

1.5CE6.8A THRU 1.5CE440A  
1.5CE6.8CA THRU 1.5CE440CA

UNI-DIRECTIONAL  
AND BI-DIRECTIONAL  
SILICON TRANSIENT  
VOLTAGE SUPPRESSORS  
1500 WATTS, 6.8 THRU 440 VOLTS



www.centrasemi.com



**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 1.5CE6.8A (Uni-Directional) and 1.5CE6.8CA (Bi-Directional) Series types are Transient Voltage Suppressors designed to protect voltage sensitive components from high voltage transients.

**THIS DEVICE IS MANUFACTURED WITH A GLASS PASSIVATED CHIP FOR OPTIMUM RELIABILITY.**

Note: For Uni-Directional devices add suffix "A" to part number. For Bi-Directional devices add suffix "CA" to part number.

**MARKING: FULL PART NUMBER**

**Bi-directional devices shall not be marked with a Cathode band.**

**MAXIMUM RATINGS:** ( $T_L=25^\circ\text{C}$  unless otherwise noted)

Peak Power Dissipation (Note 1)  
Steady State Power Dissipation ( $T_L=75^\circ\text{C}$ , L.L.=3/8")  
Forward Surge Current (Uni-Directional only)  
Operating and Storage Junction Temperature

**SYMBOL**

$P_{PK}$  1500  
 $P_D$  5.0  
 $I_{FSM}$  200  
 $T_J, T_{stg}$  -65 to +175

**UNITS**

W  
W  
A  
 $^\circ\text{C}$

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

TYPE	BREAKDOWN VOLTAGE			TEST CURRENT $I_T$ mA	WORKING PEAK REVERSE VOLTAGE $V_{RWM}$ V	MAXIMUM REVERSE LEAKAGE CURRENT $I_R @ V_{RWM}$ $\mu\text{A}$	MAXIMUM CLAMPING VOLTAGE $V_C @ I_{PP}$ V	PEAK PULSE CURRENT (Note 1) $I_{PP}$ A	MAXIMUM TEMPERATURE COEFFICIENT $\theta_{V_{BR}}$ % / $^\circ\text{C}$
	$V_{BR} @ I_T$								
	MIN V	NOM V	MAX V						
1.5CE6.8	6.45	6.8	7.14	10	5.8	1000	10.5	143	0.057
1.5CE7.5	7.13	7.5	7.88	10	6.4	500	11.3	132	0.061
1.5CE8.2	7.79	8.2	8.61	10	7.02	200	12.1	124	0.065
1.5CE9.1	8.65	9.1	9.55	1.0	7.78	50	13.4	112	0.068
1.5CE10	9.5	10	10.5	1.0	8.55	10	14.5	103	0.073
1.5CE11	10.5	11	11.6	1.0	9.4	5.0	15.6	96	0.075
1.5CE12	11.4	12	12.6	1.0	10.2	5.0	16.7	90	0.078
1.5CE13	12.4	13	13.7	1.0	11.1	5.0	18.2	82	0.081
1.5CE15	14.3	15	15.8	1.0	12.8	5.0	21.2	71	0.084
1.5CE16	15.2	16	16.8	1.0	13.6	5.0	22.5	67	0.086
1.5CE18	17.1	18	18.9	1.0	15.3	5.0	25.2	59.5	0.088
1.5CE20	19.0	20	21.0	1.0	17.1	5.0	27.7	54	0.090
1.5CE22	20.9	22	23.1	1.0	18.8	5.0	30.6	49	0.092
1.5CE24	22.8	24	25.2	1.0	20.5	5.0	33.2	45	0.094
1.5CE27	25.7	27	28.4	1.0	23.1	5.0	37.5	40	0.096
1.5CE30	28.5	30	31.5	1.0	25.6	5.0	41.4	36	0.097
1.5CE33	31.4	33	34.7	1.0	28.2	5.0	45.7	33	0.098
1.5CE36	34.2	36	37.8	1.0	30.8	5.0	49.9	30	0.099
1.5CE39	37.1	39	41	1.0	33.3	5.0	53.9	28	0.100
1.5CE43	40.9	43	45.2	1.0	36.8	5.0	59.3	25.3	0.101

Notes: (1) Non-repetitive 10x1,000 $\mu\text{s}$  pulse.

R1 (8-September 2011)

1.5CE6.8A THRU 1.5CE440A  
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

TYPE	BREAKDOWN VOLTAGE			TEST CURRENT $I_T$	WORKING PEAK REVERSE VOLTAGE $V_{RWM}$	MAXIMUM REVERSE LEAKAGE CURRENT $I_R @ V_{RWM}$	MAXIMUM CLAMPING VOLTAGE $V_C @ I_{PP}$	PEAK PULSE CURRENT (Note 1) $I_{PP}$	MAXIMUM TEMPERATURE COEFFICIENT $\Theta V_{BR}$
	$V_{BR} @ I_T$								
	MIN V	NOM V	MAX V	mA	V	$\mu\text{A}$	V	A	% / $^{\circ}\text{C}$
1.5CE47	44.7	47	49.4	1.0	40.2	5.0	64.8	23.2	0.101
1.5CE51	48.5	51	53.6	1.0	43.6	5.0	70.1	21.4	0.102
1.5CE56	53.2	56	58.8	1.0	47.8	5.0	77	19.5	0.103
1.5CE62	58.9	62	65.1	1.0	53.0	5.0	85	17.7	0.104
1.5CE68	64.6	68	71.4	1.0	58.1	5.0	92	16.3	0.104
1.5CE75	71.3	75	78.8	1.0	64.1	5.0	103	14.6	0.105
1.5CE82	77.9	82	86.1	1.0	70.1	5.0	113	13.3	0.105
1.5CE91	86.5	91	95.5	1.0	77.8	5.0	125	12	0.106
1.5CE100	95.0	100	105	1.0	85.5	5.0	137	11	0.106
1.5CE110	104.5	110	115.5	1.0	94.0	5.0	152	9.9	0.107
1.5CE120	114	120	126	1.0	102	5.0	165	9.1	0.107
1.5CE130	123.5	130	136.5	1.0	111	5.0	179	8.4	0.107
1.5CE150	142.5	150	157.5	1.0	128	5.0	207	7.2	0.108
1.5CE160	152	160	168	1.0	136	5.0	219	6.8	0.108
1.5CE170	161.5	170	178.5	1.0	145	5.0	234	6.4	0.108
1.5CE180	171	180	189	1.0	154	5.0	246	6.1	0.108
1.5CE200	190	200	210	1.0	171	5.0	274	5.5	0.108
1.5CE220	209	220	231	1.0	185	5.0	328	4.6	0.108
1.5CE250	237.5	250	262.5	1.0	214	5.0	344	5.0	0.110
1.5CE300	285	300	315	1.0	256	5.0	414	5.0	0.110
1.5CE350	332.5	350	367.5	1.0	300	5.0	482	4.0	0.110
1.5CE400	380	400	420	1.0	342	5.0	548	4.0	0.110
1.5CE440	418	440	462	1.0	376	5.0	600	2.6	0.110

**DO-201 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.000	-	25.40	-
B	0.285	0.375	7.24	9.53
C	0.188	0.210	4.78	5.33
D	0.037	0.042	0.94	1.07

DO-201(REV: R1)

**MARKING: FULL PART NUMBER**  
 Bi-directional devices shall not be marked with a Cathode band.

R1 (8-September 2011)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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