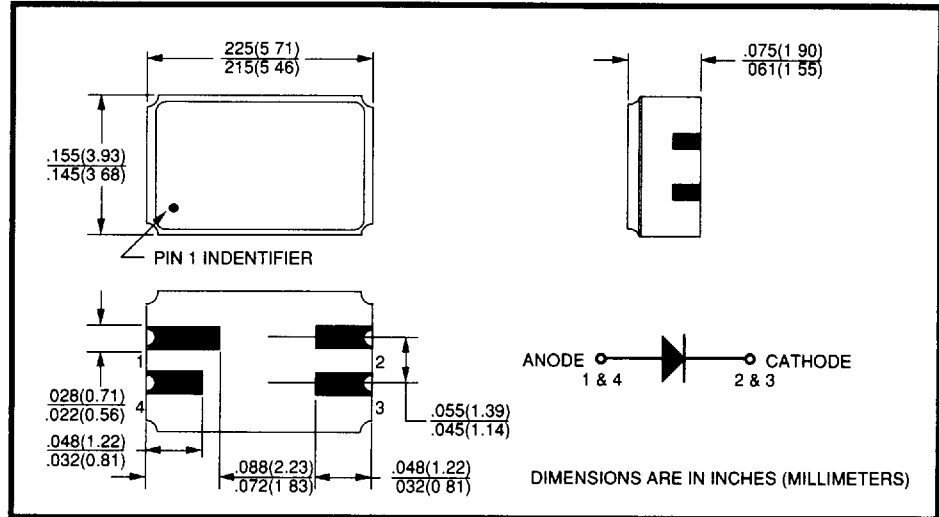
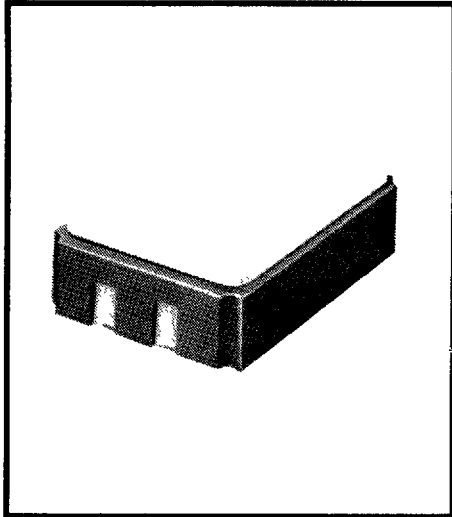


Surface Mount Extra Fast Recovery Rectifiers

Types HCR3400/HCR31000 Series



Features

- Surface mountable on ceramic or printed circuit board
- Hermetically sealed package
- 400 to 1000 volt
- t_{rr} as low as 30 nsec
- Screened per MIL-S-19500 TX or TXV equivalent levels on request

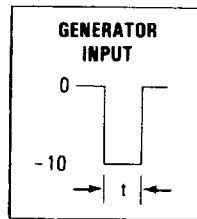
Description

Optek's extra fast recovery switching rectifiers exhibit the fastest t_{rr} available. This speed is coupled with low leakage and low V_F . These devices are hermetically sealed in a miniature custom designed surface mount leadless chip carrier. This construction provides for easy handling and mounting, plus rugged enough for any medical, military or space program.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

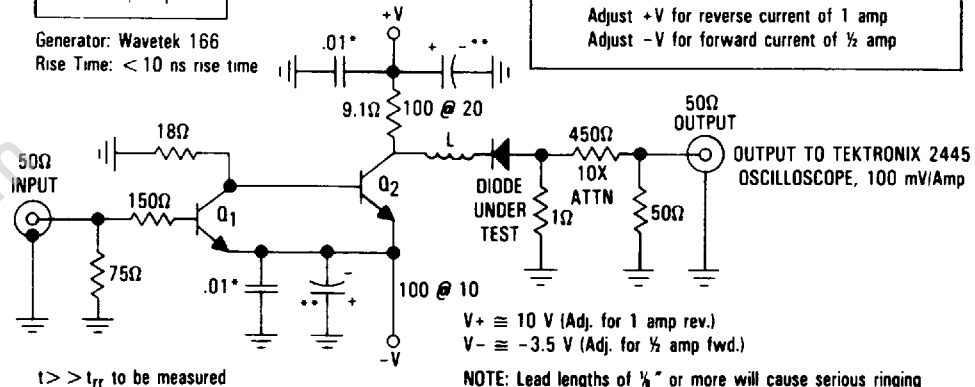
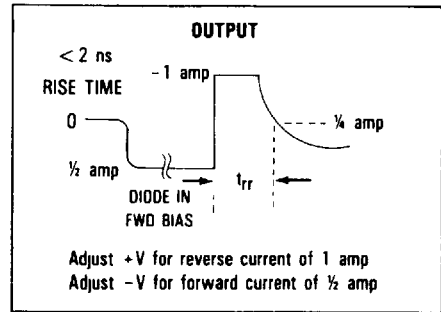
Operating Temperature	-65°C to +150°C
Storage Temperature	-65°C to +175°C
Soldering Temperature (vapor phase reflow for 30 sec.)	215°C
Soldering Temperature (heated collet for 5 sec.)	260°C
DC Power Dissipation, P_D	2.0 W xxx

t_{rr} Circuit



Generator: Wavetek 166
Rise Time: < 10 ns rise time

Transistors: 2N4430,
5 watt, 2GHz Types



*Several .01 ceramic chips in parallel.

**Solid tantalum capacitors only. 100 μF 20 volts

L - Slight inductance to null out overshoot - must trim (about 1/2" .040 copper wire).

$V_+ \cong 10\text{ V}$ (Adj. for 1 amp rev.)
 $V_- \cong -3.5\text{ V}$ (Adj. for 1/2 amp fwd.)

NOTE: Lead lengths of 1/4" or more will cause serious ringing effects. Layout is critical.

All resistors - non inductive. Preferably chip resistors layed on microwave strip line board. Critical inductance values are paralleled to help reduce inductance.

Types HCR3400/HCR31000 Series

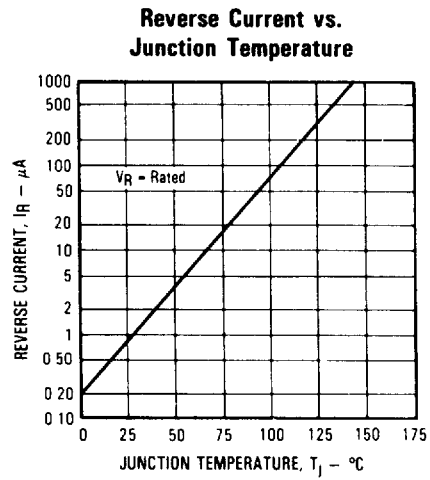
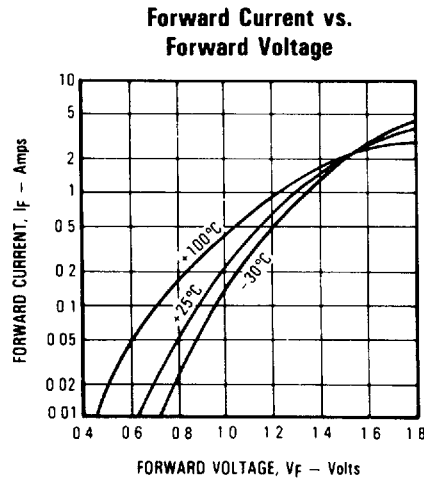
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Part No.	Spec V_R (90% E_S)	$t_{rr} 1/2-1-1/4 A$		Max $I_R @ V_R$		Max $C_0^{(1)}$ pF	$V_F @ 1.0 A$	
		Nom	Max	25°C	100°C		Nom	Max
	Volts	ns	ns	μA	μA	Volts	Volts	
HCR3400	400	20	30	10.0	160	50	1.24	1.50
HCR3500	500	20	30	10.0	160	50	1.28	1.80
HCR3600	600	35	50	10.0	160	40	1.32	1.80
HCR3700	700	35	50	10.0	160	40	1.36	1.80
HCR3800	800	50	75	10.0	160	40	1.40	1.80
HCR3900	900	70	100	10.0	160	35	1.42	1.80
HCR31000	1000	70	100	10.0	160	35	1.44	1.80

NOTE

1. C_0 measured @ $V_R = 0$

Typical Performance Curves



Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Optek Technology, Inc., 1215 West Crosby Road, Carrollton, Texas 75006 (214) 323-2200 TLX 215849 Fax (214) 323-2396

Printed in USA