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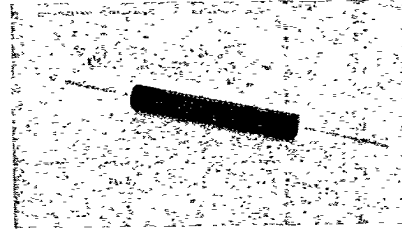
T-23-05

DLS 089

June 1982

# High Voltage Diode H1812

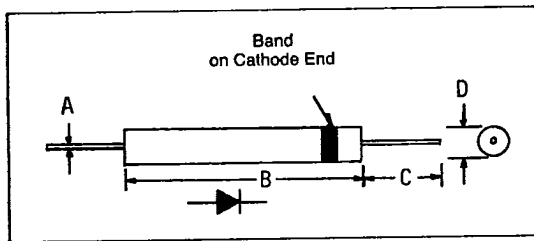
- Designed for B & W TV High Voltage Rectifier up to 20 kVDC CRT Voltage
- Avalanche Quality Rectifier Junctions
- Molding Material Rated UL 94 V-0
- Uniform Chip-to-Chip Recovery
- Low RFI in TV Circuits
- Platinum Doped



MAXIMUM RATINGS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)	SYMBOL		UNITS
Repetitive Peak Reverse Voltage	$V_{RRM}$	30	kV
Forward Current (Average) See Fig. 1, 2 & 3	$I_{F(AV)}$	600	$\mu\text{A}$
Forward Current (Total RMS)	$I_{F(RMS)}$	4.6	mA
Repetitive Peak Forward Current	$I_{FRM}$	100	mA
Storage Temperature Range	$T_{STG}$	-40 to +150	$^\circ\text{C}$
Ambient Operating Temperature Range	$T_A$	-40 to +100	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)	SYMBOL		UNITS
Maximum Reverse Current at $V_R = 30\text{kV}$	$I_R$	1	$\mu\text{A}$
Maximum Forward Voltage Drop at $I_F = 5\text{mA}$	$V_{FM}$	85	V
Reverse Recovery Time, $I_F = 2\text{mA}$ , $I_R = -4\text{mA}$ and $I_r(\text{rec}) = -1\text{mA}$ (Fig. 4)	$t_{rr}$	100 typical 175 Max.	nsec
Soldering Temperature: $260^\circ\text{C}$ Max. for 10 sec. max. $1/16"$ from epoxy			

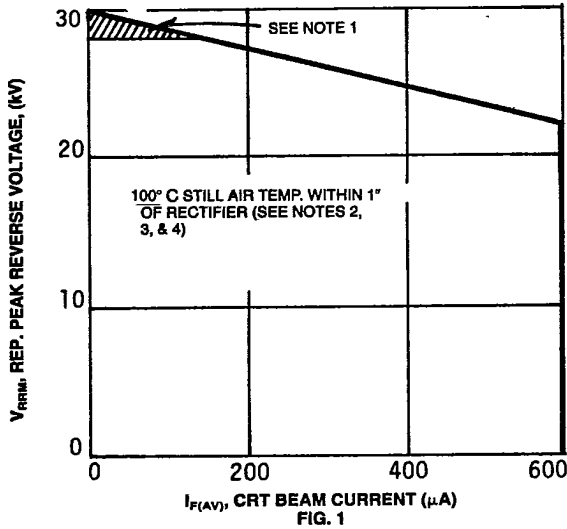
Encapsulating Considerations: See Varo Application Note "Design Considerations for HV Silicon Rectifiers Integrated into Flyback Transformers."



LTR	INCHES	MILLIMETERS
A	.0236 Dia.	0.6 Dia.
B	1.5	38,10
C	.50 Min.	12,7 Min
D	.235	5,97

T-23-05

**DERATING FOR USE AS HIGH VOLTAGE RECTIFIER  
IN 15,734 Hz DEFLECTION SYSTEM**



**NOTES:**

- 1) Operation in cross-hatched region should be limited to less than 5 min.
- 2) Air temp, measured with calibrated laboratory-grade alcohol thermometer.
- 3) Case temp. = 110°C when rectifier is operating at 22 kV  $V_{RRM}$ , 600  $\mu A$ , in 95°C still air ambient. Case temp. measured with Tempil "Tempilaq" Temp. Indicating Liquid. Source: Tempil Division Big Three Industries, Inc. South Plainfield NJ 07080
- 4) All temperatures presented here are approx. 10°C below known thermal runaway points. We recommend that customers intentionally raise the still air ambient temp on their designs to learn the actual thermal runaway point for their application. The final design should have at least 20°C safety factor.

**TYPICAL OPERATING CIRCUIT**

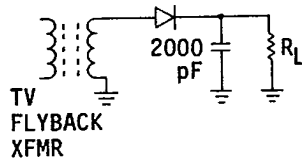


FIG. 2A

**TYPICAL APPLIED VOLTAGE**

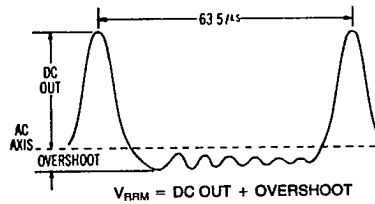


FIG. 2B

**REP. PEAK REV. VS:  
AMBIENT TEMPERATURE**

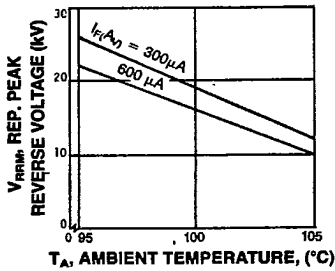


FIG. 3

**RECOVERY WAVEFORM**

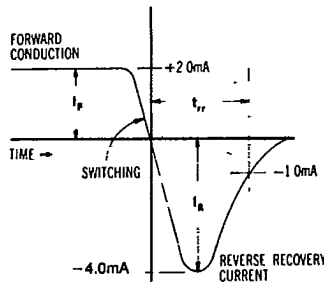


FIG. 4A

**RECOVERY TEST CIRCUIT**

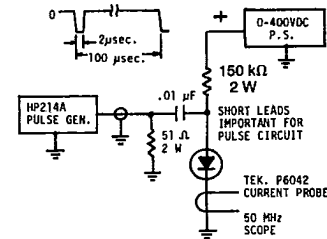


FIG. 4B