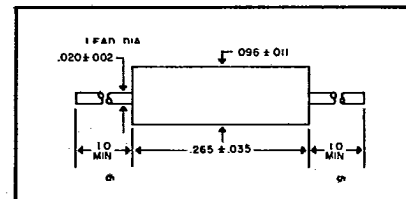


## FOUR-LAYER DIODES

## DO-7/DO-35 Case

Type	Switching Voltage		Holding Current Range I <sub>H</sub> @ 25°C mA
	V <sub>s</sub> ± V @ 25°C V	Range -60 to +125°C V	
4E20-3	20 ± 4	—	1-6
4E20-M-3	20 ± 4	14-25	1-6
4E20-8	20 ± 4	—	1-15
4E20-M-8	20 ± 4	14-25	1-15
4E20-28	20 ± 4	—	14-45
4E20-M-28	20 ± 4	14-25	14-45
4E30-3	30 ± 4	—	1-6
4E30-M-3	30 ± 4	23-36	1-6
4E30-8	30 ± 4	—	1-15
4E30-M-8	30 ± 4	23-36	1-15
4E30-28	30 ± 4	—	14-45
4E30-M-28	30 ± 4	23-36	14-45
4E40-3	40 ± 4	—	1-6
4E40-M-3	40 ± 4	32-46	1-6
4E40-8	40 ± 4	—	1-15
4E40-M-8	40 ± 4	32-46	1-15
4E40-28	40 ± 4	—	14-45
4E40-M-28	40 ± 4	32-46	14-45
4E50-3	50 ± 4	—	1-6
4E50-M-3	50 ± 4	41-57	1-6
4E50-8	50 ± 4	—	1-15
4E50-M-8	50 ± 4	41-57	1-15
4E50-28	50 ± 4	—	14-45
4E50-M-28	50 ± 4	41-57	14-45

## DO-7 Case

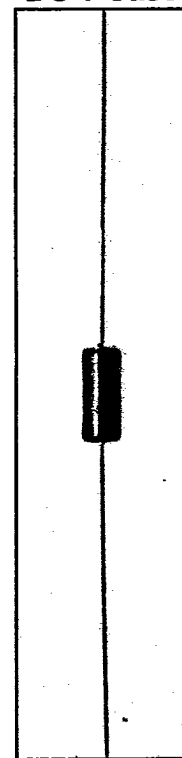


Four-layer diodes are silicon planar PNP thyristors also known as Shockley diodes. American Power Devices manufactures the broadest line of commercial, industrial and military four-layer diodes with switching voltages from 20 V to 50 V, and holding currents from 0.5mA to 45mA. They are available in DO-7 and DO-35 packages.

All four-layer diodes are manufactured in hermetically-sealed glass packages with tin plated Dumet leads for easy soldering. They are produced under conditions which result in rugged, highly reliable devices with stable characteristics.

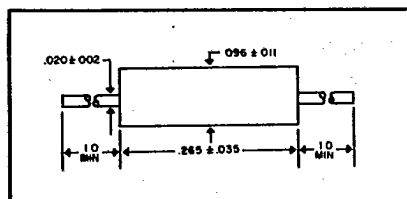
Applications for these four-layer diodes include telephone cross point switching, squib firing, speed control, light dimming, circuit protection and pulse generation.

## DO-7 Case



## FOUR-LAYER DIODES

## DO-7 Case



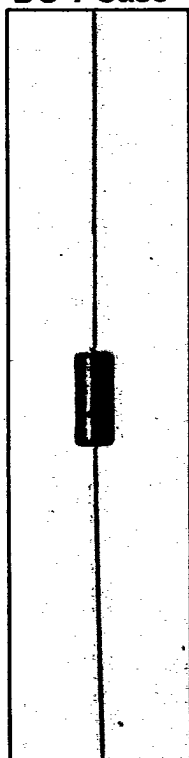
## DO-7 Case

Type	Switching Voltage		Holding Current	
	$V_s \pm V @ 25^\circ\text{C}$	Range -60 to +125°C	Range $I_H @ 25^\circ\text{C}$	-40 to +85°C
	V	V	mA	mA
1N3299	39 ± 4	—	1-15	—
1N3300	17.5 ± 4	—	1-15	—
1N3300A	18 ± 4	—	1-15	—
1N3489	20 ± 4	—	1-6.0	—
1N3489A	20 ± 4	—	1-6.0	—
1N3490	20 ± 4	—	14.0-45	—
1N3831	20 ± 4	14-25	0.5-15	40 Max
1N3832	25 ± 4	19-30	0.5-15	40 Max
1N3833	30 ± 4	23-36	0.5-15	40 Max
1N3834	35 ± 4	28-41	0.5-15	40 Max
1N3835	40 ± 4	32-46	0.5-15	40 Max
1N3836	45 ± 4	37-51	0.5-15	40 Max
1N3837	50 ± 4	41-57	0.5-15	40 Max
1N3839	20 ± 4	14-25	14.0-45	5 Min

## DO-7 Case

Type	Switching Voltage		Holding Current	
	$V_s \pm V @ 25^\circ\text{C}$	Range -60 to +125°C	Range $I_H @ 25^\circ\text{C}$	-40 to +85°C
	V	V	mA	mA
1N3840	25 ± 4	19-30	14-45	5 Min
1N3841	30 ± 4	23-36	14-45	
1N3842	35 ± 4	28-41	14-45	
1N3843	40 ± 4	32-46	14-45	
1N3844	45 ± 4	37-51	14-45	
1N3845	50 ± 4	41-57	14-45	5 Min
1N3935	30 ± 4	—	30 Min	—
1N3936	20 ± 4	—	8 Min	—
1N3772	15 ± 5	—	1.5-50	—
1N3303	33 ± 20	—	5-20	—
1N3304	39 ± 20	—	5-20	—
1N3303A	33 ± 10	—	5-20	—
1N3374A	39 ± 10	—	5-20	—

## DO-7 Case



## Additional Parameters For All 4-Layer Diodes @ 25°C

Switching Current	$I_s$	<125 μA
Holding Voltage	$V_h$	0.5 to 1.2 Volts
On Voltage	$V_{on}$	<1.2V @ 70 mA
On Impedance	$Z_{on}$	<2 ohms @ 70 mA @ 60 Hz
Forward Leakage Current	$I_{f1}$	<2 μA @ 0.6 V <sub>r</sub>
Reverse Leakage Current	$I_{r1}$	<2 μA @ 0.6 V <sub>r</sub>
Reverse Breakdown Voltage	$V_{rb}$	>0.60 V <sub>r</sub>
Turn On Time	$T_{on}$	10 to 500 ns. Dependent on target value and circuit.
Turn Off Time	$T_{off}$	20 to 1000 ns. Dependent on target value and circuit.
Capacitance	C	10 to 50 pf. Dependent on nominal V <sub>r</sub> and applied voltage.
Power Rating	P	250 mW. Derating to 25% @ 125°C.
Current Carrying Capacity		250 mA steady DC. Maximum current 10 amps with duty factor, repetition rate, pulse duration and ambient temperature such that power rating is not exceeded.
Ambient Temperature		-65°C to +150°C.
Operating Range		
Storage Temperature		-75°C to +200°C.