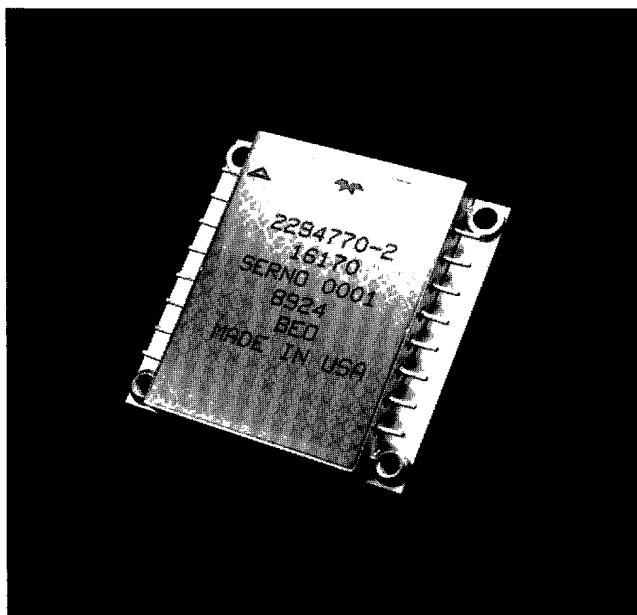




TELEDYNE MICROELECTRONICS



Power Hybrid, Diode Assembly P/N 2294770

DESCRIPTION

The 2294770 Power Hybrid contains four center tapped pairs of diodes: two pairs of Schottky diodes for positive output and two pairs of ultrafast diodes, one for positive output and the other for negative output. These diodes, which can be used in the power stage rectification in power supplies, are particularly suited for low EMI and high efficiency applications due to their ultrafast recovery with soft turn-off and low forward voltage drop.

The components are housed in hermetically sealed 16-pin packages and specified for operation over the temperature range of -55°C to 125°C .

Modular thermally managed power packaging design, certification to MIL-H-38534 and screening to MIL-STD-883 Method 5008 Class "B" or Class "S" makes this hybrid an excellent choice for Military, Avionic (Class "H") and Space (Class "K") applications.

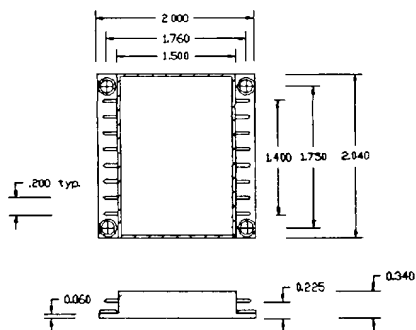
FEATURES

- Isolated metal hermetic power case
- Low thermal resistance: 0.3°C/W max
- 25A/500V ultrafast recovery diode rectifier max rating
- 50A/50V Schottky rectifier rating
- Certification to MIL-H-38534
- Screening to MIL-STD-883
- Other circuit configurations, diode types, voltage ratings, etc., are also available.

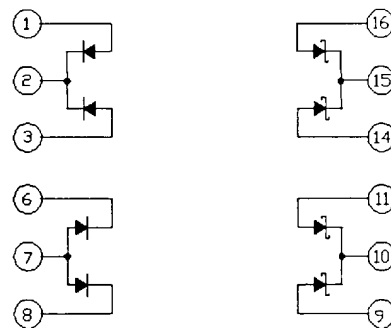
APPLICATIONS

- Linear and Switching Power Supplies
- Free wheeling diodes
- Inverters

PACKAGE DIMENSIONS (inches)



FUNCTIONAL DIAGRAM



ABSOLUTE MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$ unless otherwise noted) P/N 2294770

V_R	DC Reverse Voltage	
	Schottky Diode	50V
	Ultrafast Diode	500V
I_o	Average Rectified Forward Current, $T_c = 100^\circ$	
	Schottky Diode	50A
	(Derate above 100°C T_c linearly to zero ampere at $T_c = 150^\circ\text{C}$)	
	Ultrafast Diode	25A
	(Derate above 100°C T_c linearly to zero ampere at $T_c = 200^\circ\text{C}$)	
I_{FSM}	Non-Repetitive Sinusoidal Current Surge/8.3ms	
	Schottky Diode	1000A
	Ultrafast Diode	300A
T_j	Operating Temperature (junction)	-55°C to 150°C
T_{STG}	Storage Temperature	-55°C to 150°C

THERMAL CHARACTERISTICS

$R\theta_{JC}$	Junction to Case	
	Schottky	0.3 $^\circ\text{C}/\text{W}$ max
	Ultrafast	0.3 $^\circ\text{C}/\text{W}$ max

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
VF Instantaneous Forward Voltage ^①	Schottky Diode	IF=50A	—	1.00	V
	Ultrafast Diode	IF=25A	—	1.60	V
IR Reverse Leakage	Schottky Diode	VR=50V	—	5	mA
		VR=50V, TC=125 $^\circ\text{C}$	—	100	mA
	Ultrafast Diode	VR=500V	—	50	uA
		VR=500V, TC=125 $^\circ\text{C}$	—	5	mA
CJ Junction Capacitance	Schottky Diode	VR=5V, 0.1 < f < 1MHz	—	2200	pF
dV/dT Rate of Rise Off-State	Schottky Diode		—	1000	V/uS
trr Reverse Recovery Time	Ultrafast Diode	IF=0.5, IR=1A IRR=0.25A	—	50	nS

NOTE: ^① 300 uS pulse width at 2 % duty cycle.

Wherever possible, the information supplied is supported by performance and test data. However, no responsibility is assumed by Teledyne Microelectronics for its use. Teledyne reserves the right to make changes to this device or device specifications.

Contact your local authorized sales representative or the factory direct for any further information on the product