

# ULCE SERIES

# ULTRA LOW CAPACITANCE TRANSIENT VOLTAGE SUPPRESSOR

**V<sub>RWM</sub> : 6.5 - 90 Volts**

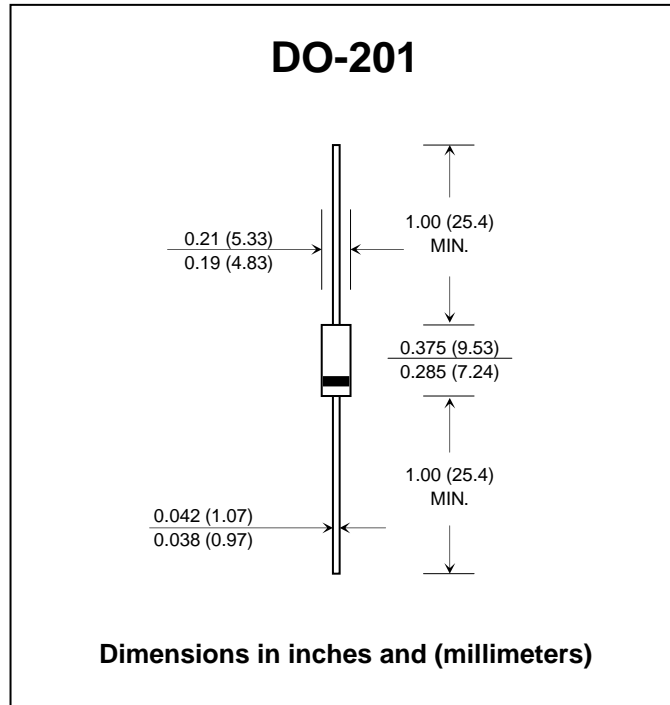
**P<sub>PK</sub> : 1500 Watts**

### FEATURES :

- \* 1500W Peak Pulse Surge reverse capability on 10/1000μs waveform
- \* Excellent clamping capability
- \* Low incremental surge resistance
- \* Fast response time : typically less than 5.0 ns from 0 volts to BV
- \* **Pb / RoHS Free**

### MECHANICAL DATA

- \* Case : DO-201 Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity : Color band denotes positive end on the Transorb (cathode)
- \* Mounting position : Any
- \* Weight : 0.93 gram



### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000μs waveform (Note 1, Figure 1)	P <sub>PPM</sub>	Minimum 1500	W
Steady State Power Dissipation at T <sub>L</sub> = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P <sub>D</sub>	5.0	W
Peak Forward Surge Current on 10/1000 μs Waveform (Fig. 3, Note 1)	I <sub>FSM</sub>	See Table 1.	A
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 175	°C

### Notes :

- (1) Non-repetitive Current pulse, per Fig. 3 and derated above Ta = 25 °C per Fig. 2
- (2) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type Number	Breakdown Voltage @ It		Reverse Stand-off Voltage	Maximum Reverse Leakage @ VRWM	Maximum Clamping Voltage @ IRSM	Maximum Reverse Current	Maximum Junction Capacitance @ 0 Volt	Working Inverse Blocking Voltage	Max. Inverse Blocking Current @ VWIB	Peak Inverse Blocking Voltage	
	VBR (V)	It	VRWM	IR	VRSM	IRSM		VWIB	IIB	VPIB	
	Min.	Max.	(mA)	(V)	( $\mu$ A)	(V)	(A)	pF	(V)	(mA)	(V)
ULCE6.5	8.82	10.42	10	6.5	1000	16.3	100	35	75	1.0	100
ULCE6.5A	8.82	9.58	10	6.5	1000	15.2	100	35	75	1.0	100
ULCE7.0	9.38	11.11	10	7.0	500	17.3	100	35	75	1.0	100
ULCE7.0A	9.38	10.20	10	7.0	500	16.0	100	35	75	1.0	100
ULCE7.5	9.93	11.80	10	7.5	250	18.3	100	35	75	1.0	100
ULCE7.5A	9.93	10.81	10	7.5	250	16.9	100	35	75	1.0	100
ULCE8.0	10.49	12.50	10	8.0	100	19.0	100	35	75	1.0	100
ULCE8.0A	10.49	11.43	10	8.0	100	17.6	100	35	75	1.0	100
ULCE8.5	11.04	13.1	1.0	8.5	50	19.9	94	35	75	1.0	100
ULCE8.5A	11.04	12.0	1.0	8.5	50	18.4	100	35	75	1.0	100
ULCE9.0	11.6	13.8	1.0	9.0	10	20.9	89	35	75	1.0	100
ULCE9.0A	11.6	12.7	1.0	9.0	10	19.4	97	35	75	1.0	100
ULCE10	12.7	15.2	1.0	10	5.0	22.8	80	35	75	1.0	100
ULCE10A	12.7	13.9	1.0	10	5.0	21.0	88	35	75	1.0	100
ULCE11	13.8	16.5	1.0	11	5.0	24.1	74	35	75	1.0	100
ULCE11A	13.8	15.1	1.0	11	5.0	22.2	82	35	75	1.0	100
ULCE12	14.9	17.9	1.0	12	5.0	26.0	68	35	75	1.0	100
ULCE12A	14.9	16.3	1.0	12	5.0	23.9	75	35	75	1.0	100
ULCE13	16.0	19.2	1.0	13	5.0	27.8	63	35	75	1.0	100
ULCE13A	16.0	17.5	1.0	13	5.0	25.5	70	35	75	1.0	100
ULCE14	17.2	20.7	1.0	14	5.0	29.8	58	35	75	1.0	100
ULCE14A	17.2	18.8	1.0	14	5.0	27.2	65	35	75	1.0	100
ULCE15	18.3	22.0	1.0	15	5.0	30.9	56	35	75	1.0	100
ULCE15A	18.3	20.1	1.0	15	5.0	28.4	61	35	75	1.0	100
ULCE16	19.4	23.4	1.0	16	5.0	32.8	52	35	75	1.0	100
ULCE16A	19.4	21.3	1.0	16	5.0	30.0	57	35	75	1.0	100
ULCE17	20.5	24.7	1.0	17	5.0	34.5	49	35	75	1.0	100
ULCE17A	20.5	22.5	1.0	17	5.0	31.6	54	35	75	1.0	100
ULCE18	21.6	26.0	1.0	18	5.0	36.2	46	35	75	1.0	100
ULCE18A	21.6	23.7	1.0	18	5.0	33.2	51	35	75	1.0	100
ULCE20	23.8	28.7	1.0	20	5.0	39.8	42	35	75	1.0	100
ULCE20A	23.8	26.1	1.0	20	5.0	36.4	46	35	75	1.0	100
ULCE22	26.0	31.4	1.0	22	5.0	43.4	38	35	75	1.0	100
ULCE22A	26.0	28.5	1.0	22	5.0	39.5	42	35	75	1.0	100
ULCE24	28.3	34.2	1.0	24	5.0	47.0	35	35	75	1.0	100
ULCE24A	28.3	31.1	1.0	24	5.0	42.9	39	35	75	1.0	100
ULCE26	30.5	36.9	1.0	26	5.0	50.6	32	35	75	1.0	100
ULCE26A	30.5	33.5	1.0	26	5.0	46.1	36	35	75	1.0	100
ULCE28	32.7	39.6	1.0	28	5.0	54.1	30	35	75	1.0	100
ULCE28A	32.7	36.0	1.0	28	5.0	49.5	33	35	75	1.0	100
ULCE30	34.9	42.3	1.0	30	5.0	57.5	28	35	75	1.0	100
ULCE30A	34.9	38.4	1.0	30	5.0	52.4	31	35	75	1.0	100
ULCE33	38.3	46.5	1.0	33	5.0	63.0	25.4	35	75	1.0	100
ULCE33A	38.3	42.2	1.0	33	5.0	57.3	28.1	35	75	1.0	100
ULCE36	41.6	50.5	1.0	36	5.0	68.3	23.3	35	75	1.0	100
ULCE36A	41.6	45.8	1.0	36	5.0	62.1	25.8	35	75	1.0	100
ULCE40	46.0	55.9	1.0	40	5.0	75.4	21.0	35	75	1.0	100
ULCE40A	46.0	50.7	1.0	40	5.0	68.5	23.3	35	75	1.0	100
ULCE43	49.4	60.0	1.0	43	5.0	80.7	19.5	35	150	1.0	200
ULCE43A	49.4	54.4	1.0	43	5.0	73.4	21.6	35	150	1.0	200

# ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type Number	Breakdown Voltage @ It		Reverse Stand-off Voltage	Maximum Reverse Leakage @ VRWM	Maximum Clamping Voltage @ IRSM	Maximum Reverse Current	Maximum Junction Capacitance @ 0 Volt	Working Inverse Blocking Voltage	Max. Inverse Blocking Current @ VWIB	Peak Inverse Blocking Voltage	
	VBR (V)	It									
	Min.	Max.	(mA)	VRWM (V)	IR (μA)	VRSM (V)	IRSM (A)	pF	VWIB (V)	IIB (mA)	VPIB (V)
ULCE45	51.6	62.7	1.0	45	5.0	84.3	18.7	35	150	1.0	200
ULCE45A	51.6	56.9	1.0	45	5.0	76.7	20.6	35	150	1.0	200
ULCE48	54.9	66.7	1.0	48	5.0	89.5	17.5	35	150	1.0	200
ULCE48A	54.9	60.5	1.0	48	5.0	81.4	19.4	35	150	1.0	200
ULCE51	58.3	70.9	1.0	51	5.0	95.1	16.5	35	150	1.0	200
ULCE51A	58.3	64.3	1.0	51	5.0	86.4	18.2	35	150	1.0	200
ULCE54	61.6	74.9	1.0	54	5.0	100.3	15.6	35	150	1.0	200
ULCE54A	61.6	67.9	1.0	54	5.0	91.1	17.2	35	150	1.0	200
ULCE58	66.0	80.3	1.0	58	5.0	107.0	14.6	35	150	1.0	200
ULCE58A	66.0	72.8	1.0	58	5.0	97.6	16.0	35	150	1.0	200
ULCE60	68.3	83.1	1.0	60	5.0	111.0	14.0	35	150	1.0	200
ULCE60A	68.3	75.3	1.0	60	5.0	100.8	15.5	35	150	1.0	200
ULCE64	72.7	88.5	1.0	64	5.0	118.0	13.2	35	150	1.0	200
ULCE64A	72.7	80.2	1.0	64	5.0	107.0	14.6	35	150	1.0	200
ULCE70	79.4	96.7	1.0	70	5.0	129.0	12.0	35	150	1.0	200
ULCE70A	79.4	87.6	1.0	70	5.0	117.0	13.3	35	150	1.0	200
ULCE75	84.9	103.6	1.0	75	5.0	138.0	11.2	35	150	1.0	200
ULCE75A	84.9	93.7	1.0	75	5.0	125.0	12.4	35	150	1.0	200
ULCE80	90.3	109.6	1.0	80	5.0	146.0	10.6	35	150	1.0	200
ULCE80A	90.3	99.6	1.0	80	5.0	133.0	11.6	35	150	1.0	200
ULCE90	101.6	123.6	1.0	90	5.0	164.0	9.4	35	300	1.0	200
ULCE90A	101.6	112.6	1.0	90	5.0	150.0	10.3	35	300	1.0	200

FIG.1 - PEAK PULSE POWER RATING CURVE

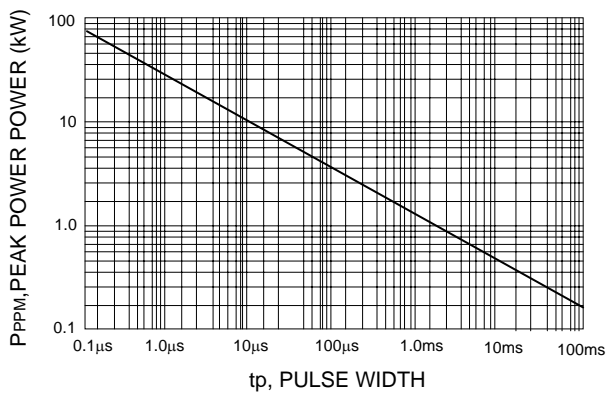


FIG.2 - PULSE DERATING CURVE

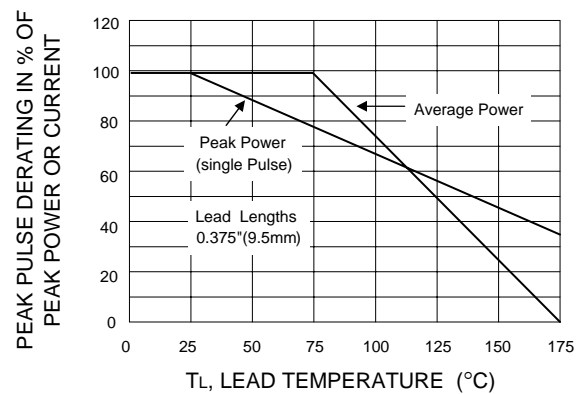


FIG.3 - PULSE WAVEFORM

