	2	20	-	B
XRB175	175000	220	256	2	20	-	B
XRB200	200000	220	256	2	20	-	B
XRBF100	100000	220	352	2	10	100	B
XRBF125	125000	220	352	2	10	100	B
XRBF150	150000	220	416	2	10	100	B
XRBF175	175000	220	416	2	10	100	B
XRBF200	200000	220	416	2	10	100	B
XRBF250	250000	220	560	2	10	100	B
XRLB100	100000	220	170	2	20	-	C
XRLB125	125000	220	204	2	20	-	C
XRLB150	150000	220	221	2	20	-	C
XRLB175	175000	220	221	2	20	-	C
XRLB200	200000	220	272	2	20	-	C
XRLBF100	100000	220	374	2	10	100	C
XRLBF125	125000	220	374	2	10	100	C
XRLBF150	150000	220	442	2	10	100	C
XRLBF175	175000	220	442	2	10	100	C
XRLBF200	200000	220	442	2	10	100	C
XRLBF250	250000	220	595	2	10	100	C
HVMB175	175000	220	230	2	20	-	D
HVMB225	225000	220	276	2	20	-	D
HVMB275	275000	220	299	2	20	-	D
HVMB325	325000	220	368	2	20	-	D
HVMBF225	225000	220	506	2	10	100	D
HVMBF325	325000	220	598	2	10	100	D
HVMBF450	450000	220	805	2	10	100	D
HVB200	200000	220	300	2	20	-	E
HVB250	250000	220	360	2	20	-	E
HVB300	300000	220	360	2	20	-	E
HVB350	350000	220	390	2	20	-	E
HVB450	450000	220	480	2	20	-	E
HVBF200	200000	220	660	2	10	100	E
HVBF250	250000	220	660	2	10	100	E
HVBF300	300000	220	660	2	10	100	E
HVBF350	350000	220	780	2	10	100	E
HVBF450	450000	220	780	2	10	100	E
HVBF600	600000	220	1050	2	10	100	E
HVB•, HVBF• - High Voltage Board Center Tap and Doubler (Voltage is Per Leg, Double the Voltage for the Whole Board)							
HVB•75	75000	220	110	2	20	-	F
HVB•100	100000	220	132	2	20	-	F
HVB•125	125000	220	143	2	20	-	F
HVB•150	150000	220	176	2	20	-	F
HVBF•100	100000	220	242	2	10	100	F
HVBF•150	150000	220	286	2	10	100	F
HVBF•200	200000	220	385	2	10	100	F

Notes:

Where • appears in part number P, N or D should be inserted as appropriate. See explanation at right.

P=Positive Center Tap
N=Negative Center Cap
D=Doubler

Positive Center Tap (P)

Positive Center Tap 220mA, 75000V/LEG HVBP75

Negative Center Tap (N)

Negative Center Tap 220mA, 75000V/LEG HVBN75

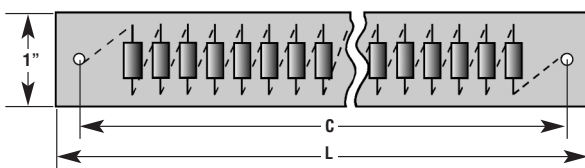
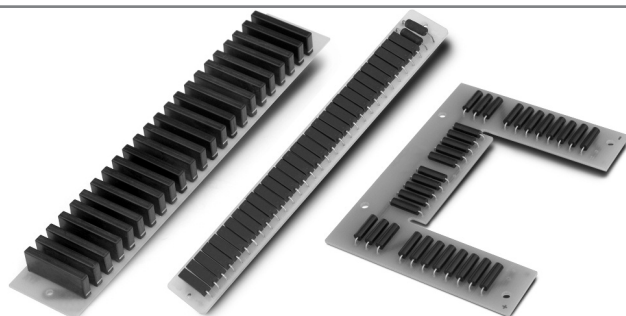
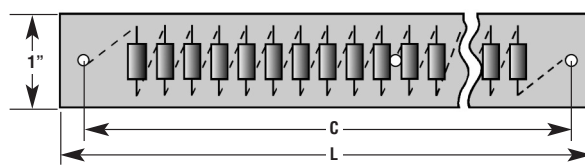
Doubler (D)

(I_{FAVM} of Doubler is $I_{FAVM} \times 0.5$)
 Fast Recovery Doubler 220mA, 75000V/LEG HVBD75

To achieve rated current and voltage, diodes must be submerged in Shell Diala AX electrical insulating oil or equivalent.

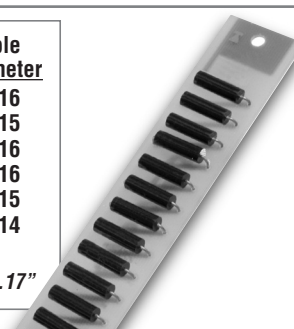
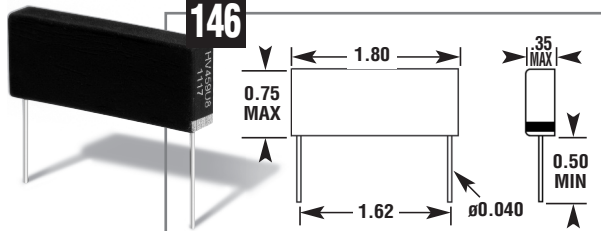
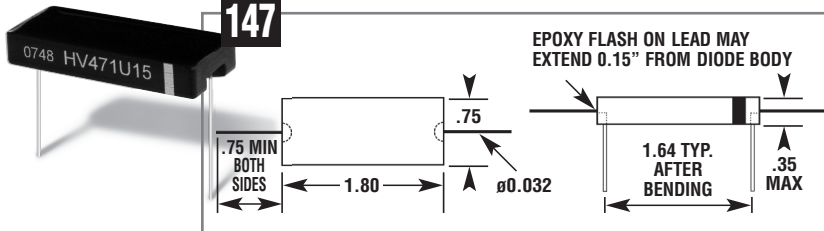
Boards over 200kV are only forward voltage tested after assembly, all individual diodes are reverse tested at full rated voltage before assembly.

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FIGURE 20
High Voltage Board Rectifier Assembly (A-E)

High Voltage Board Rectifier Assembly (F)


Board Size	Dimension L	Dimension C	Hole Diameter
A	4.17	3.85	0.16
B	6	5.6	0.15
C	6.75	6.5	0.16
D	8.6	8.3	0.16
E	10.5	10	0.15
F	6.5	6.17*	0.14

*This is the end hole center to center dimension, middle hole is offset 3" & 3.17"


FIGURE 146

FIGURE 147


Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Average Forward Current Maximum $I_{FAVM}@$ $T_A=25^{\circ}\text{C}$ mA	$T_{OH}=55^{\circ}\text{C}$ mA	Maximum Forward Voltage Drop $V_F@I_F^3$ V	Maximum Reverse Current $I_R@V_{RRM}@25^{\circ}\text{C}$ μA	Typical Junction Capacitance C_j^1 pF	Maximum Reverse Recovery Time T_{RR} nS	Maximum Surge Current I_{FSM} (8.3ms) ² A	Figure
HV459S Series - High Current Rectifiers Standard Recovery									
HV459S8	8000	1100	2000	10.0	10.0	-	-	80	146
HV459S10	10000	970	2000	12.5	10.0	-	-	80	146
HV459S12	12000	850	2000	15.0	10.0	-	-	80	146
HV459U Series - High Current Rectifiers Ultra Fast Recovery									
HV459U8	8000	850	1500	10.7	10.0	8.3	75	45	146
HV459U10	10000	750	1500	13.4	10.0	6.6	75	45	146
HV459U12	12000	650	1500	16.1	10.0	5.5	75	45	146
HV458S Series - Medium Current Rectifiers Standard Recovery									
HV458S8	8000	650	1200	8.0	1.0	-	-	50	146
HV458S10	10000	550	1000	10.0	1.0	-	-	50	146
HV458S12	12000	475	870	12.0	1.0	-	-	50	146
HV458S15	15000	425	780	15.0	1.0	-	-	50	146
HV458U Series - Medium Current Rectifiers Ultra Fast Recover									
HV458U8	8000	425	750	20.0	1.0	4.7	75	30	146
HV458U10	10000	375	660	25.0	1.0	3.8	75	30	146
HV458U12	12000	325	570	30.0	1.0	3.2	75	30	146
HV458U15	15000	275	480	37.5	1.0	2.5	75	30	146
HV471U Series - Medium Current Rectifiers Ultra Fast Recovery									
HV471U8	8000	425	750	20.0	1.0	4.7	75	30	147
HV471U10	10000	375	660	25.0	1.0	3.8	75	30	147
HV471U12	12000	325	570	30.0	1.0	3.2	75	30	147
HV471U15	15000	275	480	37.5	1.0	2.5	75	30	147

¹ Diode Junction Capacitance is measured at 1 Mhz, $V_R=0$ and $T_A=25^{\circ}\text{C}$

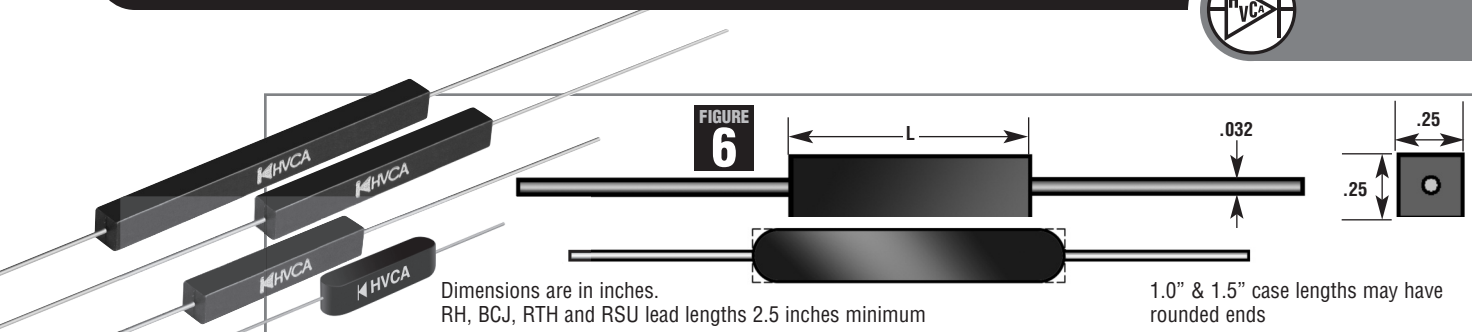
² 1/2 Sine(60Hz) @ 25°C

³ V_F measured at 100mA & 25°C

A "-" indicates the component is a standard recovery device and no T_{RR} data is taken. See page 23 for info.

Storage & Operating Temperatures -55°C to 150°C

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Part Number	Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM@55^{\circ}C}$ mA	Max. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current@25°C $I_R@V_{RRM}$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Case L Inches
RHV Series - Ultra High Voltage Low Current Fast Recovery Rectifiers							Figure 6
RHV15	15000	25	35	1	3	100	2.0
RHV20	20000	25	55	1	3	100	2.0
RHV25	25000	25	55	1	3	100	2.0
RHV30	30000	25	70	1	3	100	3.0
RHV40	40000	25	110	1	3	100	3.0
RHV50	50000	25	110	1	3	100	3.0
RHV60	60000	25	110	1	3	100	3.0
RHV90	90000	25	165	1	3	100	3.0
RHV120	120000	25	220	1	3	100	3.0
RHV150	150000	25	275	1	3	100	3.0
BCHV Series - Very High Voltage Medium Current Standard Recovery Rectifiers							Figure 6
BCHV08	8000	100	10	2	20	-	1.0
BCHV10	10000	100	12	2	20	-	1.0
BCHV12	12000	100	13	2	20	-	1.0
BCHV15	15000	100	16	2	20	-	1.5
BCHV20	20000	100	24	2	20	-	2.0
BCHV25	25000	100	32	2	20	-	2.5
BCHV30	30000	100	32	2	20	-	3.0
BCHV35	35000	100	39	2	20	-	3.0
BCHV40	40000	100	48	2	20	-	3.0
BCHV50	50000	100	64	2	20	-	3.0
BCHV60	60000	100	64	2	20	-	3.0
RTHV Series - Very High Voltage Medium Current Fast Recovery Rectifiers							Figure 6
RTHV08	8000	100	22	2	10	100	1.0
RTHV10	10000	100	22	2	10	100	1.0
RTHV15	15000	100	26	2	10	100	1.5
RTHV20	20000	100	44	2	10	100	2.0
RTHV25	25000	100	52	2	10	100	2.5
RTHV30	30000	100	52	2	10	100	3.0
RTHV40	40000	100	78	2	10	100	3.0
RTHV45	45000	100	78	2	10	100	3.0
RTHV50	50000	100	105	2	10	100	3.0
RTHV60	60000	100	105	2	10	100	3.0
RTHV80	80000	100	140	2	10	100	3.0
RSUF Series - High Current Ultra Fast Recovery Rectifiers							Figure 6
RSUF2	2000	650	2.6	5	10	35	1.0
RSUF3	3000	650	3.9	5	10	35	1.5
RSUF5	5000	550	6.5	5	10	35	2.0
RSUF7	7000	500	9.1	5	10	35	3.0
RSUFH Series - High Current Ultra Fast Recovery Rectifiers							Figure 6
RSUFH12	1200	1500	3.6	10	50	35	1.0
RSUFH18	1800	1500	5.4	10	50	35	1.5
RSUFH24	2400	1250	7.2	10	50	35	2.0
RSUFH36	3600	1250	10.8	10	50	35	2.5
RSUFH42	4200	1250	12.6	10	50	35	3.0
G•PE High Voltage Rectifiers - Poured Epoxy Overmolded Fast Rectifier							Figure 6
G20PE	20000	15	35	0.2	3	100	1
G25PE	25000	15	42	0.2	3	100	1
G30PE	30000	15	48	0.2	3	100	1

G•PE Series lead lengths $\Rightarrow$ 0.75 inches. Lead diameter 0.032 inches

See page 23 for notes on maximum package operating voltages - V_{RRM} vs package

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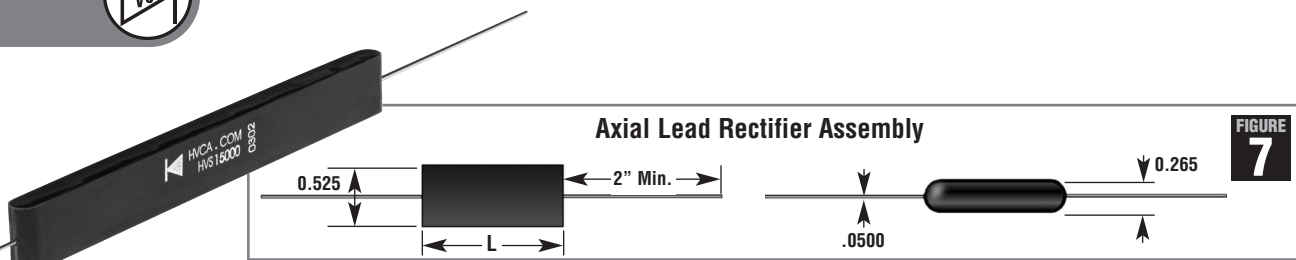


FIGURE 7

Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM}@55^{\circ}C$ A	Max. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Case L Inches
HV Series - Standard Recovery Axial Lead 1.0 Amp Glass Passivated Rectifier							Figure 7
HV5000	5000	0.6	4.5	0.5	50	-	1.125
HV7500	7500	0.6	7.2	0.5	50	-	1.625
HV10000	10000	0.6	9.0	0.5	50	-	2.000
HV15000	15000	0.6	14.0	0.5	50	-	2.750
HV20000	20000	0.6	18.0	0.5	50	-	3.500
HV25000	25000	0.6	22.0	0.5	50	-	4.250
HV30000	30000	0.6	28.0	0.5	50	-	4.250
HVF Series - Fast Recovery Axial Lead 1.0 Amp Glass Passivated Rectifier T_{RR} 150 nS							Figure 7
HVF2500	2500	0.5	6.0	1.0	50	150	1.125
HVF5000	5000	0.5	9.0	1.0	50	150	2.000
HVF7500	7500	0.5	12.0	1.0	50	150	2.750
HVF10000	10000	0.5	15.0	1.0	50	150	3.500
HVF12500	12500	0.5	20.0	1.0	50	150	4.250
HVF15000	15000	0.5	24.0	1.0	50	150	4.250
HVF20000	20000	0.5	30.0	1.0	50	150	4.250
HVUF Series - Ultra Fast Recovery Axial Lead 1.0 Amp Rectifier T_{RR} 75 nS							Figure 7
HVUF2500	2500	0.5	3.3	1.0	35	75	1.125
HVUF5000	5000	0.5	5.5	1.0	35	75	1.125
HVUF7500	7500	0.5	8.8	1.0	35	75	1.625
HVUF10000	10000	0.5	11.0	1.0	35	75	2.000
HVUF12500	12500	0.5	15.0	1.0	35	75	2.750
HVUF15000	15000	0.5	17.0	1.0	35	75	2.750
HVUF20000	20000	0.5	22.0	1.0	35	75	3.500
HVUF25000	25000	0.5	28.0	1.0	35	75	4.250
HVFE Series - Ultra Super Fast Recovery Axial Lead 1.0 Amp Rectifier T_{RR} 35nS							Figure 7
HVFE2500	2500	0.6	13.0	1.0	50	35	2.750
HVFE5000	5000	0.6	24.0	1.0	50	35	4.250
HVUSF Series - Ultra Super Fast Recovery Axial Lead 1.0 Amp Rectifier T_{RR} 35 nS							Figure 7
HVUSF2500	2500	0.5	4.2	1.0	10	35	1.125
HVUSF5000	5000	0.5	7.0	1.0	10	35	2.000
HVUSF7500	7500	0.5	11.2	1.0	10	35	2.750
HVUSF10000	10000	0.5	14.0	1.0	10	35	3.500
HVUSF12500	12500	0.5	18.2	1.0	10	35	4.250
HVUSF15000	15000	0.5	21.0	1.0	10	35	4.250
HVUSF20000	20000	0.5	28.0	1.0	10	35	4.250

See page 23 for notes on max package operating voltage - V_{RRM} vs package applicability

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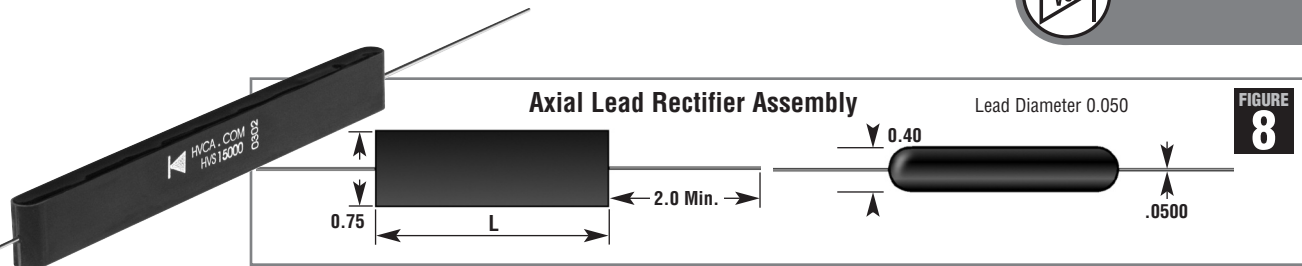
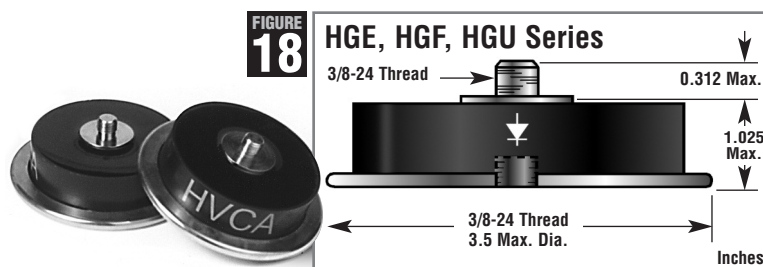
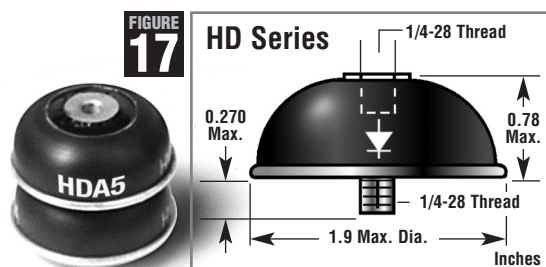


FIGURE 8

Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM@55^{\circ}C}$ A	Max. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current $I_R@V_{RRM@25^{\circ}C}$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Case L Inches
HVS Series - Standard Recovery Axial Lead 3.0 Amp Glass Passivated Rectifier Assembly							Figure 8
HVS2500	2500	1.1	2.4	0.5	150	-	1.5
HVS5000	5000	1.1	4.5	0.5	150	-	2.5
HVS7500	7500	1.1	7.2	0.5	150	-	3.5
HVS10000	10000	1.1	9.0	0.5	150	-	4.5
HVS12500	12500	1.1	11.0	0.5	150	-	5.5
HVS15000	15000	1.1	14.0	0.5	150	-	6.5
HVS20000	20000	1.1	18.0	0.5	150	-	6.5
HVS25000	25000	1.1	22.0	0.5	150	-	6.5
HVS30000	30000	1.1	28.0	0.5	150	-	6.5
HVFS Series - Fast Recovery Axial Lead 3.0 Amp Glass Passivated Rectifier Assembly T_{RR} 250 nS							Figure 8
HVFS2500	2500	0.75	4.0	0.5	100	250	1.5
HVFS5000	5000	0.75	7.0	0.5	100	250	2.5
HVFS7500	7500	0.75	11.0	0.5	100	250	3.5
HVFS10000	10000	0.75	13.0	0.5	100	250	4.5
HVFS12500	12500	0.75	17.0	0.5	100	250	5.5
HVFS15000	15000	0.75	22.0	0.5	100	250	6.5
HVFS20000	20000	0.75	26.0	0.5	100	250	6.5
HVFS25000	25000	0.75	34.0	0.5	100	250	6.5
HVFS30000	30000	0.75	44.0	0.5	100	250	6.5
HVFES Series - Ultra Super Fast Recovery Axial Lead 3.0 Amp Fast Efficient Glass Passivated Rectifier Assembly T_{RR} 35 nS							Figure 8
HVFES2500	2500	1.3	13.0	5.0	50	35	3.5
HVFES5000	5000	1.3	24.0	5.0	50	35	6.5
HVUFS Series - Ultra Fast Recovery Axial Lead 3.0 Amp Rectifier Assembly T_{RR} 75 nS							Figure 8
HVUFS2000	2500	2.0	4.2	5.0	150	75	1.5
HVUFS5000	5000	2.0	7.0	5.0	150	75	2.5
HVUFS7500	7500	2.0	11.2	5.0	150	75	3.5
HVUFS10000	10000	1.75	14.0	5.0	150	75	4.5
HVUFS12500	12500	1.75	18.2	5.0	150	75	5.5
HVUFS15000	15000	1.75	21.0	5.0	150	75	6.5
HVUFS20000	20000	1.75	28.0	5.0	150	75	6.5
HVUFS25000	25000	1.75	35.0	5.0	150	75	6.5
HVUSFS Series - Ultra Super Fast Recovery Axial Lead 2.0 Amp Rectifier Assembly T_{RR} 40 nS							Figure 8
HVUSFS2000	2500	1.25	6.0	5.0	60	40	1.5
HVUSFS5000	5000	1.25	10.0	5.0	60	40	2.5
HVUSFS7500	7500	1.25	16.0	5.0	60	40	3.5
HVUSFS10000	10000	1.25	20.0	5.0	60	40	4.5
HVUSFS12500	12500	1.0	26.0	5.0	60	40	5.5
HVUSFS15000	15000	1.0	30.0	5.0	60	40	6.5
HVUSFS20000	20000	1.0	40.0	5.0	60	40	6.5

See page 23 for notes on max package operating voltage - V_{RRM} vs package applicability

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Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM}@T_C 75^{\circ}C$ A	Max. Forward Voltage Drop $V_F@I_F$ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Figure
HD Series - Standard Recovery Hi-Bel 1.0 and 3.0 Amp Glass Passivated Rectifier Assembly							
HDB2.5	2500	3.0	2.2	0.5	150	-	17
HDB5	5000	2.0	4.4	0.5	150	-	17
HDA5	5000	1.7	4.5	0.5	150	-	17
HDB7.5	7500	1.4	6.6	0.5	150	-	17
HDA7.5	7500	1.3	6.6	0.5	150	-	17
HDB10	10000	1.2	9.0	0.5	150	-	17
HDA10	10000	1.0	9.0	0.5	150	-	17
HDA15	15000	0.7	12.0	0.5	50	-	17
HDA20	20000	0.6	17.0	0.5	50	-	17
HD Series - Standard Recovery Hi-Bel 6.0 Amp Rectifier Assembly							
HDE2.5	2500	4.0	3.0	5.0	400	-	17
HDE5	5000	4.0	5.0	5.0	400	-	17
HD Series - Fast Recovery Hi-Bel 1.0 and 3.0 Amp Glass Passivated Rectifier Assembly							
HDD2.5	2500	2.3	4.0	0.5	100	250	17
HDD5	5000	1.5	7.0	0.5	100	250	17
HDC5	5000	1.2	7.0	0.5	100	250	17
HDD7.5	7500	1.0	11.0	0.5	100	250	17
HDC7.5	7500	0.9	11.0	0.5	100	250	17
HDC10	10000	0.8	13.0	0.5	50	150	17
HDC15	15000	0.6	22.0	0.5	50	150	17
HD Series - Fast Recovery Hi-Bel 6.0 Amp Rectifier Assembly							
HGEF2.5	2500	3.0	3.6	5.0	200	350	17
HGEF5	5000	3.0	6.0	5.0	200	350	17
HD Series - Ultra Fast Recovery Hi-Bel Rectifier Assembly							
HDU1.5	1500	1.0	8.0	1.0	50	35	17
HDU2	2000	0.9	10.0	1.0	50	35	17
HDU3	3000	0.7	15.0	1.0	50	35	17
HDV1.5	1500	1.4	8.0	5.0	125	35	17
HDV2	2000	1.3	10.0	5.0	125	35	17
HDT1	1000	2.5	2.0	10.0	250	50	17
HDT1.5	1500	2.0	3.0	10.0	250	50	17
HD Series - Ultra Fast Recovery Hi-Bel 1.0 and 3.0 Amp Rectifier Assembly							
HDAUF5	5000	0.8	5.5	1.0	35	75	17
HDBUF5.0	5000	2.25	7.0	5.0	150	75	17
HDAUF7.5	7500	0.8	8.8	1.0	35	75	17
HDBUF7.5	7500	2.25	11.2	5.0	150	75	17
HDAUF10	10000	0.8	11.0	1.0	35	75	17
HDAUF15	15000	0.8	17.0	1.0	35	75	17
HD Series - Ultra Super Fast Recovery 1.0 and 2.0 Amp Rectifier Assembly							
HDAUSF5	5000	0.65	7.0	1.0	10	35	17
HDBUSF5	5000	1.75	10.0	5.0	60	40	17
HDAUSF7.5	7500	0.65	11.2	1.0	10	35	17
HDAUSF10	10000	0.65	14.0	5.0	10	35	17
HGE Series - Standard Recovery Hi-Bel Glass Passivated Rectifier Assembly							
HGE2.5	2500	8	3.3	10	200	-	18
HGE5	5000	8	5.5	10	200	-	18
HGF Series - Fast Recovery Hi-Bel Glass Passivated Rectifier Assembly							
HGF2.5	2500	8	5.2	10	150	150	18
HGF5	5000	8	9.0	10	150	150	18
HGU Series - Ultra Fast Recovery Hi-Bel Glass Passivated Rectifier Assembly							
HGU2	2000	10	6.0	10	250	50	18

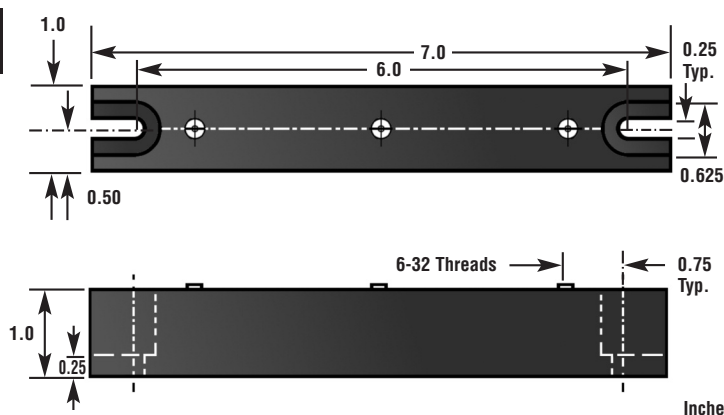
Please Note: These parts are replacements for Unitrode. Custom parts available, please consult factory.
All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.



HG, 3HG, 6HG, Rectifier Blocks High Voltage, Mounting Slots



Please Note:
For  Halfwave Assemblies,
omit center terminal

**FIGURE
15**


Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg V	Avg. Forward Current Max. $I_{FAVM}@55^{\circ}\text{C}$ Per Leg A	Max. Forward Voltage Drop $V_F@I_{FAVM}$ Per Leg V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}\text{C}$ μA	Max. Surge Current $I_{FSM}(8.3\text{ms})$ A	Max. Reverse Recovery Time T_{RR} nS	Figure
HG - 1.0 Amp Glass Passivated Rectifier Assembly							
HG10	10000	1.00	9.0	0.5	50	-	15
HG15	15000	1.00	14.0	0.5	50	-	15
HG20	20000	1.00	18.0	0.5	50	-	15
HG25	25000	0.80	22.0	0.5	50	-	15
HG30	30000	0.80	28.0	0.5	50	-	15
HG40	40000	0.80	36.0	0.5	50	-	15
HG50	50000	0.80	44.0	0.5	50	-	15
HG• - 1.0 Amp Glass Passivated Center Tap and Doubler Assembly							
HG•5	5000	2.00	4.5	0.5	50	-	15
HG•10	10000	2.00	9.0	0.5	50	-	15
HG•15	15000	1.60	14.0	0.5	50	-	15
HG•20	20000	1.60	18.0	0.5	50	-	15
HG•25	25000	1.60	22.0	0.5	50	-	15
3HG - 3.0 Amp Glass Passivated Rectifier Assembly							
3HG10	10000	2.50	9.0	0.5	150	-	15
3HG15	15000	2.25	14.0	0.5	150	-	15
3HG20	20000	2.25	18.0	0.5	150	-	15
3HG25	25000	2.00	22.0	0.5	150	-	15
3HG30	30000	2.00	28.0	0.5	150	-	15
3HG• - 3.0 Amp Glass Passivated Center Tap and Doubler Assembly							
3HG•5	5000	2.50	4.8	0.5	150	-	15
3HG•10	10000	2.25	9.0	0.5	150	-	15
3HG•15	15000	2.00	14.0	0.5	150	-	15
3HG•RC - Resistor-Capacitor Compensated 3.0 Amp Glass Passivated Rectifier Assembly							
3HG10RC	10000	3.00	9.0	500	150	-	15
3HG15RC	15000	2.75	14.0	500	150	-	15
3HG20RC	20000	2.50	18.0	500	150	-	15
6HG - 6.0 Amp Rectifier Assembly							
6HG10	10000	3.00	10.0	5.0	400	-	15
6HG15	15000	2.75	15.0	5.0	400	-	15
6HG20	20000	2.50	20.0	5.0	400	-	15
6HG•RC - Resistor-Capacitor Compensated 6.0 Amp Rectifier Assembly							
6HG10RC	10000	3.60	10.0	500	400	-	15
6HG15RC	15000	3.30	15.0	500	400	-	15
6HG18RC	18000	3.00	18.0	500	400	-	15

Available with resistor and capacitor or capacitor only compensation.

Add "T" for turret at end of part number.
Example: 3HG20T

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Where • appears in the part number, substitute the letter N, P or D for the appropriate assembly configuration. i.e. 3HGD5 is a 5kV, 2.5A doubler

Please Note:
Different circuit arrangements are identified by using a **Circuit Code Letter**.
P=Positive Center Tap
N=Negative Center Cap
D=Doubler

Positive Center Tap (HGP)

 Positive Center Tap 2.0A, 10000V/LEG HGP10

Negative Center Tap (HGN)

 Negative Center Tap 1.6A, 25000V/LEG HGN25

Doubler (3HGD)

 (LEG of Doubler is $I_{FAVM} \times 0.5$)
Doubler 2.0A, 15000V/LEG 3HGD15



Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg V	Avg. Forward Current Max. $I_{FAVM}@55^{\circ}\text{C}$ Per Leg A	Max. Forward Voltage Drop $V_F@I_F$ Per Leg V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}\text{C}$ μA	Max. Surge Current I_{FSM} (8.3ms) A	Max. Reverse Recovery Time T_{RR} nS	Figure
HGUF Series - Ultra Fast Recovery 1.0 Amp Rectifier Assembly T_{RR} 75nS							
HGUF10	10000	0.9	11.0	1.0	35	75	15
HGUF15	15000	0.9	17.0	1.0	35	75	15
HGUF20	20000	0.7	22.0	1.0	35	75	15
HGUF25	25000	0.7	28.0	1.0	35	75	15
HGUF30	30000	0.7	34.0	1.0	35	75	15
HGUF40	40000	0.7	44.0	1.0	35	75	15
HGUF50	50000	0.7	56.0	1.0	35	75	15
HGUSF Series - Ultra Super Fast Recovery 1.0 Amp Rectifier Assembly T_{RR} 35nS							
HGUSF10	10000	0.65	14.0	1.0	10	35	15
HGUSF15	15000	0.65	21.0	1.0	10	35	15
HGUSF20	20000	0.5	28.0	1.0	10	35	15
HGUSF25	25000	0.5	35.0	1.0	10	35	15
HGUSF30	30000	0.5	42.0	1.0	10	35	15
HGUSF40	40000	0.4	56.0	1.0	10	35	15
HGUSF50	50000	0.4	70.0	1.0	10	35	15
2HGUSF Series - Ultra Super Fast Recovery 2.0 Amp Rectifier Assembly T_{RR} 40nS							
2HGUSF10	10000	1.75	20.0	5.0	60	40	15
2HGUSF15	15000	1.5	30.0	5.0	60	40	15
2HGUSF20	20000	1.5	40.0	5.0	60	40	15
3HGUF Series - Ultra Fast Recovery 3.0 Amp Rectifier Assembly T_{RR} 75nS							
3HGUF10	10000	2.25	14.0	5.0	150	75	15
3HGUF15	15000	2.25	21.0	5.0	150	75	15
3HGUF20	20000	2.25	28.0	5.0	150	75	15
3HGUF25	25000	1.75	35.0	5.0	150	75	15
3HGUF30	30000	1.75	42.0	5.0	150	75	15
3HGUF Series - Ultra Fast Recovery 3.0 Amp Center Tap and Doubler Assembly T_{RR} 75nS							
3HGUF•5	5000	2.25	7.0	5.0	150	75	15
3HGUF•10	10000	2.25	14.0	5.0	150	75	15
3HGUF•15	15000	1.75	21.0	5.0	150	75	15
HGUF Series - Ultra Fast Recovery 1.0 Amp Center Tap and Doubler Assembly T_{RR} 75nS							
HGUF•5	5000	0.9	5.5	1.0	35	75	15
HGUF•10	10000	0.7	11.0	1.0	35	75	15
HGUF•15	15000	0.7	17.0	1.0	35	75	15
HGUF•20	20000	0.7	22.0	1.0	35	75	15
HGUF•25	25000	0.7	28.0	1.0	35	75	15
6HGF Series - Fast Recovery 6.0 Amp Rectifier Assembly T_{RR} 350nS							
6HGF10	10000	2.5	12.0	5.0	200	350	15
6HGF15	15000	2.5	18.0	5.0	200	350	15
6HGF20	20000	2.25	24.0	5.0	200	350	15
HGUSF Series - Ultra Super Fast Recovery 1.0 Amp Center Tap and Doubler Assembly T_{RR} 35nS							
HGUSF•5	5000	0.65	7.0	1.0	10	35	15
HGUSF•10	10000	0.5	14.0	1.0	10	35	15
HGUSF•15	15000	0.5	21.0	1.0	10	35	15
2HGUSF Series - Ultra Super Fast Recovery 2.0 Amp Center Tap and Doubler Assembly T_{RR} 40nS							
2HGUSF•5	5000	1.75	10.0	5.0	60	40	15
2HGUSF•10	10000	1.5	20.0	5.0	60	40	15

Available with resistor and capacitor or capacitor only compensation.

Add "T" for turret at end of part number.
Example: 6HGF10T

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Where • appears in the part number, substitute the letter N, P or D for the appropriate assembly configuration. i.e. 3HGD5 is a 5kV, 2.5A doubler

Please note:

Different circuit arrangements are identified by using a **Circuit Code Letter**.
P=Positive Center Tap
N=Negative Center Cap
D=Doubler

Positive Center Tap (HGP)



Positive Center Tap 2.0A, 10000V/LEG HGUPF5

Negative Center Tap (HGN)



Negative Center Tap 1.6A, 25000V/LEG HGUFN5

Doubler (3HGD)



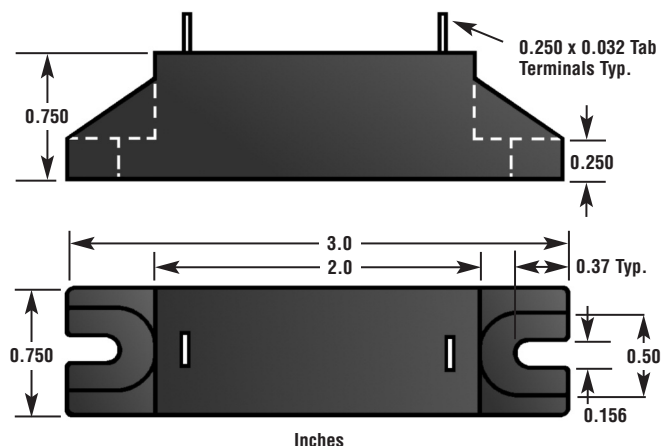
(I_{FAVM} of Doubler is $I_{FAVM} \times 0.5$)
Doubler 2.0A, 15000V/LEG HGUFN5



HC, 3HC, 3HCF, HCUF Rectifier Blocks High Voltage, Mounting Slots

**FIGURE
14**


Please Note:
For Solder Turrets Add Suffix "T"



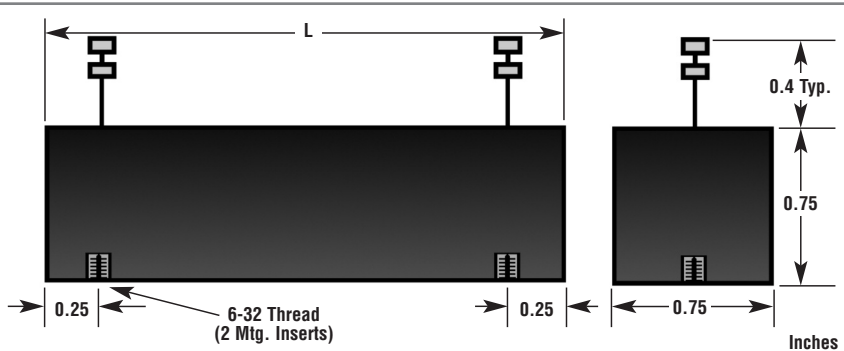
Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM@55^{\circ}C}$ A	Max. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Figure
HC Series - Standard Recovery 1.0 Amp Glass Passivated Rectifier Assembly							
HC5	5000	1.0	4.5	0.5	50	-	14
HC8	8000	1.0	7.2	0.5	50	-	14
HC10	10000	1.0	9.0	0.5	50	-	14
HC12	12000	0.8	10.5	0.5	50	-	14
HC15	15000	0.7	14.0	0.5	50	-	14
HC20	20000	0.6	21.0	0.5	50	-	14
3HC Series - Standard Recovery 3.0 Amp Glass Passivated Rectifier Assembly							
3HC5	5000	2.5	4.8	0.5	150	-	14
3HC10	10000	2.0	9.0	0.5	150	-	14
3HC12	12000	1.75	10.5	0.5	150	-	14
3HC15	15000	1.5	13.2	0.5	150	-	14
HCF Series - Fast Recovery 1.0 Amp Glass Passivated Rectifier Assembly T_{RR} 150nS							
HCF5	5000	1.0	8.0	1.0	50	150	14
HCF8	8000	1.0	12.0	1.0	50	150	14
HCF10	10000	0.8	15.0	1.0	50	150	14
HCF12	12000	0.7	18.0	1.0	50	150	14
3HCF Series - Fast Recovery 3.0 Amp Glass Passivated Rectifier Assembly T_{RR} 250nS							
3HCF5	5000	2.0	7.0	0.5	100	250	14
3HCF10	10000	1.5	13.0	0.5	100	250	14
HCUF Series - Ultra Fast Recovery 1.0 Amp Rectifier Assembly T_{RR} 75nS							
HCUF5	5000	1.0	5.5	1.0	35	75	14
HCUF8	8000	1.0	8.8	1.0	35	75	14
HCUF10	10000	0.8	11.0	1.0	35	75	14
HCUF12	12000	0.7	13.2	1.0	35	75	14
HCUF15	15000	0.6	17.0	1.0	35	75	14
HCUSF Series - Ultra Super Fast Recovery 1.0 Amp Rectifier Assembly T_{RR} 35nS							
HCUSF5	5000	0.65	7.0	1.0	10	35	14
HCUSF8	8000	0.65	11.2	1.0	10	35	14
HCUSF10	10000	0.5	14.0	1.0	10	35	14
HCUSF12	12000	0.5	16.8	1.0	10	35	14
HCUSF15	15000	0.5	21.0	1.0	10	35	14
2HCUSF Series - Ultra Super Fast Recovery 2.0 Amp Rectifier Assembly T_{RR} 40nS							
2HCUSF3	3000	1.75	6.0	5.0	60	40	14
2HCUSF5	5000	1.75	10.0	5.0	60	40	14
2HCUSF8	8000	1.5	16.0	5.0	60	40	14
3HCUF Series - Fast Recovery 3.0 Amp Rectifier Assembly T_{RR} 75nS							
3HCUF5	5000	2.25	7.0	5.0	150	75	14
3HCUF8	8000	2.0	11.2	5.0	150	75	14
3HCUF10	10000	2.0	14.0	5.0	150	75	14

See page 23 for notes on max package operating voltage - V_{RRM} vs package applicability

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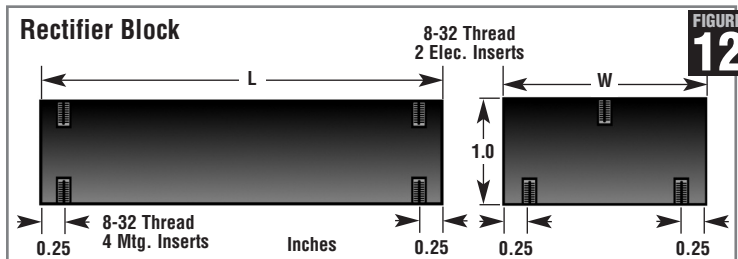
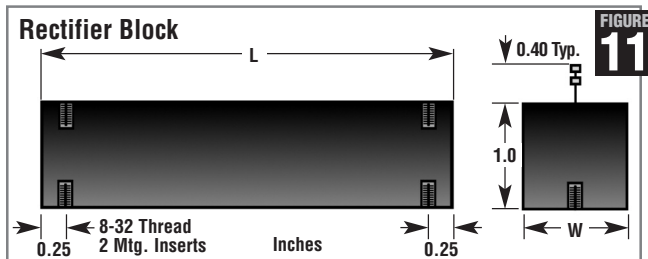
Rectifier Block

**FIGURE 10**

Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM@55^{\circ}C}$ A	Max. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current $I_R@V_{RRM@25^{\circ}C}$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Case L Inches
1HVK Series - Standard Recovery Block 1.0 Amp Glass Passivated Rectifier Assembly							Figure 10
1HV5K	5000	1.0	4.5	1.0	50	-	2.5
1HV8K	8000	1.0	7.2	1.0	50	-	3.5
1HV10K	10000	1.0	9.0	1.0	50	-	3.5
1HV15K	15000	1.0	14.0	1.0	50	-	5.0
1HV20K	20000	1.0	18.0	1.0	50	-	5.0
1HV25K	25000	0.75	22.0	1.0	50	-	6.0
1HV30K	30000	0.75	28.0	1.0	50	-	6.0
1HV40K	40000	0.75	36.0	1.0	50	-	7.0
1HV50K	50000	0.75	44.0	1.0	50	-	7.0
1HV60K	60000	0.75	56.0	1.0	50	-	7.0
1HVF Series - Fast Recovery Block 1.0 Amp Glass Passivated Rectifier Assembly T_{RR} 150nS							Figure 10
1HVF5K	5000	0.9	8.0	0.5	50	150	2.5
1HVF8K	8000	0.9	12.0	0.5	50	150	3.5
1HVF10K	10000	0.9	15.0	0.5	50	150	3.5
1HVF15K	15000	0.9	24.0	0.5	50	150	5.0
1HVF20K	20000	0.7	30.0	0.5	50	150	5.0
1HVF25K	25000	0.7	40.0	0.5	50	150	6.0
1HVF30K	30000	0.7	48.0	0.5	50	150	6.0
1HVF40K	40000	0.7	60.0	0.5	50	150	7.0
1HVF50K	50000	0.7	78.0	0.5	50	150	7.0
1HVUF Series - Ultra Fast Recovery Block 1.0 Amp Rectifier Assembly T_{RR} 75nS							Figure 10
1HVUF5K	5000	0.9	5.5	1.0	35	75	2.5
1HVUF8K	8000	0.9	8.8	1.0	35	75	3.5
1HVUF10K	10000	0.9	11.0	1.0	35	75	3.5
1HVUF15K	15000	0.9	17.0	1.0	35	75	5.0
1HVUF20K	20000	0.7	22.0	1.0	35	75	5.0
1HVUF25K	25000	0.7	28.0	1.0	35	75	6.0
1HVUF30K	30000	0.7	34.0	1.0	35	75	6.0
1HVUF40K	40000	0.7	44.0	1.0	35	75	7.0
1HVUF50K	50000	0.7	56.0	1.0	35	75	7.0
1HVFEK Series - Ultra Super Fast Recovery Block 1.0 Amp Fast Efficient Glass Passivated Rectifier Assembly T_{RR} 35nS							Figure 10
1HVFE3K	3000	1.0	15.0	1.0	50	35	5.0
1HVFE5K	5000	0.75	24.0	1.0	50	35	6.0
1HVFE10K	10000	0.75	48.0	1.0	50	35	7.0
1HVUSFK Series - Ultra Super Fast Recovery Block 1.0 Amp Rectifier Assembly T_{RR} 35nS							Figure 10
1HVUSF5K	5000	0.65	7.0	1.0	10	35	2.5
1HVUSF8K	8000	0.65	11.2	1.0	10	35	3.5
1HVUSF10K	10000	0.65	14.0	1.0	10	35	3.5
1HVUSF15K	15000	0.65	21.0	1.0	10	35	5.0
1HVUSF20K	20000	0.5	28.0	1.0	10	35	5.0
1HVUSF25K	25000	0.5	35.0	1.0	10	35	6.0
1HVUSF30K	30000	0.5	42.0	1.0	10	35	6.0
1HVUSF40K	40000	0.5	56.0	1.0	10	35	7.0
1HVUSF50K	50000	0.5	70.0	1.0	10	35	7.0

Available with resistor and capacitor or capacitor only compensation.

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Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Forward Current Max. $I_{FAVM@55^{\circ}C}$ A	Max. Forward Voltage Drop $V_F@I_{FAVM}$ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C$ μA	Max. Surge Current $I_{FSM}(8.3ms)$ A	Max. Reverse Recovery Time T_{RR} nS	Case Dimension LxW Inches	Figure
2HUSF K Series - Ultra Super Fast Recovery Block 2.0 Amp Rectifier Assembly T_{RR} 40nS								
2HUSF5K	5000	2.0	10.0	5.0	60	40	4.0x1.0	11
2HUSF8K	8000	1.75	16.0	5.0	60	40	6.0x1.0	11
2HUSF10K	10000	1.5	20.0	5.0	60	40	7.0x1.0	11
2HUSF15K	15000	1.5	30.0	5.0	60	40	4.0x2.0	12
2HUSF20K	20000	1.25	40.0	5.0	60	40	6.0x2.0	12
2HUSF25K	25000	1.25	50.0	5.0	60	40	8.0x2.0	12
2HUSF30K	30000	1.25	60.0	5.0	60	40	4.0x3.0	12
2HUSF40K	40000	1.25	80.0	5.0	60	40	8.0x3.0	12
2HUSF50K	50000	1.25	100.0	5.0	60	40	6.0x4.0	12
3HV K Series - Standard Recovery Block 3.0 Amp Glass Passivated Rectifier Assembly								
3HV5K	5000	3.0	4.8	0.5	150	-	4.0x1.0	11
3HV8K	8000	2.75	7.5	0.5	150	-	6.0x1.0	11
3HV10K	10000	2.5	9.0	0.5	150	-	7.0x1.0	11
3HV15K	15000	2.5	14.0	0.5	150	-	4.0x2.0	12
3HV20K	20000	2.25	18.0	0.5	150	-	6.0x2.0	12
3HV25K	25000	2.25	22.0	0.5	150	-	8.0x2.0	12
3HV30K	30000	2.25	28.0	0.5	150	-	4.0x3.0	12
3HV40K	40000	2.25	36.0	0.5	150	-	8.0x3.0	12
3HV50K	50000	2.25	44.0	0.5	150	-	6.0x4.0	12
3HVF K Series - Fast Recovery Block 3.0 Amp Glass Passivated Rectifier Assembly T_{RR} 250nS								
3HVF5K	5000	2.5	7.0	0.5	100	250	4.0x1.0	11
3HVF8K	8000	2.5	11.0	0.5	100	250	6.0x1.0	11
3HVF10K	10000	2.5	13.0	0.5	100	250	7.0x1.0	11
3HVF15K	15000	2.25	22.0	0.5	100	250	4.0x2.0	12
3HVF20K	20000	2.25	26.0	0.5	100	250	6.0x2.0	12
3HVF25K	25000	2.25	34.0	0.5	100	250	8.0x2.0	12
3HVF30K	30000	2.25	40.0	0.5	100	250	4.0x3.0	12
3HVF40K	40000	2.25	52.0	0.5	100	250	8.0x3.0	12
3HVF50K	50000	2.25	68.0	0.5	100	250	6.0x4.0	12
3HUF K Series - Ultra Fast Recovery Block 3.0 Amp Rectifier Assembly T_{RR} 75nS								
3HUF5K	5000	3.0	7.0	5.0	150	75	4.0x1.0	11
3HUF8K	8000	2.75	11.0	5.0	150	75	6.0x1.0	11
3HUF10K	10000	2.5	14.0	5.0	150	75	7.0x1.0	11
3HUF15K	15000	2.5	21.0	5.0	150	75	4.0x2.0	12
3HUF20K	20000	2.25	28.0	5.0	150	75	6.0x2.0	12
3HUF25K	25000	2.25	35.0	5.0	150	75	8.0x2.0	12
3HUF30K	30000	2.25	42.0	5.0	150	75	4.0x3.0	12
3HUF40K	40000	2.25	56.0	5.0	150	75	8.0x3.0	12
3HUF50K	50000	2.25	70.0	5.0	150	75	6.0x4.0	12
6HV K Series - Standard Recovery Block 6.0 Amp Rectifier Assembly								
6HV5K	5000	3.5	5.0	5.0	400	-	4.0x1.0	11
6HV8K	8000	3.25	8.0	5.0	400	-	6.0x1.0	11
6HV10K	10000	3.0	10.0	5.0	400	-	7.0x1.0	11
6HV15K	15000	3.0	15.0	5.0	400	-	4.0x2.0	12
6HV20K	20000	2.75	20.0	5.0	400	-	6.0x2.0	12
6HV25K	25000	2.5	25.0	5.0	400	-	8.0x2.0	12
6HV30K	30000	2.5	30.0	5.0	400	-	4.0x3.0	12
6HV40K	40000	2.5	40.0	5.0	400	-	8.0x3.0	12
6HV50K	50000	2.5	50.0	5.0	400	-	6.0x4.0	12
6HVF K Series - Fast Recovery Block 6.0 Amp Rectifier Block T_{RR} 350nS								
6HVF5K	5000	3.0	6.0	5.0	200	350	4.0x1.0	11
6HVF8K	8000	2.75	9.6	5.0	200	350	6.0x1.0	11
6HVF10K	10000	2.5	12.0	5.0	200	350	7.0x1.0	11
6HVF15K	15000	2.5	18.0	5.0	200	350	4.0x2.0	12
6HVF20K	20000	2.25	24.0	5.0	200	350	6.0x2.0	12
6HVF25K	25000	2.0	30.0	5.0	200	350	8.0x2.0	12
6HVF30K	30000	2.0	36.0	5.0	200	350	4.0x3.0	12
6HVF40K	40000	2.0	48.0	5.0	200	350	8.0x3.0	12
6HVF50K	50000	2.0	60.0	5.0	200	350	6.0x4.0	12

8-32 female inserts standard. Add "T" to end of part number for solder terminals. Available with resistor and capacitor or capacitor only compensation.

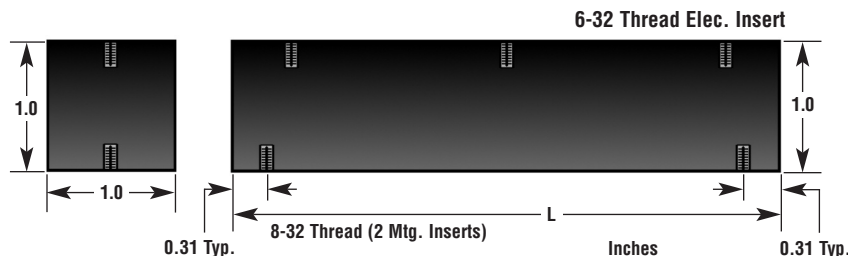
All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.



Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg V	Average Forward Current Max. $I_{FAVM}@55^{\circ}\text{C}$ A	Maximum Forward Voltage Drop $V_F@I_F$ Per Leg V	Maximum Reverse Current $I_R@V_{RRM}@25^{\circ}\text{C}$ μA	Maximum Surge Current I_{FSM} (8.3ms) A	Case Length L Inches
3HV RC Series - Resistor-Capacitor Compensated 3.0 Amp Glass Passivated Rectifier Assembly						Figure 16
3HV3RC	3000	1.75	2.4	500	150	2.38
3HV5RC	5000	1.75	4.8	500	150	2.38
3HV8RC	8000	1.75	7.5	500	150	2.38
3HV10RC	10000	1.75	9.0	500	150	4.50
3HV12RC	12000	1.75	10.8	500	150	4.50
3HV15RC	15000	1.75	14.0	500	150	5.50
3HV20RC	20000	1.75	18.0	500	150	7.00
3HV25RC	25000	1.75	22.0	500	150	8.25
3HV30RC	30000	1.75	28.0	500	150	10.25
3HV40RC	40000	1.75	36.0	500	150	13.25
3HV50RC	50000	1.75	44.0	500	150	16.25
3HV75RC	75000	1.75	69.0	500	150	25.00
6HV RC Series - Resistor-Capacitor Compensated 6.0 Amp Rectifier Assembly						Figure 16
6HV3RC	3000	2.0	3.0	500	400	3.25
6HV5RC	5000	2.0	5.0	500	400	3.25
6HV8RC	8000	2.0	8.0	500	400	3.25
6HV10RC	10000	2.0	10.0	500	400	5.50
6HV12RC	12000	2.0	12.0	500	400	5.50
6HV15RC	15000	2.0	15.0	500	400	7.00
6HV20RC	20000	2.0	20.0	500	400	10.25
6HV25RC	25000	2.0	25.0	500	400	13.25
6HV30RC	30000	2.0	30.0	500	400	16.25
6HV40RC	40000	2.0	40.0	500	400	25.00
6HV50RC	50000	2.0	50.0	500	400	25.00
3HV•RC Series - Resistor-Capacitor Compensated 3.0 Amp Glass Passivated Rectifier Center Tap and Doubler Assembly						Figure 16
3HV•5RC	5000	3.5	4.8	500	150	4.50
3HV•8RC	8000	3.5	7.5	500	150	5.50
3HV•10RC	10000	3.5	9.0	500	150	7.00
3HV•12RC	12000	3.5	10.8	500	150	8.25
3HV•15RC	15000	3.5	14.0	500	150	10.25
3HV•20RC	20000	3.5	18.0	500	150	13.25
3HV•25RC	25000	3.5	23.0	500	150	16.25
6HV•RC Series - Resistor-Capacitor Compensated 6.0 Amp Rectifier Center Tap and Doubler Assembly						Figure 16
6HV•5RC	5000	4.0	5.0	500	400	5.5
6HV•8RC	8000	4.0	8.0	500	400	8.25
6HV•10RC	10000	4.0	10.0	500	400	10.25
6HV•12RC	12000	4.0	12.0	500	400	13.25
6HV•15RC	15000	4.0	15.0	500	400	13.25
6HV•20RC	20000	4.0	20.0	500	400	25.00
6HV•25RC	25000	4.0	25.0	500	400	25.00

FIGURE 16**Resistor-Capacitor Compensated High Voltage Rectifier Block**

Please Note: For Solder Turrets Add Suffix "T" For Mounting Studs Add Suffix "S"

3 HV•RC and 6HV•RC Center Tap and Doubler Assemblies

Where • appears in the part number, substitute the letter N, P or D for the appropriate assembly configuration.
i.e. 3HGD5 is a 5kV, 2.5A doubler

Please Note:

Different circuit arrangements are identified by using a **Circuit Code Letter.**

P=Positive Center Tap

N=Negative Center Cap

D=Doubler

Positive Center Tap (HGP)

Positive Center Tap 2.0A, 10000V/LE 3HVP5RC

Negative Center Tap (HGN)

Negative Center Tap 1.6A, 25000V/LE 3HVN5RC

Doubler (3HGD)

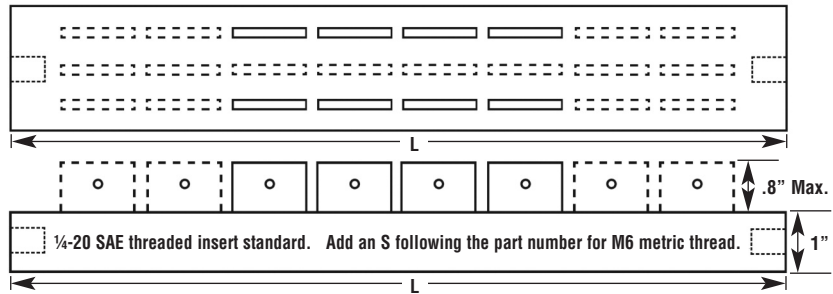
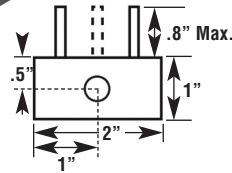
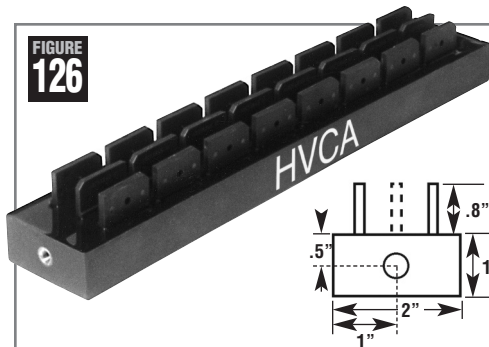
(I_{FAVM} of Doubler is $I_{FAVM} \times 0.5$)
Doubler 2.0A, 15000V/LE 3HVD5RC

Available with capacitor only compensation or no compensation.

All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.



FIGURE 126



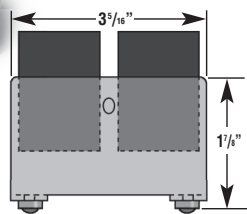
Note: Items with dashed outline may not be present in some part numbers

Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Maximum Forward Current Still Air $@T_A=35^{\circ}\text{C}$ A	Avg. Maximum Forward Current Forced Air $@T_A=55^{\circ}\text{C}$ A	Avg. Maximum Forward Current Forced Air $@T_A=35^{\circ}\text{C}^1$ A	Avg. Maximum Forward Current Forced Air $@T_A=55^{\circ}\text{C}^1$ A	Max. Forward Voltage Drop@25°C $V_F@I_F=12\text{A}$ V	Max. Surge Current $I_{FSM}(8.3\text{ms})$ A	Max. Reverse Current $I_R@V_{RRM}25^{\circ}\text{C}/100^{\circ}\text{C}$ nS	Package Length L Inches	Figure
HVHP Series - High Current Diode Standard Recovery										
HVHP7K	7200	4.2	3.5	12	10	12	600	400/600	6.5	126
HVHP10K	10800	3.2	2.6	12	10	18	600	400/600	6.5	126
HVHP19K	19200	2.6	2.0	10	8.4	32	600	400/600	12.5	126
HVHP29K	29000	2	1.4	9	7.5	48	600	400/600	12.5	126

FIGURE 127

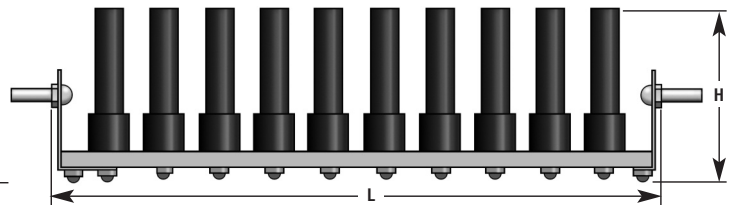


Power Rectifier Assembly
Capacitor Compensated



Complete Replacement For:

Philips Amperex RS3.5, RS5, RS10, OSB-, OSM-, OSS-, 9115, 9215, 9415



Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Avg. Maximum Forward Current 50°C I_{FAVM}^2 A	Avg. Maximum Forward Current 50°C I_{FAVM}^3 A	Max. Forward Voltage Drop@25°C $V_F@I_F=5.0\text{A}$ V	Max. Surge Current $I_{FSM}@10\text{ms}$ A	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}\text{C}$ μA	Package Length L Inches	Figure
HRS5 Series - Power Rectifier Standard Recovery							H = 3.25 Inches	
HRS5-6	9600	5	15	6	400	100	4.8	127
HRS5-9	16000	5	15	10	400	100	7.0	127
HRS5-12	19200	5	15	12	400	100	8.15	127
HRS5-15	25600	5	15	16	400	100	10.4	127
HRS5-18	28800	5	15	18	400	100	11.5	127
HRS5-21	32000	5	15	20	400	100	12.62	127
HRS5-24	38400	5	15	24	400	100	14.85	127
HRS5-27	41600	5	15	26	400	100	16	127
HRS5-30	48000	5	15	30	400	100	18.2	127
HRS10 Series - Power Rectifier Standard Recovery							H = 3.75 Inches	
HRS10-6	9600	10	25	6	950	100	4.8	127
HRS10-9	16000	10	25	10	950	100	7.0	127
HRS10-12	19200	10	25	12	950	100	8.15	127
HRS10-15	25600	10	25	16	950	100	10.4	127
HRS10-18	28800	10	25	18	950	100	11.5	127
HRS10-21	32000	10	25	20	950	100	12.62	127
HRS10-24	38400	10	25	24	950	100	14.85	127
HRS10-27	41600	10	25	26	950	100	16	127
HRS10-30	48000	10	25	30	950	100	18.2	127

For HRS series, add an S after the part number for M6-35 Studs instead of 1/4-28 - 1" studs which are standard. Fast recovery available.

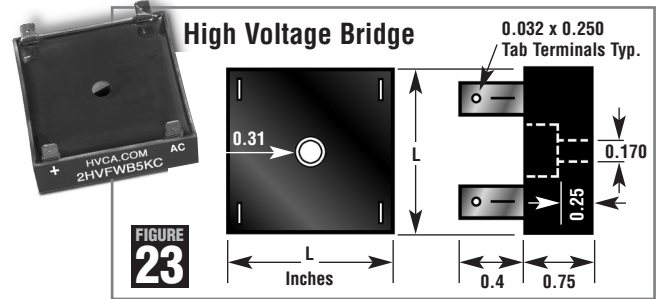
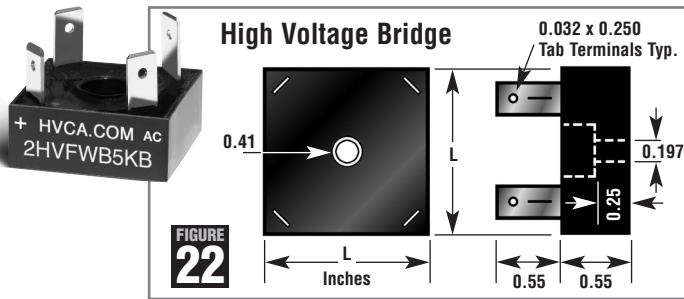
¹ Ratings valid with 700 lfm of air at 35°C to 55°C with the case mounted to a proper heatsink and the air flow directed on the device.

² The current ratings in this column are for devices operated with convective cooling only. Ambient air temperature of 50°C or below.

³ The current ratings in this column are for devices operated with forced air cooling. Air flow must equal or exceed 300 linear feet per minute flow with an ambient air temperature of 50°C or below.

Maximum operating and storage temperature -55°C to 125°C

All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.



Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg V	Avg. Forward Current Max. I_{FAVM} @ $T_C = 55^\circ C$ A	Max. Forward Voltage Drop $V_F @ 0.5 I_{FAVM}$ Per Leg V	Max. Reverse Current I_R @ $V_{RRM} @ 25^\circ C$ μA	Max. Surge Current I_{FSM} (8.3ms) A	Max. Reverse Recovery Time T_{RR} nS	Case Length L Inches	Figure
HVFWB - Standard Recovery 1.0 and 3.0 Amp Glass Passivated Rectifiers								
2HVFWS5KB	5000	2.0	4.8	0.5	50	-	1.25	22
2HVFWS8KB	8000	2.0	7.2	0.5	50	-	1.25	22
2HVFWS5KC	5000	2.0	4.8	0.5	50	-	1.5	23
2HVFWS10KC	10000	2.0	8.4	0.5	50	-	1.5	23
2HVFWS10KD	10000	2.0	8.4	0.5	50	-	2.0	23
2HVFWS15KD	15000	2.0	12.0	0.5	50	-	2.0	23
2HVFWS15KE	15000	2.0	12.0	0.5	50	-	2.5	23
2HVFWS20KE	20000	2.0	18.0	0.5	50	-	2.5	23
5HVFWS5KC	5000	5.0	5.2	0.5	150	-	1.5	23
5HVFWS7.5KD	7500	5.0	6.5	0.5	150	-	2.0	23
5HVFWS5KE	5000	5.0	5.2	0.5	150	-	2.5	23
5HVFWS10KE	10000	5.0	10.4	0.5	150	-	2.5	23
5HVFWS15KE	15000	5.0	13.0	0.5	150	-	2.5	23
HVFWB F - Fast Recovery 1.0 and 3.0 Amp Glass Passivated Rectifiers								
1HVFWS5KBF	5000	1.0	7.2	0.3	20	250	1.25	22
1HVFWS10KBF	10000	1.0	14.4	0.3	20	250	1.25	22
1HVFWS5KCF	5000	1.0	7.2	0.3	20	250	1.5	23
1HVFWS10KCF	10000	1.0	14.4	0.3	20	250	1.5	23
2HVFWS5KDF	5000	2.0	6.5	1.0	50	150	2.0	23
2HVFWS10KDF	10000	2.0	13.0	1.0	50	150	2.0	23
2HVFWS10KEF	10000	2.0	13.0	1.0	50	150	2.5	23
2HVFWS15KEF	15000	2.0	20.0	1.0	50	150	2.5	23
4HVFWS5KCF	5000	4.0	7.0	0.5	100	250	1.5	23
4HVFWS5KDF	5000	4.0	7.0	0.5	100	250	2.0	23
5HVFWS5KEF	5000	5.0	7.5	0.5	100	250	2.5	23
4HVFWS10KEF	10000	4.0	14.0	0.5	100	250	2.5	23
HVFWB UF - Ultra Fast Recovery T_{RR} 75 nS 1.0 and 3.0 Amp Rectifiers								
2HVFWS5KBUF	5000	2.0	8.0	1.0	35	75	1.25	22
2HVFWS8KBUF	8000	2.0	13.0	1.0	35	75	1.25	22
2HVFWS5KCUF	5000	2.0	8.0	1.0	35	75	1.5	23
2HVFWS10KCUF	10000	2.0	16.0	1.0	35	75	1.5	23
2HVFWS10KDUF	10000	2.0	16.0	1.0	35	75	2.0	23
2HVFWS15KDUF	15000	2.0	24.0	1.0	35	75	2.0	23
2HVFWS15KEUF	15000	2.0	24.0	1.0	35	75	2.5	23
2HVFWS20KEUF	20000	2.0	32.0	1.0	35	75	2.5	23
4HVFWS5KCUF	5000	4.0	7.0	5.0	150	75	1.5	23
4HVFWS5KDUF	5000	4.25	7.0	5.0	150	75	2.0	23
4HVFWS8KDUF	8000	4.0	11.2	5.0	150	75	2.0	23
4HVFWS10KEUF	10000	4.25	14.0	5.0	150	75	2.5	23
4HVFWS15KEUF	15000	4.0	21.0	5.0	150	75	2.5	23
HVFWB USF - Ultra Super Fast Recovery T_{RR} 35 nS 1.0 Amp Rectifiers								
1HVFWS5KBUSF	5000	1.0	7.0	1.0	10	35	1.25	22
1HVFWS5KCUF	5000	1.0	7.0	1.0	10	35	1.5	23
1HVFWS8KCUF	8000	1.0	11.2	1.0	10	35	1.5	23
1HVFWS10KDUF	10000	1.0	14.0	1.0	10	35	2.0	23
1HVFWS15KDUF	15000	0.9	21.0	1.0	10	35	2.0	23
1HVFWS15KEUSF	15000	1.0	21.0	1.0	10	35	2.5	23
1HVFWS20KEUSF	20000	0.9	28.0	1.0	10	35	2.5	23
HVFWB USF - Ultra Super Fast Recovery T_{RR} 40 nS 2.0 Amp Rectifiers								
3HVFWS5KCUF	5000	3.0	10.0	5.0	60	40	1.5	23
3HVFWS5KDUF	5000	3.0	10.0	5.0	60	40	2.0	23
3HVFWS10KDUF	10000	2.75	20.0	5.0	60	40	2.0	23
3HVFWS10KEUSF	10000	3.0	20.0	5.0	60	40	2.5	23
3HVFWS15KEUSF	15000	2.75	30.0	5.0	60	40	2.5	23

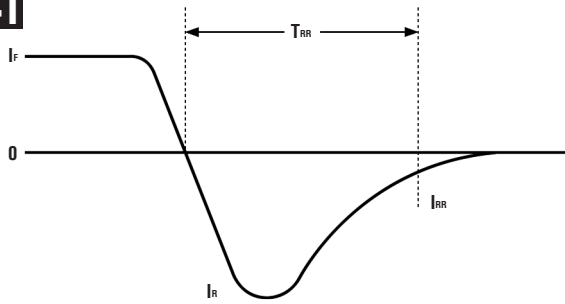
Note: All current ratings require assembly on suitably engineered heat sink, using a quality heat coupling compound. For Solder Turrets Add Suffix "T" For Wire Leads Add Suffix "W". All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.



These curves apply to most diodes in this catalog.
For further information, please contact the factory.

FIGURE 141

Reverse Recovery Measurement Waveform



Typical data capture points: $I_F = 0.5I_R$, $I_R, I_{RR} = 0.25I_R$
 I_R is typically the rated average forward current maximum (I_{FAVM}) of the D.U.T.

FIGURE 142

Typical T_{RR} Setup for Higher Current Diodes

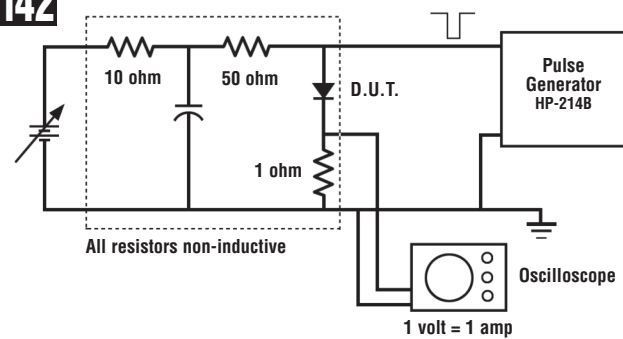
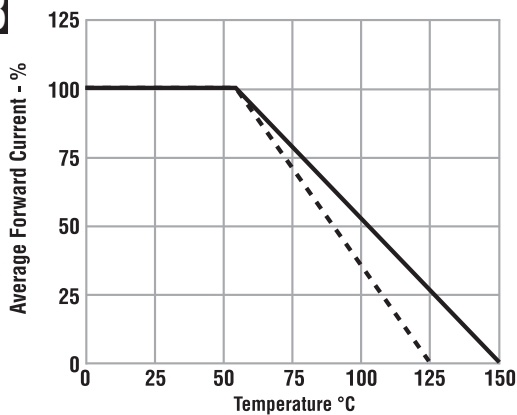


FIGURE 143

Forward Current Derating Curve



This applies to most diodes in our catalog that show average current rating at 55°C unless otherwise specified.

Max operating temperature is 150°C unless otherwise specified.

On Forward Pulse Current Durations Much Shorter Than 8.3ms

A general guideline relationship for expressing the forward pulse current withstand of a rectifier for a given pulse duration is the following:

$$(I_{\text{pulse}})^2 * (t_{\text{pulse}}) = (I_{\text{FSM}})^2 * (t_{\text{surge}}) \quad T_{\text{ambient}} = 25^\circ\text{C}$$

Where I_{FSM} is the rated forward surge current of the rectifier at 25°C and t_{surge} is 8.3msec.

Note that the above relationship is only to be used as a guideline. The ability of a rectifier to handle short term pulse currents is governed by several factors, so hands-on analysis by the circuit designer is essential to verify acceptable pulse withstand performance.

Package Applicability at Specified Max Voltage Rating V_{RRM}

It should be noted that the data provided in the component tables of this catalog are electrical data related to the internal function of the device. The voltage rating in the table may exceed the electrical rating of the package in some environments. It is the responsibility of the user to assure that proper engineering consideration is given to the applicability of the package (creepage distance) at the voltage rating and in the environment of intended use. Please contact us if you have questions or concerns about applicability.

FIGURE 145

Typical T_{RR} Setup for Lower Current Diodes

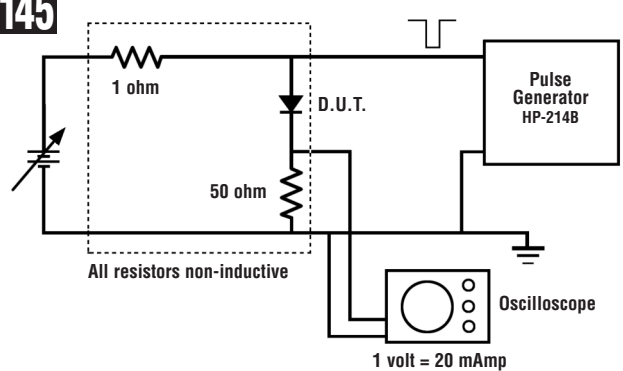
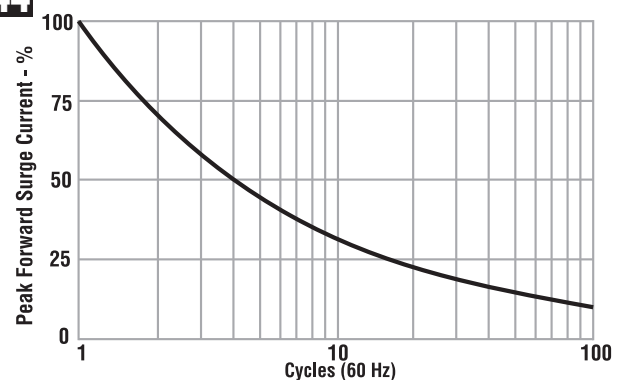


FIGURE 144

Repetitive Surge Current Derating Curve



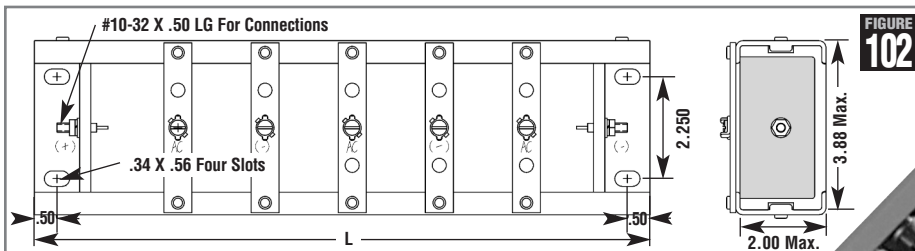
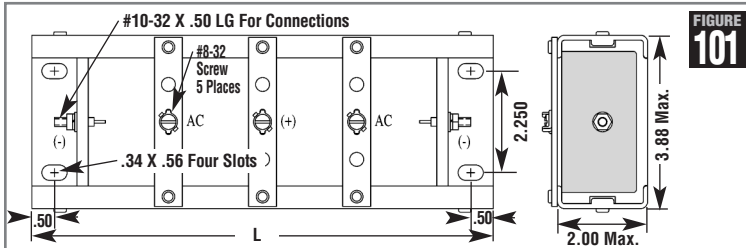
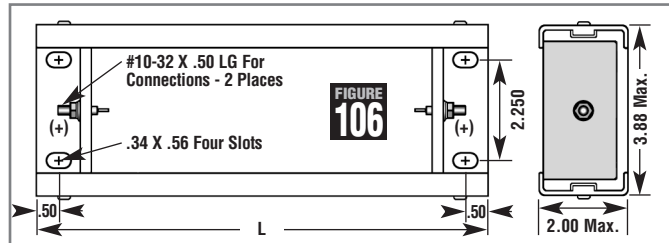
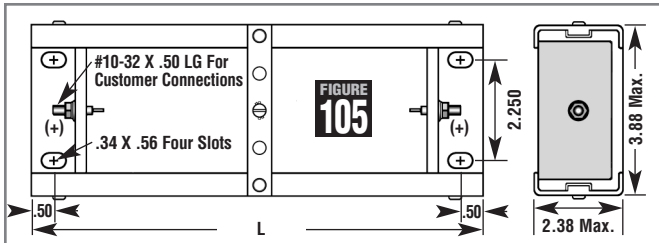
This curve represents the percentage of published maximum surge rating as a function of surge repetition.

Cleanliness and high voltage

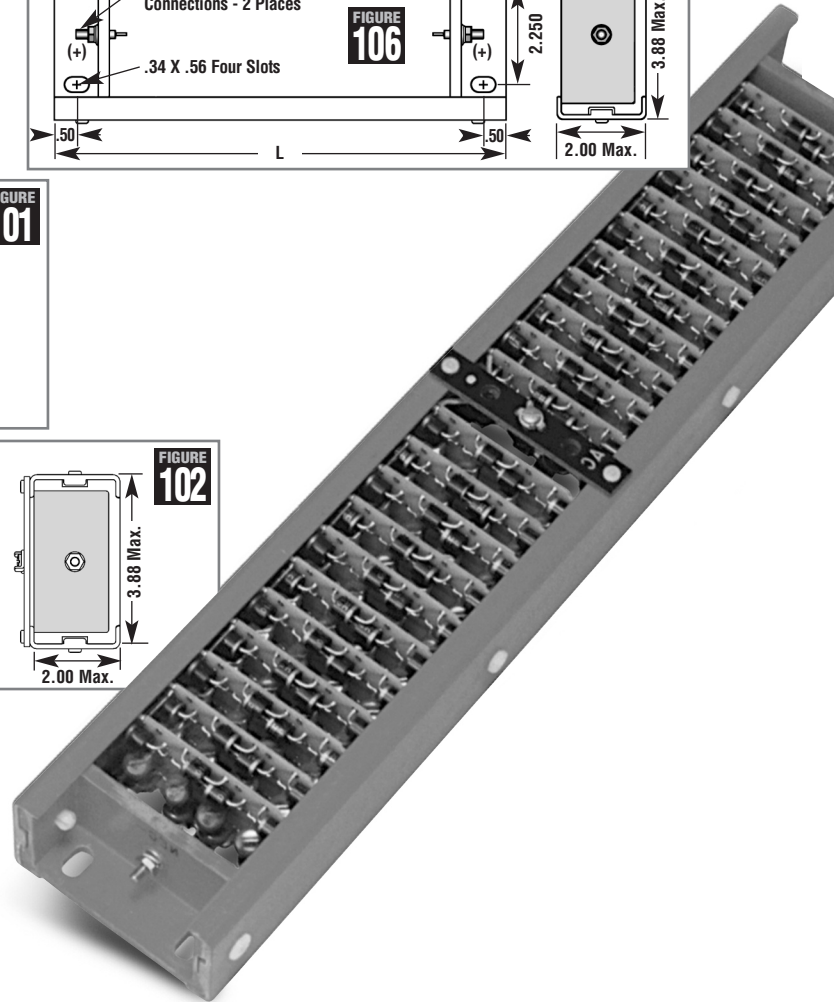
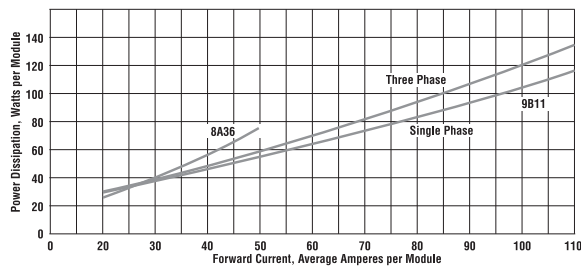
In applications where high voltage devices will be encapsulated, it is highly recommended that high voltage components or assemblies be washed in a clean, high pressure washer and then baked at 110°C for 2 hours. The cleaned, dried devices or assemblies should then be placed in heat sealed bags to prevent the accumulation of dirt or moisture prior to encapsulation.

Humidity and high voltage

Moisture can wreak havoc in high voltage systems. Therefore, it is highly recommended that devices that have been open to the environment be baked at 110°C for 2 hours prior to any application of high voltage.



Electrical Characteristics Average Power Dissipation per Module



Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg ¹ kV	Max Applied Voltage V_{MA} kV	Avg. Forward Current Maximum@ 40°C Air A	70°C Oil A	Max. Forward Voltage Drop $V_F @ I_F$ Per Leg V	Max. Forward Current $I_R @ V_{MA}$ μA	Max. Reverse Current I_{FSM} A	Max. Surge Overall Length (L) Inches	Figure
S Series - High Voltage Channel Stack Rectifiers									
SD17A12Z0817S	8	4	12	11	8.8	100	370	16.25	105
SD15A09Z0817S	32	16	2.4	4	36	100	370	16.25	105
SD16A14Z0625S	24	12	4	7	24	100	1050	22.25	105
SH13A03Z0508S	56	28	1	1.5	88	100	150	9.5	106
SH13A03Z1320S	145	72.5	1	1.5	208	100	150	18.5	106
SH16A14Z0612S	24	12	4	7	24	100	1050	12.5	106
SH15A09Z2020S	80	80	2.4	4	88	100	370	18.5	106
SH18A36Z3434S	34	17	15	26	38	100	1050	29	106
SH19B11Z1633S	16	8	33	70	24	100	3000	28.25	106
SB53A03Z0111S	11	5.5	1	1.5	16	100	150	11.75	101
SB56A14Z0111S	4	2	4	7	4.4	100	1050	11.75	101
SE53A03Z0223S	22	11	1	1.5	32	100	150	20.75	102
SE55A09Z0111S	4	2	2.4	4	4.4	100	370	11.75	102
SE58A36Z0323S	3	1.5	15	26	3.3	100	1050	20.75	102

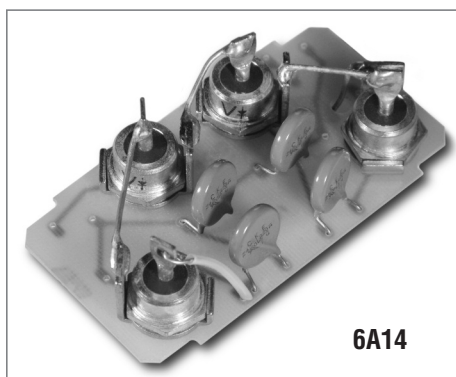
¹The true V_{RRM} of an MOV compensated unit is 2 times the max applied voltage. In this case the Max Applied Voltage of the assembly is limited by the Max Operating Voltage of the MOV used. Max Applied Voltage is the max safe peak voltage that can be repeatedly applied to the rectifier.

Maximum operating and storage temperature -40°C to 125°C

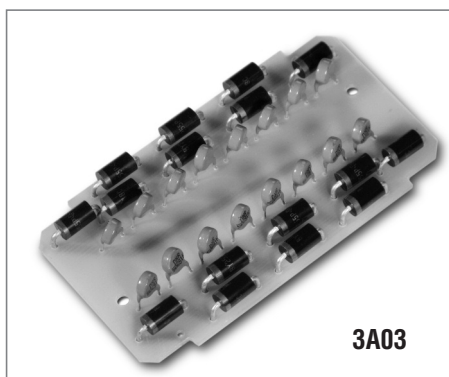
Each diode is rated @ 1000 Volts Peak and MOV compensated which gives an avalanche rating of 90 Joules maximum (8 x 20 μS) and a nominal voltage of 680 volts.

For R-C compensation, drop the S suffix.

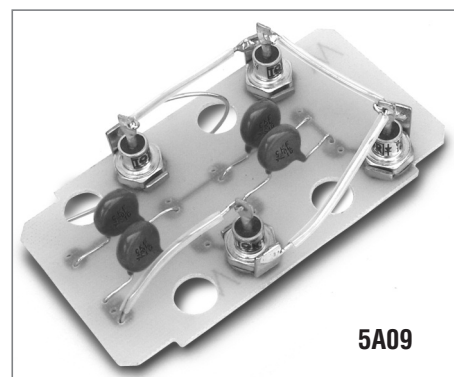
Product is available in RoHS compliant form. Unless RoHS compliance is requested, existing stocks of non-compliant materials are being shipped.



6A14



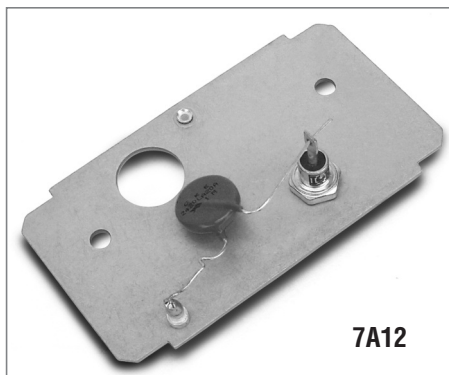
3A03



5A09



8A36



7A12



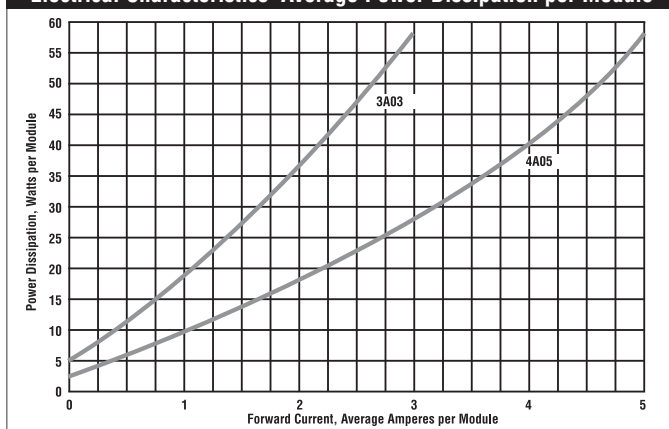
4A05

Product Description Number

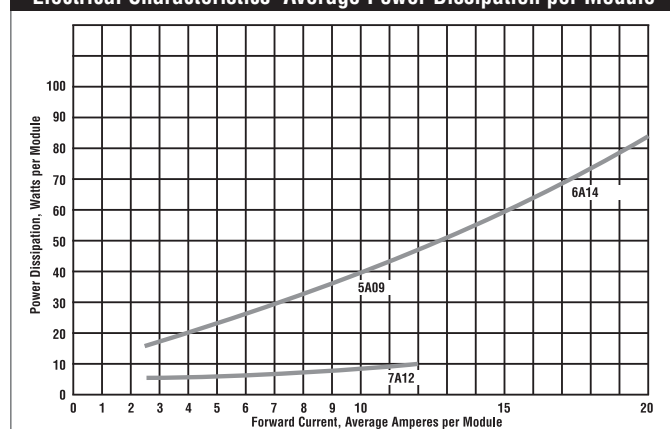
Circuit	Termination	Module (see above)	Modules (per Leg)	Channel No.
S *	1	7 A 1 2 Z	1 5	3 1
SH = Half Wave SD = Doubler SB = 1 ϕ Bridge SE = 3 ϕ Bridge	Please consult factory for other ends			To determine channel length in inches $L = (3.5 + \text{channelnumber} \times .75$ inches)

Module Type	Volts/ Board	Avg. Forward Current Max. $I_{FAVM} @ T_c 40^\circ C$ A (Amps)	Max. Surge Current $I_{FSM} (8.3ms)$ A (Amps)
6A14	4kv	4.0	1050
3A03	16kv	1.2	150
5A09	4kv	2.4	370
8A36	1kv	15	1050
7A12	1kv	12	370
4A05	8kv	3.0	150

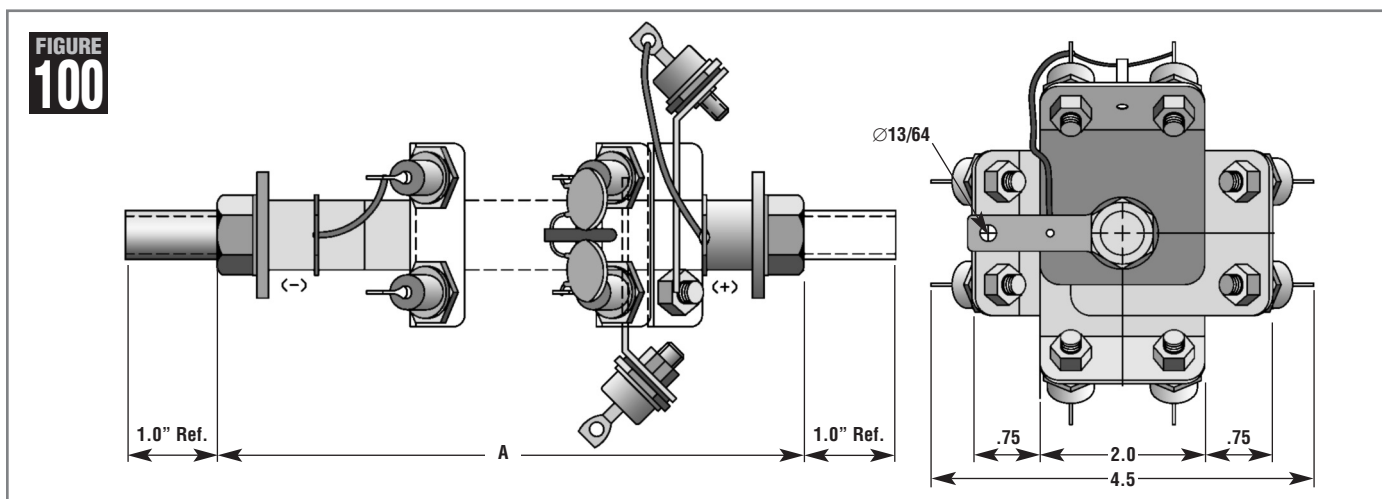
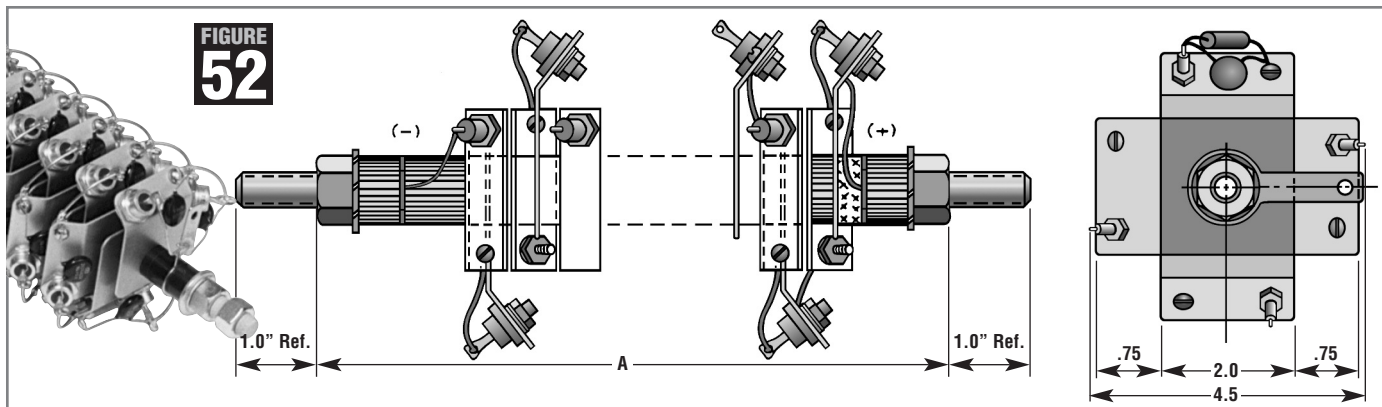
Electrical Characteristics Average Power Dissipation per Module



Electrical Characteristics Average Power Dissipation per Module



Product is available in RoHS compliant form. Unless RoHS compliance is requested, existing stocks of non-compliant materials are being shipped.



Part Number	Repetitive Peak Reverse Voltage V_{RRM} kV	Max. Applied Voltage ¹ kV	Maximum Forward Current@50°C I_{FAVM}^2 A	Maximum Forward Current@50°C I_{FAVM}^3 A	Forward Voltage@25°C V_F^4 V	Max. Surge Current I_{FSM} A	Max Reverse Current I_R @M.O.V. T_J @25°C μA	Dim A Inches	Figure
CJ Series - Spiral Rectifier Stack									
CJ2V04H•S	8kV - 56kV	4kV - 28kV	3.25	6.25	16 - 48	370	<100	4 - 10.75	100
CJ2V06H•S	8kV - 56kV	4kV - 28kV	6	12	16 - 48	1500	<100	4 - 10.75	100
CJV04H•S	8kV - 56kV	4kV - 28kV	6.5	12.5	16 - 48	370	<100	5.125 - 17.5	52
CJV05H•S	8kV - 56kV	4kV - 28kV	10	22	16 - 48	800	<100	5.125 - 17.5	52
CJV06H•S	8kV - 56kV	4kV - 28kV	12	24	16 - 48	1500	<100	5.125 - 17.5	52

See datasheet for more item specific detail

- Peak inverse voltage ratings of 16kV to 48kV available. Replace the dot with the required voltage. i.e. CJV04H16S for 16kV MOV compensated or CJ206H44 for 44kV RC compensated.

¹ The true V_{RRM} of an MOV compensated unit is 2 times the max operating voltage. In this case the Max Applied Voltage of the assembly is limited by the Max Operating Voltage of the MOV used. Max Applied Voltage is the max safe peak voltage that can be repeatedly applied to the rectifier.

² Average current based on ambient air temperature of 50°C or below with convective cooling and free air movement around assembly.

³ Average current based on ambient air temperature of 50°C or below with at least 300 I_{FPM} airflow around the assembly.

⁴ Forward voltage V_F is approximately equal to the repetitive peak reverse voltage rating/1000. It is directly related to the number diodes in the string, each having a V_F of approximately 1.0 volts at rated current.

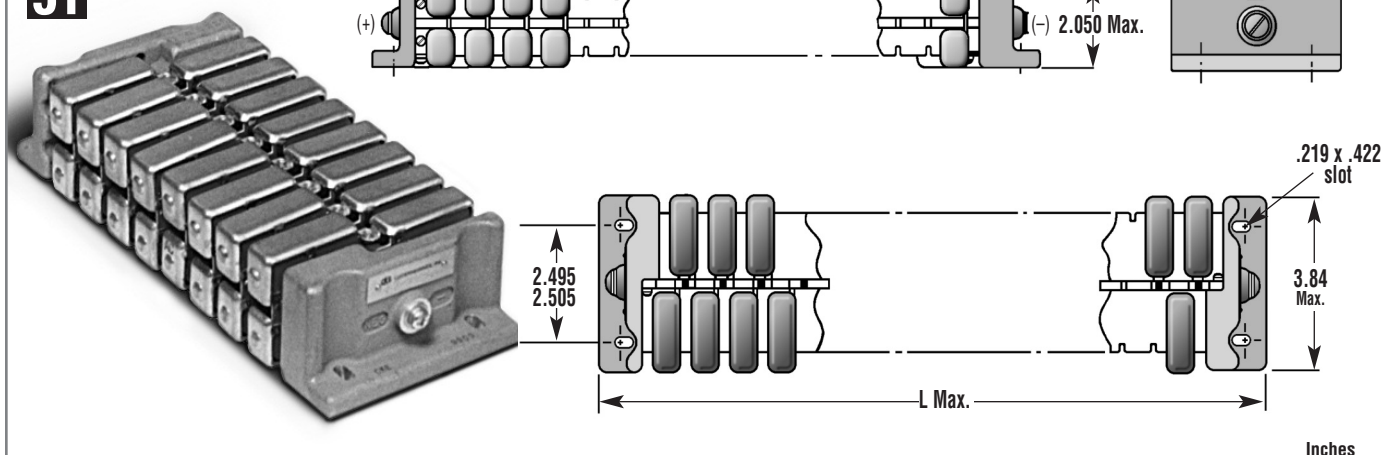
Each diode in the string is rated @ 1000V Peak and MOV compensated which gives an avalanche rating of 90 Joules maximum (8 x 20 μS) and a V_{NOM} of 680 volts. For R-C compensation, drop the S suffix.

Maximum operating and storage temperature -40°C to 125°C

Higher voltages, higher currents and fast recovery assemblies are available. Doublers and special configurations including special lengths are available. Contact the factory. UNLESS THE 'S' SUFFIX IS OMITTED THESE ASSEMBLIES WILL BE MOV COMPENSATED

All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.

FIGURE 51

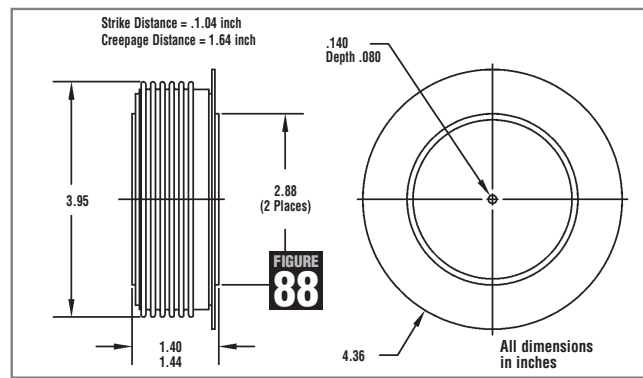
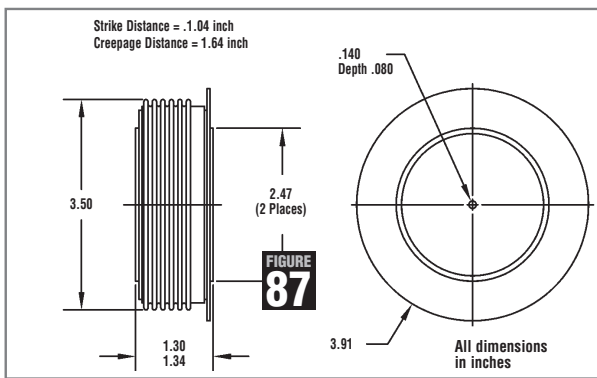
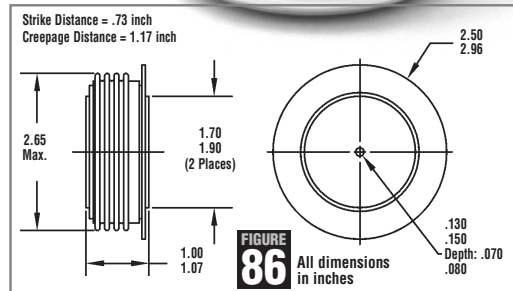
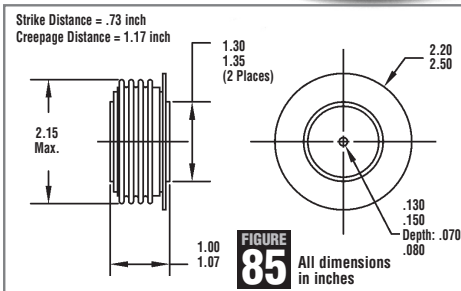
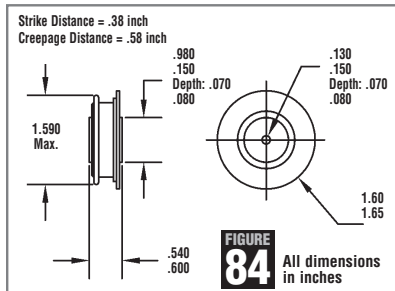


Part Number	Rep. PIV V _{RRM} kV	Avg. Forward Current@		Max. Forward Voltage Drop V _F @I _F Per Leg V	Max. Reverse Current I _R @V _{RRM} @25°C mA	Max. Surge Current I _{FSM} A	Overall Length Inches L Max
		40°C	70°C Oil				
		A	A				
1HV12 Series - High Voltage Medium Current Column Rectifier							Figure 51
1HV12R10A	24	3.0	12.0	20	1.5	370	5.54
1HV12R20A	48	3.0	12.0	40	1.5	370	8.67
1HV12R30A	72	3.0	12.0	60	1.5	370	11.8
1HV12R40A	96	3.0	12.0	80	1.5	370	14.93
1HV12R50A	120	3.0	12.0	100	1.5	370	18.06
1HV12R60A	144	3.0	12.0	120	1.5	370	21.19
1HV12R70A	168	3.0	12.0	140	1.5	370	24.32
1HV12R80A	192	3.0	12.0	160	1.5	370	27.45
1HV12R90A	216	3.0	12.0	180	1.5	370	30.58
1HV12R100A	240	3.0	12.0	200	1.5	370	33.71
2HV12 Series - High Voltage Medium Current Rectifier							Figure 51
2HV12R10A	24	4.0	12.5	20	1.5	370	6.73
2HV12R20A	48	4.0	12.5	40	1.5	370	10.8
2HV12R30A	72	4.0	12.5	60	1.5	370	14.87
2HV12R40A	96	4.0	12.5	80	1.5	370	18.94
2HV12R50A	120	4.0	12.5	100	1.5	370	23.01
2HV12R60A	144	4.0	12.5	120	1.5	370	27.08
2HV12R70A	168	4.0	12.5	140	1.5	370	31.15
3HV•P Series - High Voltage High Current Column Rectifier							Figure 51
3HV12P10A	24	7.0	33.0	20	4	1050	10.22
3HV12P20A	48	7.0	33.0	40	4	1050	18.03
3HV12P30A	72	7.0	33.0	60	4	1050	25.84
3HV12P40A	96	7.0	33.0	80	4	1050	33.65
3HV16P10A	32	7.0	33.0	20	5.3	1050	10.22
3HV16P20A	64	7.0	33.0	40	5.3	1050	18.03
3HV16P30A	96	7.0	33.0	60	5.3	1050	25.84
3HV16P40A	128	7.0	33.0	80	5.3	1050	33.65
3HV•M Series - High Voltage High Current Column Rectifier							Figure 51
3HV12M10A	24	8.0	36.0	20	4	1500	10.22
3HV12M20A	48	8.0	36.0	40	4	1500	18.03
3HV12M30A	72	8.0	36.0	60	4	1500	25.84
3HV12M40A	96	8.0	36.0	80	4	1500	33.65
3HV16M10A	32	8.0	36.0	20	5.3	1500	10.22
3HV16M20A	64	8.0	36.0	40	5.3	1500	18.03
3HV16M30A	96	8.0	36.0	60	5.3	1500	25.64
3HV16M40A	128	8.0	36.0	80	5.3	1500	33.65

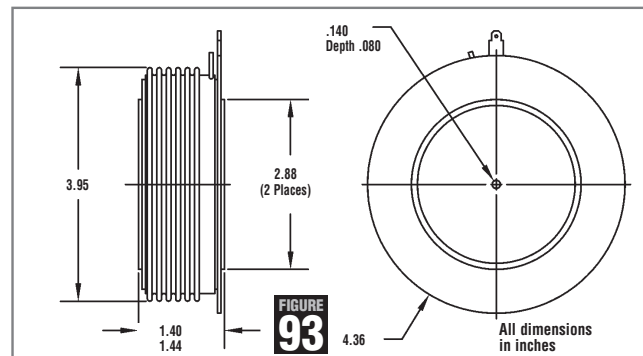
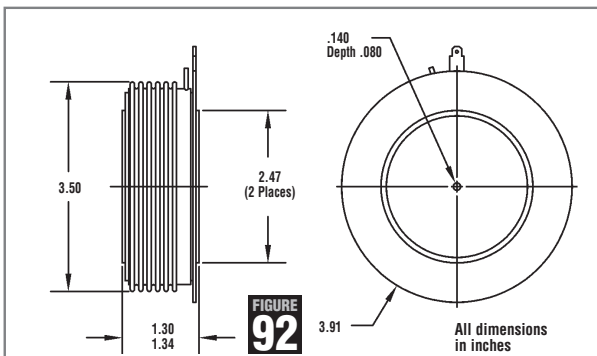
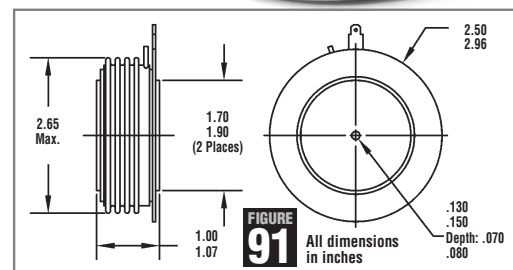
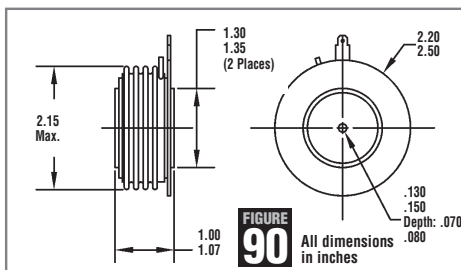
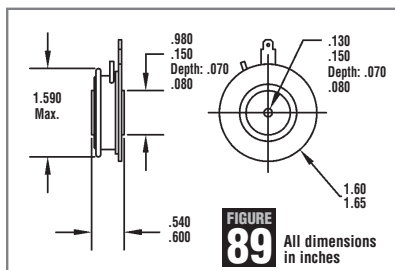
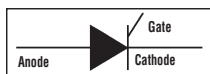
Many circuit arrangements are available. Doublers, quadruplers, single and three phase bridges, standard or fast recovery devices available on request. Standard assemblies are RC compensated but MOV compensation is available on request. Custom configurations are available. Contact your sales representative. Custom parts available, please consult factory.

Product is available in RoHS compliant form. Unless RoHS compliance is requested, existing stocks of non-compliant materials are being shipped. Fast recovery devices and special configuration assemblies available by special request.

Diode Capsules



SCR Capsules





Part Number	V _{RRM} volts	I _F (avg) A	T _{CASE} °C	t _{RR} μ sec	I _{FSM} A	I _{2t} KA ² s	I _{RRM} (ma)@ T _J max	V _{FM} volts	I _{FM} A	T _J MAX °C	R _{θJ-C} Double sided cooled (°C/W)	Mtg. Force Lb	Fig
Diode Capsules													
D30P400S	500-1500	400	115	-	7000	170	40	1.400	1200	185	0.055	1000	84
D30P1200S	500-1500	1200	115	-	11100	510	40	1.650	3800	185	0.055	1000	84
D38P750S	1500-3000	750	90	-	10000	417	50	1.700	2400	175	0.040	4000	85
D38P1000S	1000-2000	1000	90	-	12000	600	50	1.750	3200	185	0.040	4000	85
D38P1000S1	1500-2600	1000	90	-	12000	600	50	1.750	3200	200	0.040	4000	85
D38P1000S3	3500-4500	1000	85	-	11000	500	50	1.400	1000	170	0.040	4000	85
D38P1200S	2800-3500	1200	85	-	13000	700	50	1.200	1000	170	0.040	4000	85
D38P1500S	1500-2600	1500	90	-	16000	1060	50	1.650	4700	185	0.040	4000	85
D52P1800S	2500-3000	1800	100	-	25000	2600	50	1.800	5000	175	0.023	5000	86
D52P2400S	1400-2000	2400	100	-	32000	4300	50	1.700	7600	185	0.023	5000	86
D77P2900S	3800-4500	2900	100	-	40000	6600	100	1.150	2000	170	0.012	8000	88
D77P3900S	2700-3200	3900	100	-	60000	14900	100	1.050	2000	175	0.012	8000	88
D77P4400S	1800-2600	4400	100	-	60000	14900	100	0.865	2000	185	0.012	8000	88
Fast Recovery													
D30P650F	500-1500	650	65	*	10000	410	40	1.90	2000	125	0.055	1000	84
D38P600F	600-1500	600	65	3.50	10000	415	50	1.80	2000	125	0.043	4000	85
D38P1000F	1500-2000	1000	78	*	14000	815	50	3.00	3200	125	0.043	4000	85
D52P925F	1500-2400	925	70	*	18000	1300	75	2.65	2900	150	0.023	5000	86

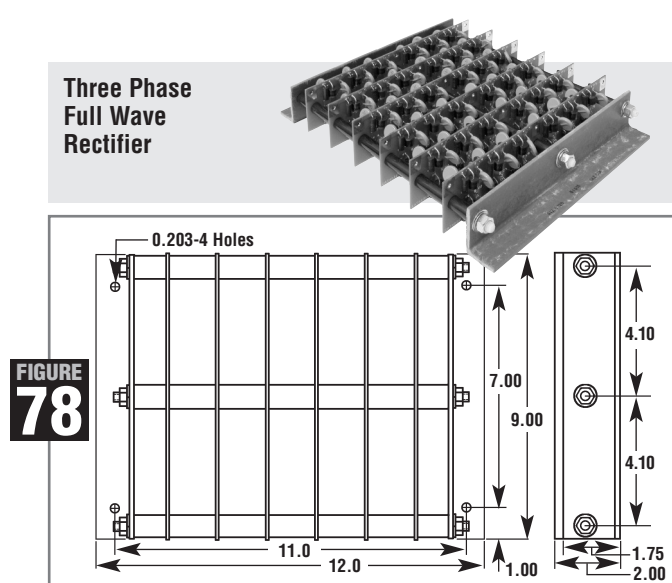
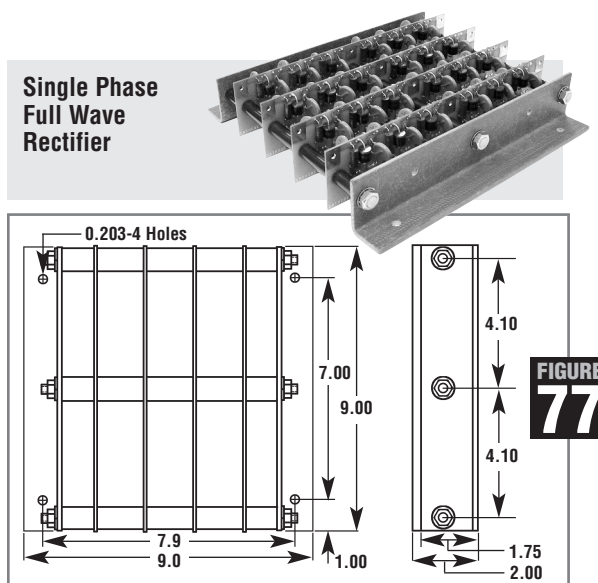
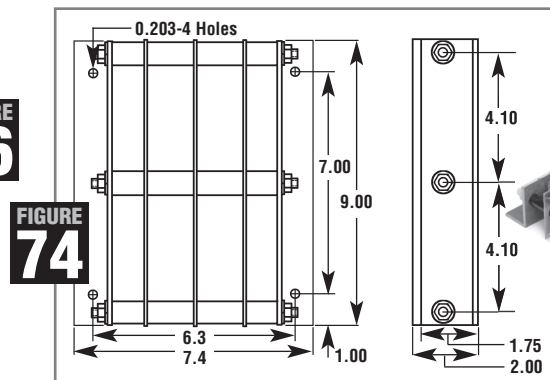
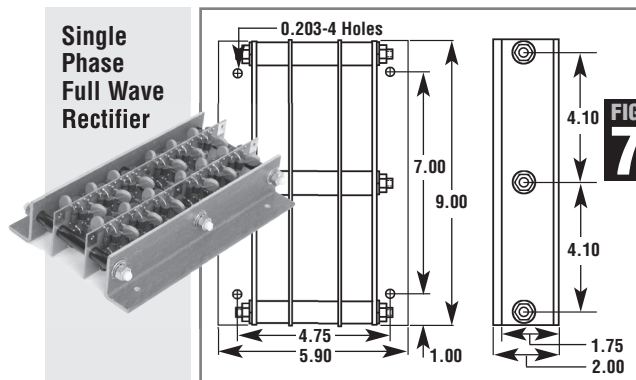
Part Number	V _{RRM} V	I _F (avg) A	T _C °C	I _{TSM} A	I _{2t} KA ² S	I _{RRM} (mA) @ T _J max	V _{FM} V	I _{FM} A	T _J MAX °C	di/dt A/μS	dV/dt V/μS	I _{GT} /V _{GT} mA/volt @25°C	t ₀ μS	Q _{RR} μC	I _H mA	Mtg. Force lb	R _{θJ-C} Double side cooled(°C/W)	Fig.
T Series - Phase Control SCR Capsules - See note 1																		
T30P600S	1000-2000	600	65	7500	235	30	2.30	2000	125	400	200	150/3	200	*	400	1000	0.0550	89
T30P700S	500-1400	700	65	8000	265	30	2.20	2000	125	400	200	150/3	200	*	400	1000	0.0550	89
T38P400S	3500-4500	400	70	5500	130	75	2.10	500	125	200	1000	150/3	400	*	400	3000	0.0400	90
T38P750S	1000-2000	750	67	11000	500	35	1.80	2200	125	400	200	150/3	200	*	400	3000	0.0400	90
T38P900S	500-1600	900	67	13000	700	35	1.60	2800	125	400	200	150/3	200	*	400	3000	0.0400	90
T52P800S	4000-4500	800	70	9000	330	75	2.00	1000	125	150	1000	150/3	500	*	400	5500	0.0250	91
T52P950S	3500-4000	950	70	16000	1000	75	1.60	1000	125	150	1000	150/3	500	*	400	5500	0.0250	91
T52P1000S	2200-3200	1000	74	15000	937	75	2.26	3000	125	300	300	150/3	250	*	400	5500	0.0250	91
T52P1300S	500-2000	1300	65	20000	1700	65	1.75	3000	125	400	400	150/3	250	*	400	5500	0.0250	91
T52P1500S	500-2000	1500	65	23000	2200	65	1.65	3000	125	400	400	150/3	250	*	400	5500	0.0250	91
T52P1640S	500-1400	1640	65	28500	3400	65	1.40	3000	125	400	400	150/3	250	*	400	5500	0.0250	91
T65P1200S	3600-4400	1200	65	20000	1900	150	2.00	2000	125	250	500	200/4	250	*	500	8000	0.0170	92
T65P1500S	1600-3000	1500	65	22500	2300	90	1.90	2000	125	250	500	200/4	250	*	500	10000	0.0170	92
T65P2000S	600-2000	2000	65	29400	3000	90	1.70	2000	125	300	500	200/4	250	*	500	10000	0.0170	92
T77P1650S	3600-4400	1650	70	26000	2800	250	2.55	5000	125	300	1000	200/4	400	*	250	10000	0.0120	93
T77P2100S	1200-1800	2100	70	38000	5500	100	1.55	2000	125	800	500	200/4	80	*	500	10000	0.0120	93
T77P2300S	2200-2700	2300	70	35000	5000	150	1.35	2000	125	300	500	200/4	400	*	100	10000	0.0120	93
T77P2500S	1200-2400	2500	65	45000	8500	150	1.90	7850	125	300	500	200/4	400	*	100	10000	0.0120	93
T77P3000S	800-1400	3000	65	45000	8500	150	1.15	2000	125	300	500	200/4	400	*	100	10000	0.0120	93
T77P3000S1	1200-2100	3000	70	55000	12500	150	1.10	2000	125	300	1000	200/4	400	*	100	10000	0.0120	93
T Series - Inverter Grade Fast Switching SCRs - See note 2																		
T30P600F	500-1400	600	65	6000	150	40	2.50	1200	125	800	400	150/3	20	*	500	1000	0.0550	89
T38P900F	1500-2000	900	65	7800	250	50	2.50	2000	125	800	500	200/3	30	*	500	3000	0.0400	90
T38P1000F	500-1400	1000	65	10000	415	35	2.90	2000	125	800	500	200/3	25-40	*	500	3500	0.0400	90
T38P1150F	1500-2000	1150	65	9000	336	50	2.50	2300	125	800	500	200/3	55	*	500	3000	0.0400	90
T52P1700F	1500-2000	1700	65	20000	1660	65	2.20	3400	125	800	500	150/3	50	2000	500	5500	0.0230	91
T52P2000F	500-1400	2000	65	16000	1060	65	2.60	4000	125	800	500	150/3	35	400	500	5500	0.0230	91
T65P2500F	600-1600	2500	65	24500	2500	90	1.90	3000	125	800	500	200/4	65	*	500	10000	0.0170	92
T65P2500F2	2200-2500	2500	65	40000	6800	100	2.25	4000	125	800	500	200/4	80	*	500	10000	0.0120	92
T77P3000F	2000-2800	3000	65	48000	8200	100	2.45	5000	125	800	500	200/4	75	*	500	16000	0.0085	93

¹ Currents listed are Average values.

² Currents listed are RMS values.

* For specific Q_{RR} values, contact the factory.

All devices listed are RoHS compliant.



Part Number	Repetitive Peak Reverse Voltage V_{RRM} V	Max. Bridge Output Voltage V_{BO}^1 V	Max. Average Output Current $I_{FAVM}@25^{\circ}C$ A	Max. Forward Voltage Drop (leg) $V_F@55^{\circ}C$ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C$ μA	Max. Surge Current (leg) I_{FSM}^1 A	Max. Reverse Recovery Time T_{RR}^3 nS	Figure
51000 Series - Single Phase Fullwave Bridge Rectifier Assembly - Convective Air Cooling								
51012	12000	6000	6	6	6.5	400	-	76
51014	24000	12000	6	12	6.5	400	-	77
51000 Series - Three Phase Fullwave Bridge Rectifier Assembly - Convective Air Cooling								
51013	12000	6000	9	6	6.5	400	-	74
51016	24000	12000	9	9	6.5	400	-	78
52000 Series - Single & Three Phase Rectifier Assembly - Oil Dielectric Use Only⁴								
52014	48000 ⁴	24000	4	9	5.0	400	-	77
52016	48000 ⁴	24000	6	9	5.0	400	-	78

¹ The true V_{RRM} of diodes used in an MOV compensated assembly is twice the Max Operating Voltage. Max Applied Voltage is limited, not by V_{RRM} but by the maximum voltage rating of the MOV. Each individual diode is rated at 1000V peak and MOV compensated to give an avalanche rating of 90 Joules max (8 x 20uS) and a V_{NOM} of 680V.

² Average current is based on ambient air temp of 50°C or below with convective cooling and free air movement around assy.

³ Average current based on ambient air temp of 50°C and below with at least 300 lfm airflow around assy.

⁴ The voltage and current rating for the 52000 series parts can be achieved only by complete emersion in dielectric oil such as Shell Diala or equivalent. Contact factory when other dielectric use is intended.

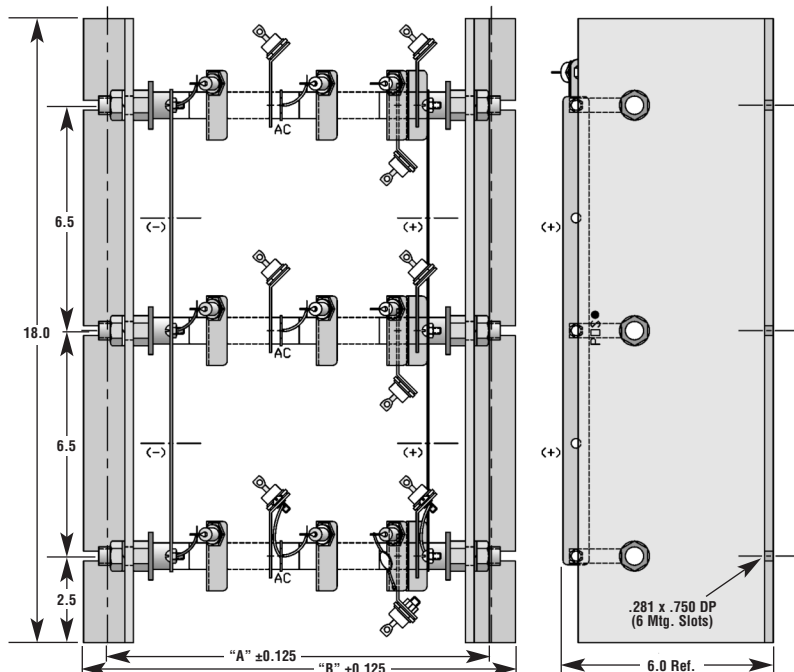
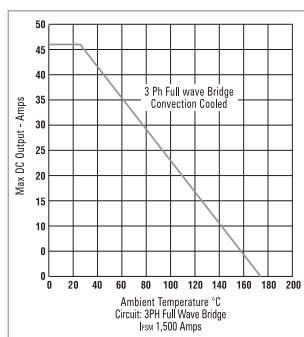
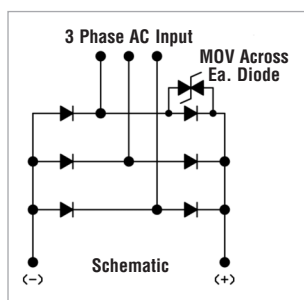
Max storage and operating temperature is -40°C to 125°C. Higher voltage, currents and fast recovery assemblies are available.

Doublers and special configurations, including special lengths, are available on special request. Contact the factory.

Much higher current ratings for 51000 series assemblies are possible when immersed in Shell Diala dielectric or equivalent. Contact Factory.

Product is available in RoHS compliant form. Unless RoHS compliance is requested, existing stocks of non-compliant materials are being shipped.

FIGURE 128



Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg ⁴ V	Max. Applied Voltage ⁴ V	Avg. Forward Current Max. $I_{FAVM}@40^{\circ}C$ A	Max. Forward Voltage Drop $V_F@I_F$ Per Leg ¹ V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C^5$ μA	Max. Surge Current I_{FSM}^3 A	Max. Reverse Recovery Time T_{RR} nS	Package Dimension A (Inches)	Package Dimension B (Inches)
3PH Series - High Current Full Wave Bridge									
3PHFWB40A4KV	4000	2000	40	4	<100	1500	-	8.161	9.38
3PHFWB40A8KV	8000	4000	40	8	<100	1500	-	10.411	11.63
3PHFWB40A12KV	12000	6000	40	12	<100	1500	-	12.661	13.88
3PHFWB40A16KV	16000	8000	40	16	<100	1500	-	14.911	16.13
3PHFWB40A20KV	20000	10000	40	20	<100	1500	-	17.161	18.38
3PHFWB40A24KV	24000	12000	40	24	<100	1500	-	19.411	20.63
3PHFWB40A28KV	28000	14000	40	28	<100	1500	-	21.661	22.88
3PHFWB40A32KV	32000	16000	40	32	<100	1500	-	23.911	25.13
3PHFWB40A36KV	36000	18000	40	36	<100	1500	-	26.161	27.38

Maximum junction operating temperature $T_J = 180^{\circ}C$

Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg ⁴ V	Max. Applied Voltage ⁴ V	Avg. Forward Current Max. $I_{FAVM}@40^{\circ}C$ A	Max. Forward Voltage Drop $V_F@I_F$ Per Leg ² V	Max. Reverse Current $I_R@V_{RRM}@25^{\circ}C^5$ μA	Max. Surge Current I_{FSM}^3 A	Max. Reverse Recovery Time T_{RR} nS	Package Dimension A (Inches)	Package Dimension B (Inches)
3PH Series - Medium Current Full Wave Bridge									
3PHFWB18A8KV	8000	4000	18	8	<100	1050	-	8.161	9.38
3PHFWB18A16KV	16000	8000	18	16	<100	1050	-	10.411	11.63
3PHFWB18A24KV	24000	12000	18	24	<100	1050	-	12.661	13.88
3PHFWB18A32KV	32000	16000	18	32	<100	1050	-	14.911	16.13
3PHFWB18A40KV	40000	20000	18	40	<100	1050	-	17.161	18.38
3PHFWB18A48KV	48000	24000	18	48	<100	1050	-	19.411	20.63

Maximum junction operating temperature $T_J = 150^{\circ}$

¹ V_F measured at 14 Amperes Forward Current

² V_F measured at 6 Amperes Forward Current

³ 1/2 Sine(60Hz) @ $T_J=150^{\circ}C$

⁴ Individual diodes used in these assemblies are protected with MOVs. The clamp voltage of the MOVs is set considerably below the diode avalanche voltage. For this reason, the maximum safe input voltage applied to the bridge should not exceed 50% of the rated V_{RRM} .

⁵ Leakage current values include both MOV and diode leakage measured at 50% of V_{RRM} See note 4.

All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.



FIGURE 73

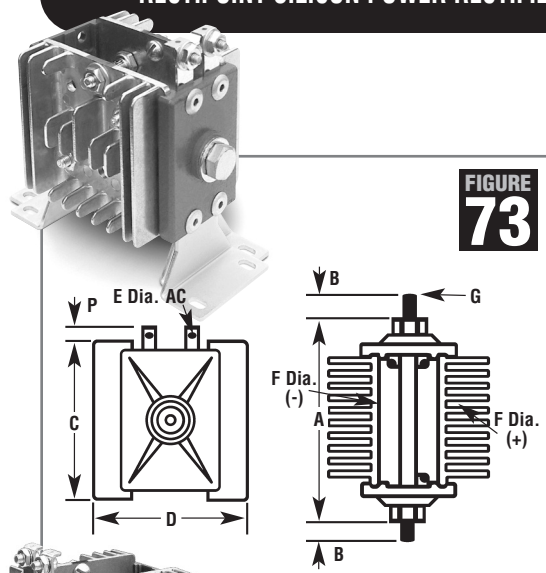
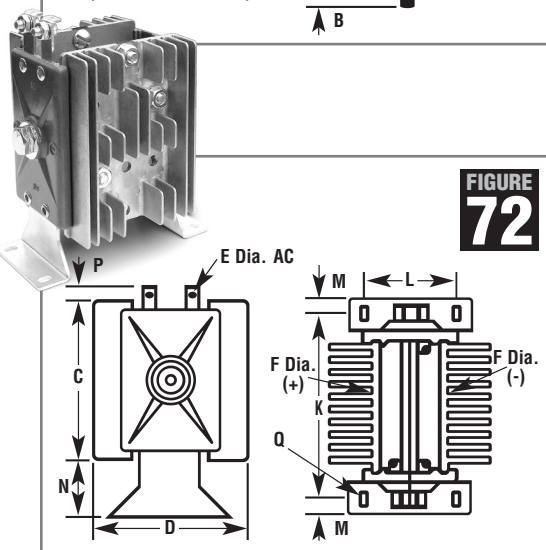
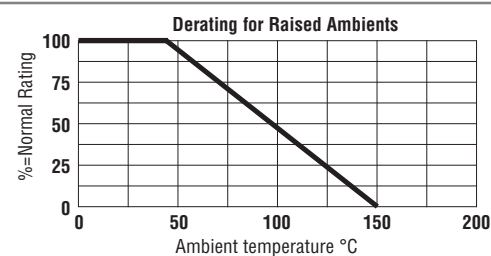


FIGURE 72



Dimensions

	X Type		Y Type	
	Inches	Millimeters	Inches	Millimeters
A	4.31	109.4	4.0	101.6
B	.625	15.87	0.5	12.7
C	4.0	101.6	2.5	63.5
D	3.12	79.2	2.56	65.0
E	.201	5.10	.177	4.495
F	.265	6.731	.198	5.029
G	3/8 - 16UNC - 3A		5/16 - 16UNC - 3A	
K	3.93	15.87	3.75	95.2
L	1.5	101.6	1.25	31.7
M	.281	79.2	.281	7.137
N	.875	5.10	.937	23.79
P	.625	6.731	.625	15.87
Q	3/16x5/16		3/16x5/16	



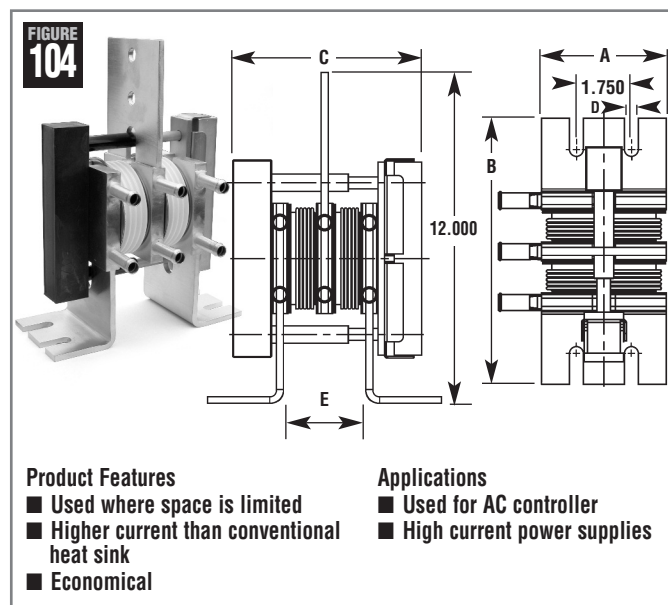
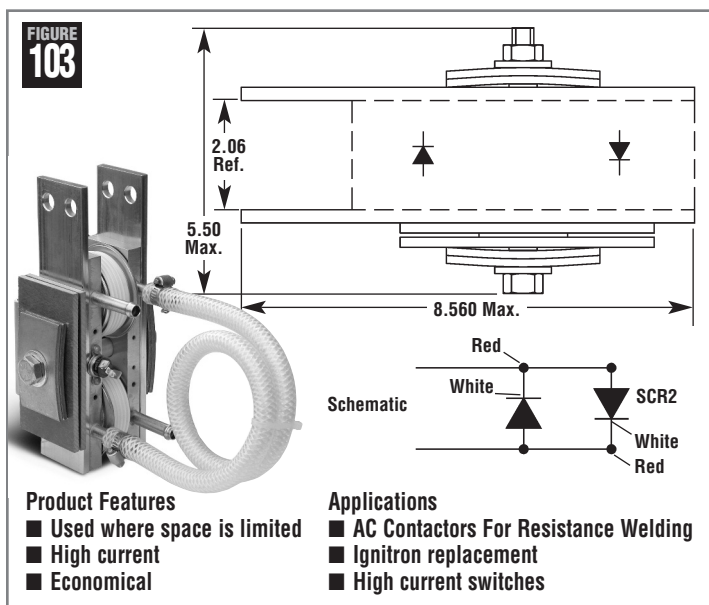
Please Note: Other circuit arrangements available, doubler, quadrupler, single phase and three phase bridges. Fast recovery and MOV compensation can be requested.

*Available with bracket (B) or stud (N) mounting. Fast recovery and MOV compensation available on request. All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.

Part Number	Rep. Peak Reverse Voltage V_{RRM} V	Avg. Forward Current 40°C A	Avg. Forward Current 40°C ¹ A	Max. Forward Voltage Drop $V_F @ I_F$ V	Max. Reverse Current $I_R @ V_{RRM} @ 25°C$ mA	Max. Surge Current I_{FSM} A	Figure
Single Phase Bridges							
Y2120B1*1	200	14	26	1.2	5	370	73
Y2140B1*1	400	14	26	1.2	5	370	73
Y2160B1*1	600	14	26	1.2	5	370	73
Y2180B1*1	800	14	26	1.2	5	370	73
Y21100B1*1	1000	14	26	1.2	5	370	73
Y21120B1*1	1200	14	26	1.2	5	370	73
Y21140B1*1	1400	14	26	1.2	5	370	73
Y21160B1*1	1600	14	26	1.2	5	370	73
X2120B1*1	200	22	40	1.2	5	370	72
X2140B1*1	400	22	40	1.2	5	370	72
X2160B1*1	600	22	40	1.2	5	370	72
X2180B1*1	800	22	40	1.2	5	370	72
X21100B1*1	1000	22	40	1.2	5	370	72
X21120B1*1	1200	22	40	1.2	5	370	72
X21140B1*1	1400	22	40	1.2	5	370	72
X21160B1*1	1600	22	40	1.2	5	370	72
X3420B1*1	200	35	68	1.2	5	1050	72
X3440B1*1	400	35	68	1.2	5	1050	72
X3460B1*1	600	35	68	1.2	5	1050	72
X3480B1*1	800	35	68	1.2	5	1050	72
X34100B1*1	1000	35	68	1.2	5	1050	72
X34120B1*1	1200	35	68	1.2	5	1050	72
X34140B1*1	1400	35	68	1.2	5	1050	72
X34160B1*1	1600	35	68	1.2	5	1050	72
X3720B1*1	200	43	80	1.2	5	1500	72
X3740B1*1	400	43	80	1.2	5	1500	72
X3760B1*1	600	43	80	1.2	5	1500	72
X3780B1*1	800	43	80	1.2	5	1500	72
X37100B1*1	1000	43	80	1.2	5	1500	72
X37120B1*1	1200	43	80	1.2	5	1500	72
X37140B1*1	1400	43	80	1.2	5	1500	72
X37160B1*1	1600	43	80	1.2	5	1500	72
Three Phase Bridges							
Y2120Z1*1	200	22	42	1.2	5	370	73
Y2140Z1*1	400	22	42	1.2	5	370	73
Y2160Z1*1	600	22	42	1.2	5	370	73
Y2180Z1*1	800	22	42	1.2	5	370	73
Y21100Z1*1	1000	22	42	1.2	5	370	73
Y21120Z1*1	1200	22	42	1.2	5	370	73
Y21140Z1*1	1400	22	42	1.2	5	370	73
Y21160Z1*1	1600	22	42	1.2	5	370	73
X2120Z1*1	200	26	55	1.2	5	370	72
X2140Z1*1	400	26	55	1.2	5	370	72
X2160Z1*1	600	26	55	1.2	5	370	72
X2180Z1*1	800	26	55	1.2	5	370	72
X21100Z1*1	1000	26	55	1.2	5	370	72
X21120Z1*1	1200	26	55	1.2	5	370	72
X21140Z1*1	1400	26	55	1.2	5	370	72
X21160Z1*1	1600	26	55	1.2	5	370	72
X3420Z1*1	200	55	100	1.2	5	1050	72
X3440Z1*1	400	55	100	1.2	5	1050	72
X3460Z1*1	600	55	100	1.2	5	1050	72
X3480Z1*1	800	55	100	1.2	5	1050	72
X34100Z1*1	1000	55	100	1.2	5	1050	72
X34120Z1*1	1200	55	100	1.2	5	1050	72
X34140Z1*1	1400	55	100	1.2	5	1050	72
X34160Z1*1	1600	55	100	1.2	5	1050	72
X3720Z1*1	200	65	120	1.2	5	1500	72
X3740Z1*1	400	65	120	1.2	5	1500	72
X3760Z1*1	600	65	120	1.2	5	1500	72
X3780Z1*1	800	65	120	1.2	5	1500	72
X37100Z1*1	1000	65	120	1.2	5	1500	72
X37120Z1*1	1200	65	120	1.2	5	1500	72
X37140Z1*1	1400	65	120	1.2	5	1500	72
X37160Z1*1	1600	65	120	1.2	5	1500	72

¹ Current rating based on cooling airflow of 800LFM

² 1/2 Sine(60Hz) @ 25°C



Part Number ¹	Max. Welding Current @50% Duty Cycle Amps _{RMS} A	Max. Welding Current @100% Duty Cycle Amps _{RMS} A	Peak Inverse Voltage V _{RRM} V	SCR Voltage Rating V _{RRM} V	Surge Rating 8.3mS I _{FSM} A	Figure
RW Series - AC Contactors						
RW700AC1000	1350	700	1000-2000	1000	7500	103
RW700AC1200	1350	700	1000-2000	1200	7500	103
RW700AC1400	1350	700	1000-2000	1400	7500	103

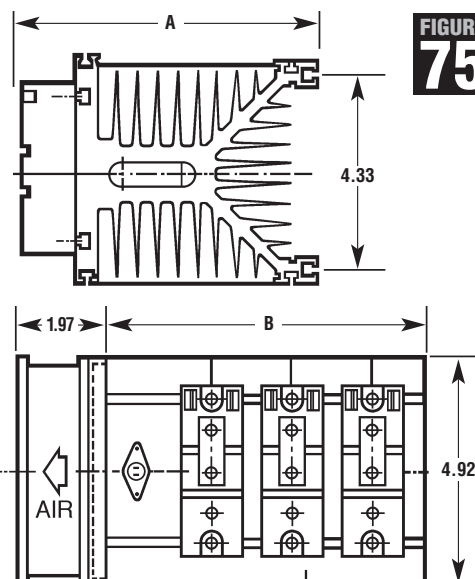
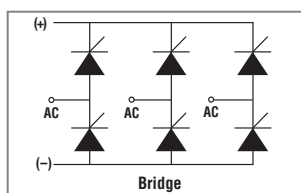
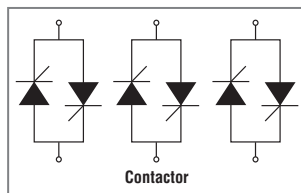
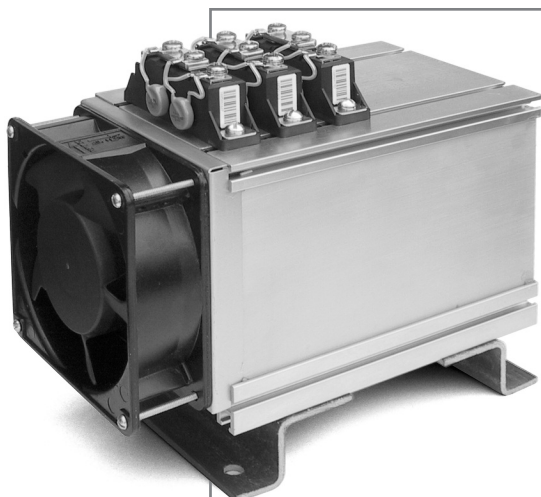
Part Number ¹	1/2 Wave Current Rating I _{AVG} per leg A	Single Phase Current Rating I _{DC} ² A	Peak Inverse Voltage Rating V _{RRM} V	Dimensions in Inches					Figure
WC Series - Watercooled High Current Diodes				A	B	C	D	E	
WC38D1500A•V	1500	2900	1500-2600	3	8.537	6.958	0.406	3.097	104
WC52D2100A•V	2100	4100	1400-2000	3	8.537	6.958	0.406	3.097	104
WC77D3600A•V	3600	6800	1800-2600	4	9.307	7.668	0.531	3.807	104

Part Number ¹	1/2 Wave Current Rating I _{AVG} per leg A	Single Phase Current Rating I _{DC} ² A	Peak Inverse Voltage Rating V _{RRM} V	Dimensions in Inches					Figure
WC Series - Watercooled High Current SCR				A	B	C	D	E	
WC38T750A•V	750	1450	500-1600	3	8.537	6.958	0.406	3.097	104
WC52T1250A•V	1250	2450	500-1400	3	8.537	6.958	0.406	3.097	104
WC65T1750A•V	1750	3350	600-2000	4	9.107	7.468	0.531	3.607	104
WC77T1950A•V	1950	3700	1200-2100	4	9.307	7.668	0.531	3.807	104

¹ Replace the • in the above part number with the required peak reverse voltage (PIV). Part number WC38T750A500V is a 750 amp, 500 volt assembly.

² Devices shown are half bridges and two units are required for full bridge operation.

All listed products shipped on December 31, 2013 or later will be RoHS Compliant.



Part Number	Repetitive Peak Reverse Voltage V_{RRM} Per Leg V	Maximum Forward Voltage Drop $V_F @ I_F$ Per Leg V	Output Current Convection A_{RMS}	Output Current Forced Air ² A_{RMS}	Max. Reverse Leakage $T. @ 125^\circ C$ mA	Surge Current I_{FSM}^1 A	Dimensions A B mm	
SCR47TC Series - Modular 3 Phase SCR Contactors							Figure 75	
SCR47TC●	400-1200	1.95	47	60	15	420	6.85	7.08
SCR60TC●	400-1200	1.81	60	85	15	890	6.85	7.08
SCR75TC●	400-1200	1.54	75	100	15	1370	6.85	7.08
SCR95TC●	400-1200	1.58	95	135	15	1870	6.85	7.08
SCR135TC●	400-1200	1.57	135	160	50	3360	7.87	8.66
SCR160TC●	400-1200	1.54	160	185	50	5100	7.87	8.66
SCR47TB Series - Modular 3 Phase SCR Contactors							Figure 75	
SCR47TB●	400-1200	1.95	47	77	15	420	6.85	7.08
SCR60TB●	400-1200	1.81	60	110	15	890	6.85	7.08
SCR70TB●	400-1200	1.54	70	130	15	1370	6.85	7.08
SCR85TB●	400-1200	1.58	85	175	15	1870	6.85	7.08
SCR105TB●	400-1200	1.49	105	235	50	7850	7.87	8.66

- Replace the dot with the required voltage. i.e. SCR47TC40 for 400V, 60 for 600V, 80 for 800V, 100 for 1000V and 120 for 1200V

Add "D" to the end of the part number for a free wheeling diode option

Add "F" to the end of the part number for Fan option

Notes:

¹ 1/2 Sine(60Hz) @ 25°C

² Required air flow, 100CFM

Operating & Storage Temperature -55°C to 125°C

All devices RoHS compliant per exemption. All units are MOV compensated. Other circuit arrangements available, doublers, quaduplers and single phase bridges.

All listed products shipped on December 31, 2013 or later will be RoHS Compliant.

Available earlier by special request, contact factory or sales rep for availability.

FIGURE 53

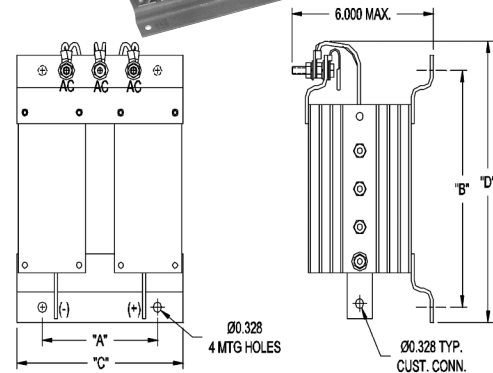


FIGURE 55

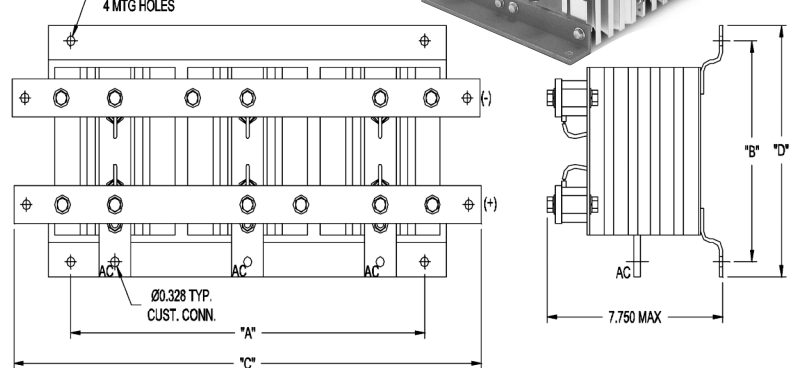


FIGURE 54

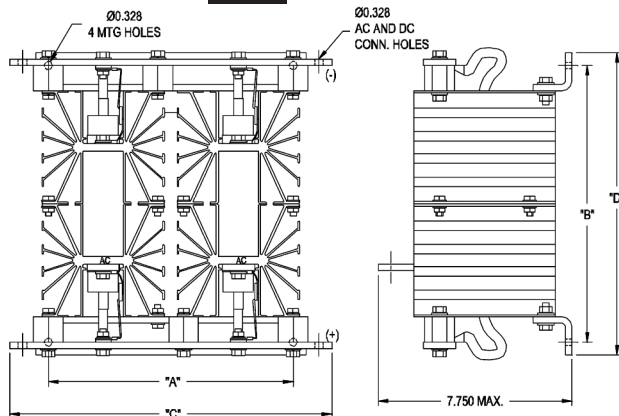
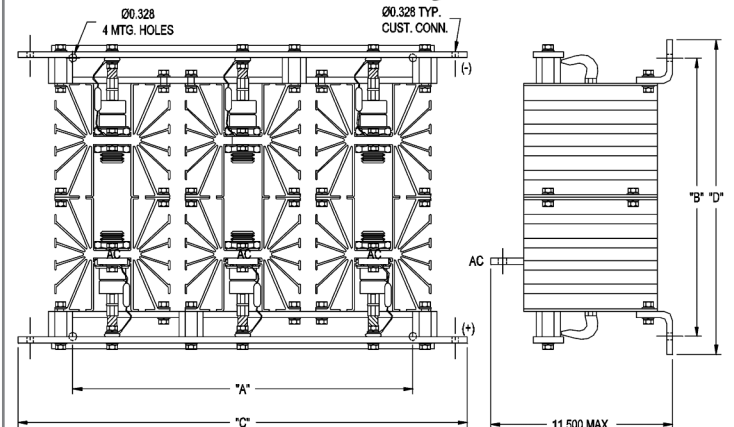


FIGURE 56



Part Number	Peak Repetitive Reverse Voltage V_{RRM} Per Leg Volts	Maximum Average Forward Current $I_{FAVM@50^{\circ}C}$ Amps	Maximum Forward Voltage Drop V_F @ I_F Per Leg Volts	Maximum Reverse Current $I_R@V_{RRM}$ @ $25^{\circ}C$ MilliAmps	Maximum Surge Current I_{FSM} (8.3ms) Amps	Fig.	DIM "A"	DIM "B"	DIM "C"	DIM "D"
CB Series - Single Phase Full Wave Bridge Configuration										
CB70H2AA●	400 -1200	70	1.50	1.0	500	53	4.50	7.75	6.50	9.50
CB100H2AA●	400 -1200	100	1.50	1.0	1200	53	4.50	7.75	6.50	9.50
CB200K2AA●	400 -1200	200	1.50	1.0	3000	55	9.50	7.25	12.50	8.25
CB250K4AA●	400 -2000	250	1.50	1.0	3600	54	9.50	11.00	12.50	12.00
CB300K4AA●	400 -1600	300	1.50	1.0	6850	54	9.50	11.00	12.50	12.00
CT Series - Three Phase Full Wave Bridge Configuration										
CT50G2AA●	400 -1200	50	1.50	1.0	500	53	4.50	7.75	6.50	9.50
CT150K3AA●	400 -1200	150	1.50	1.0	1200	55	14.00	7.25	18.50	8.25
CT300K3AA●	400 -1200	300	1.50	1.0	3600	55	14.00	7.25	18.50	8.25
CT400K6AA●	400 -2500	400	1.50	1.0	3600	55	14.00	11.00	18.50	12.50
CT500K6AA●	400 -1600	500	1.50	1.0	6850	56	14.00	11.00	18.50	12.50
CT700U6AA●	400 -1600	700	1.50	1.0	6850	56	18.50	14.50	24.00	15.50
CT1000V6AA●	400 -1600	1000	1.50	1.0	10960	56	18.50	14.50	24.00	15.50

P/N CT50G2AA400 represents a 50 Ampere , 400 Volt VRRM Three Phase Full Wave Bridge Rectifier

Where the ● appears, the desired PIV rating should be inserted instead. Voltage ratings are available in increments of 200V from 400 to 1200 or 400 to 1600 as appropriate. All listed products shipped on December 31, 2013 or later will be RoHS Compliant. Available earlier by special request, contact factory or sales rep for availability.