

# MDE Semiconductor, Inc.

78-150 Calle Tampico, Unit 210, La Quinta, CA. U.S.A. 92253 Tel: 760-564-8656 • Fax: 760-564-2414

1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

## MAX™ 40 Series

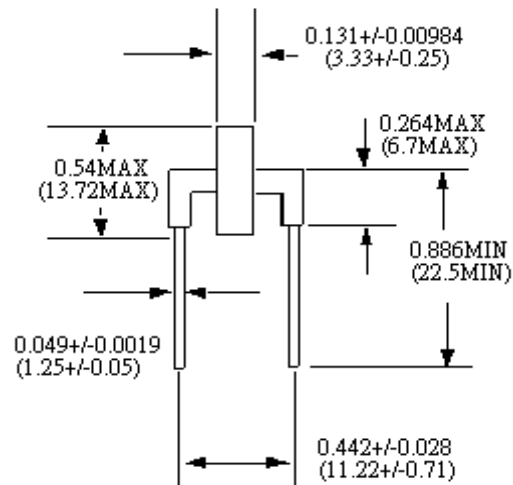
### HIGH CURRENT TRANSIENT VOLTAGE SUPPRESSOR (TVS) DIODE

VOLTAGE - 5.0 to 150 Volts

40000 Watt Peak Pulse Power

#### FEATURES

- Glass passivated junction
- Bidirectional
- 40000W Peak Pulse Power capability on 10x1000  $\mu$ sec waveform
- Excellent clamping capability
- Repetition rate (duty cycle):0.05%
- Sharp breakdown voltage
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volts to BV
- Typical IR less than 20 $\mu$ A above 10V
- High temperature soldering performance.



Dimensions in inches  
and  
(millimeters)

#### MECHANICAL DATA

Terminals: Ag Plated Axial leads, solderable per MIL-STD-750, Method 2026

Mounting Position: Any

Weight: 1.49  $\pm$  0.149g (0.053  $\pm$  0.005 ounces)

#### DEVICES FOR BIPOLAR APPLICATIONS

Bidirectional use C or CA Suffix. Electrical characteristics apply in both directions.

#### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ sec waveform	Pppm	Minimum 40000	Watts
Peak Pulse Current on 10x1000 $\mu$ sec waveform	Ippm	SEE CURVE	Amps

# MAXPak™ Series Curves

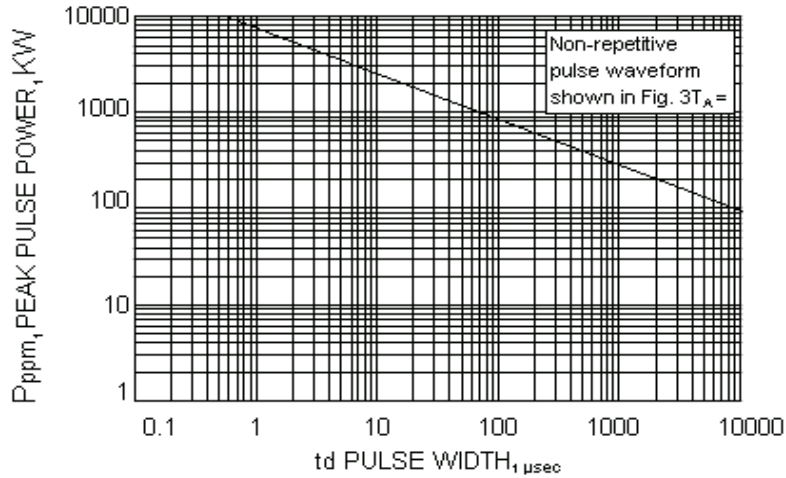


FIG. 1 PEAK PULSE POWER RATING

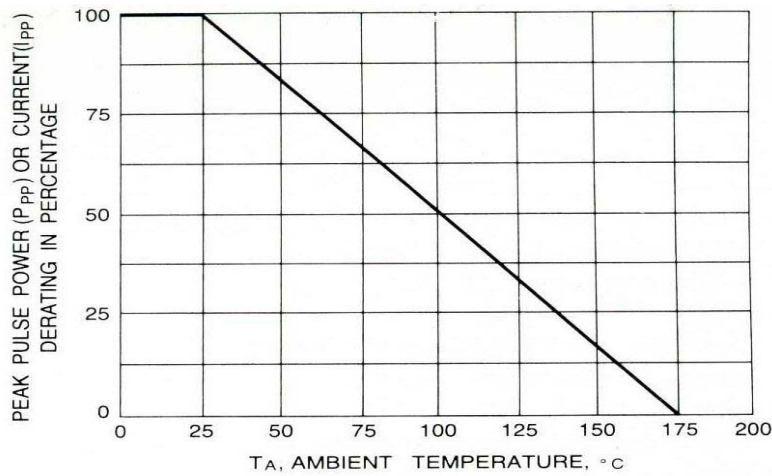


FIGURE 2-PULSE DERATING CURVE

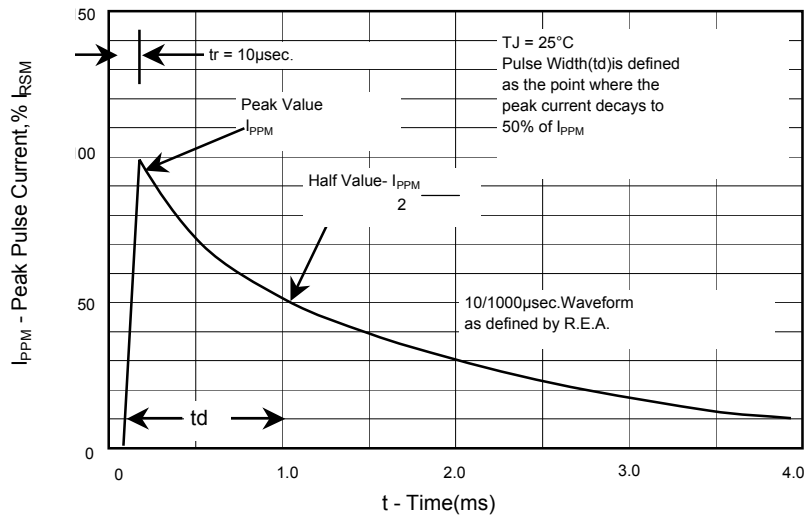


Fig.3 - Pulse Waveform

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### **MAX- 40™ Series**

BI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM(V)	BREAKDOWN VOLTAGE VBR(V) MIN@IT	BREAKDOWN VOLTAGE VBR(V) MAX@IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(µA)
MAX 40-5.0C	5.00	6.40	7.30	50	9.6	4166.60	5000
MAX 40-5.0CA	5.00	6.40	7.00	50	9.2	4347.80	5000
MAX 40-6.0C	6.00	6.67	8.15	50	11.4	3508.80	5000
MAX 40-6.0CA	6.00	6.67	7.37	50	10.3	3883.40	5000
MAX 40-6.5C	6.50	7.22	8.82	50	12.3	3252.00	5000
MAX 40-6.5CA	6.50	7.22	7.98	50	11.2	3571.40	5000
MAX 40-7.0C	7.00	7.78	9.51	50	13.3	3007.60	2000
MAX 40-7.0CA	7.00	7.78	8.60	50	12.0	3333.40	2000
MAX 40-7.5C	7.50	8.33	10.20	5.0	14.3	2797.20	500
MAX 40-7.5CA	7.50	8.33	9.21	5.0	12.9	3100.80	500
MAX 40-8.0C	8.00	8.89	10.90	5.0	15.0	2666.60	200
MAX 40-8.0CA	8.00	8.89	9.83	5.0	13.6	2941.20	200
MAX 40-8.5C	8.50	9.44	11.50	5.0	15.9	2515.80	50
MAX 40-8.5CA	8.50	9.44	10.40	5.0	14.4	2777.80	50
MAX 40-9.0C	9.00	10.00	12.20	5.0	16.9	2366.80	20
MAX 40-9.0CA	9.00	10.00	11.10	5.0	15.4	2597.40	20
MAX 40-10.0C	10.00	11.10	13.60	5.0	18.8	2127.60	20
MAX 40-10.0CA	10.00	11.10	12.30	5.0	17.0	2353.00	20
MAX 40-11.0C	11.00	12.20	14.90	5.0	20.1	1990.04	20
MAX 40-11.0CA	11.00	12.20	13.50	5.0	18.2	2197.80	20
MAX 40-12.0C	12.00	13.30	16.30	5.0	22.0	1818.18	20
MAX 40-12.0CA	12.00	13.30	14.70	5.0	19.9	2010.00	20
MAX 40-13.0C	13.00	14.40	17.60	5.0	23.8	1680.68	20
MAX 40-13.0CA	13.00	14.40	15.90	5.0	21.5	1860.46	20
MAX 40-14.0C	14.00	15.60	19.10	5.0	25.8	1550.38	20
MAX 40-14.0CA	14.00	15.60	17.20	5.0	23.2	1724.14	20
MAX 40-15.0C	15.00	16.70	20.40	5.0	26.9	1486.98	20
MAX 40-15.0CA	15.00	16.70	18.50	5.0	24.4	1639.34	20
MAX 40-16.0C	16.00	17.80	21.80	5.0	28.8	1388.88	20
MAX 40-16.0CA	16.00	17.80	19.70	5.0	26.0	1538.46	20
MAX 40-17.0C	17.00	18.90	23.10	5.0	30.5	1311.48	20
MAX 40-17.0CA	17.00	18.90	20.90	5.0	27.6	1449.28	20
MAX 40-18.0C	18.00	20.00	24.40	5.0	32.2	1242.24	20
MAX 40-18.0CA	18.00	20.00	22.10	5.0	29.2	1369.86	20
MAX 40-20.0C	20.00	22.20	27.10	5.0	35.8	1117.32	20
MAX 40-20.0CA	20.00	22.20	24.50	5.0	32.4	1234.56	20
MAX 40-22.0C	22.00	24.40	29.80	5.0	39.4	1015.02	20
MAX 40-22.0CA	22.00	24.40	26.90	5.0	35.5	1126.76	20
MAX 40-24.0C	24.00	26.70	32.60	5.0	43.0	930.24	20
MAX 40-24.0CA	24.00	26.70	29.50	5.0	38.9	1028.28	20
MAX 40-26.0C	26.00	28.90	35.30	5.0	46.6	858.36	20
MAX 40-26.0CA	26.00	28.90	31.90	5.0	42.1	950.12	20
MAX 40-28.0C	28.00	31.10	38.00	5.0	50.1	798.40	20
MAX 40-28.0CA	28.00	31.10	34.40	5.0	45.4	881.06	20

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MAX 40-30.0C	30.00	33.30	40.70	5.0	53.5	747.66	20
MAX 40-30.0CA	30.00	33.30	36.80	5.0	48.4	826.44	20
MAX 40-33.0C	33.00	36.70	44.90	5.0	59.0	677.96	20
MAX 40-33.0CA	33.00	36.70	40.60	5.0	53.3	750.46	20
MAX 40-36.0C	36.00	40.00	48.90	5.0	64.3	576.36	20
MAX 40-36.0CA	36.00	40.00	44.20	5.0	58.1	498.14	20
MAX 40-40.0C	40.00	44.40	54.30	5.0	71.4	550.20	20
MAX 40-40.0CA	40.00	44.40	49.10	5.0	64.5	467.84	20
MAX 40-43.0C	43.0	47.80	58.40	5.0	76.7	521.52	20
MAX 40-43.0CA	43.0	47.80	52.80	5.0	69.4	576.36	20
MAX 40-45.0C	45.0	50.00	61.10	5.0	80.3	498.14	20
MAX 40-45.0CA	45.0	50.00	55.30	5.0	72.7	550.20	20
MAX 40-48.0C	48.0	53.30	65.20	5.0	85.5	467.84	20
MAX 40-48.0CA	48.0	53.30	58.90	5.0	77.4	516.80	20
MAX 40-51.0C	51.0	56.70	69.30	5.0	91.1	439.08	20
MAX 40-51.0CA	51.0	56.70	62.70	5.0	82.4	485.44	20
MAX 40-54.0C	54.0	60.00	73.30	5.0	96.3	415.36	20
MAX 40-54.0CA	54.0	60.00	66.30	5.0	87.1	459.24	20
MAX 40-58.0C	58.0	64.40	78.70	5.0	103.0	388.34	20
MAX 40-58.0CA	58.0	64.40	71.20	5.0	93.6	427.36	20
MAX 40-60.0C	60.0	66.70	81.50	5.0	107.0	373.84	20
MAX 40-60.0CA	60.0	66.70	73.70	5.0	96.8	413.22	20
MAX 40-64.0C	64.0	71.10	86.90	5.0	114.0	350.88	20
MAX 40-64.0CA	64.0	71.10	78.60	5.0	103.0	388.34	20
MAX 40-70.0C	70.0	77.80	95.10	5.0	125.0	320.00	20
MAX 40-70.0CA	70.0	77.80	86.00	5.0	113.0	353.98	20
MAX 40-75.0C	75.0	83.30	102.00	5.0	134.0	298.50	20
MAX 40-75.0CA	75.0	83.30	92.10	5.0	121.0	330.58	20
MAX 40-78.0C	78.0	86.70	106.00	5.0	139.0	287.76	20
MAX 40-78.0CA	78.0	86.70	95.80	5.0	126.0	317.46	20
MAX 40-85.0C	85.0	94.40	115.00	5.0	151.0	264.90	20
MAX 40-85.0CA	85.0	94.40	104.00	5.0	137.0	291.98	20
MAX 40-90.0C	90.0	100.00	122.00	5.0	160.0	250.00	20
MAX 40-90.0CA	90.0	100.00	111.00	5.0	146.0	273.98	20
MAX 40-100.0C	100.0	111.00	136.00	5.0	179.0	223.46	20
MAX 40-100.0CA	100.0	111.00	123.00	5.0	162.0	246.92	20
MAX 40-110.0C	110.0	122.00	149.00	5.0	196.0	204.08	20
MAX 40-110.0CA	110.0	122.00	135.00	5.0	177.0	225.98	20
MAX 40-140.0C	120.0	133.00	163.00	5.0	214.0	186.92	20
MAX 40-140.0CA	120.0	133.00	147.00	5.0	193.0	207.26	20
MAX 40-130.0C	130.0	144.00	176.00	5.0	230.0	173.91	20
MAX 40-130.0CA	130.0	144.00	159.00	5.0	209.0	191.39	20
MAX 40-150.0C	150.0	167.00	204.00	5.0	268.0	149.25	20
MAX 40-150.0CA	150.0	167.00	185.00	5.0	243.0	164.61	20

For Bidirectional type having Vrwm of 10 volts and less, the ID limit is double.

8/6/2002