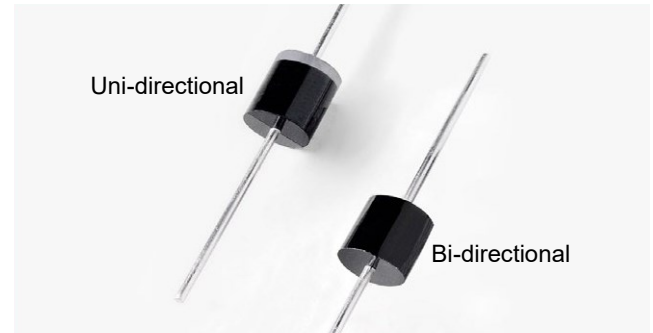
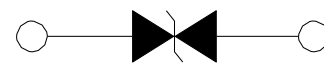


Features

- peak pulse capability at 10/1000 μ s waveform, 1500W repetition rate (duty cycles):0.01%
- Glass passivated chip junction in P600 Package
- Fast response time: typically less than 1.0ps from 0 Volts to BV min
- Excellent clamping capability
- Typical failure mode is short from over-specified voltage or current
- IEC 61000-4-2 ESD 30kV(Air), 30kV (Contact)
- Low incremental surge resistance



Uni-Directional



Bi-Directional

DO-201

Applications

TVS components are ideal for the protection of I/O interfaces, V_{CC} bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

Maximum Ratings and Characteristics

(T_A = 25 °C unless otherwise specified.)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation(Fig.2) by 10/1000 uS Test Waveform(Fig.4) (Note 1) -Single Die Parts	P _{PPM}	1500	W
Peak Pulse Power Dissipation(Fig.2) by 10/1000 uSTest Waveform(Fig.4) (Note 1) -Stacked Die Parts (Note 4)	P _{PPM}	2000	W
Steady State Power Dissipation on Infinite Heat Sink at T _L =75 °C	P _D	6.5	W
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Unidirectional Only (Note 2)	I _{FSM}	200	A
Maximum Instantaneous Forward Voltage at 100 A for Unidirectional Only (Note 3)	V _F	3.5/5.0	V
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 175	°C
Typical Thermal Resistance Junction to Lead	R _{θJL}	15	°C / W
Typical Thermal Resistance Junction to Ambient	R _{θJA}	75	°C / W

Notes

1. Non-repetitive current pulse, per Fig. 4 and derated above T_J(initial)=25 °C per Fig. 3.
2. Measured of 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
3. V_F < 3.5 V for single die parts and V_F < 5.0 V for stacked-die parts.
4. For stacked die component details, please refer to part numbers labeled by * in Electrical Characteristics.

TYPE		Reverse Stand-Off Voltage	Breakdown Voltage @I _T		Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(UNI)	(BI)	V _{RWM} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
1.5KE6V8V	1.5KE6V8B	5.80	6.45	7.14	10	10.	144.8	1000.0
1.5KE7V5V	1.5KE7V5B	6.40	7.13	7.88	10	11.3	134.5	500.0
1.5KE8V2V	1.5KE8V2B	7.02	7.79	8.61	10	12.1	125.6	200.0
1.5KE9V1V	1.5KE9V1B	7.78	8.65	9.55	1.0	13.	113.4	50.0
1.5KE10V	1.5KE10B	8.55	9.50	10.5	1.0	14.5	104.8	10.0
1.5KE11V	1.5KE11B	9.40	10.5	11.6	1.0	15.6	97.4	5.0
1.5KE12V	1.5KE12B	10.2	11.4	12.6	1.0	16.7	91.0	5.0
1.5KE13V	1.5KE13B	11.1	12.4	13.7	1.0	18.2	83.5	5.0
1.5KE15V	1.5KE15B	12.8	14.3	15.8	1.0	21.2	71.7	5.0
1.5KE16V	1.5KE16B	13.6	15.2	16.8	1.0	22.5	67.6	5.0
1.5KE18V	1.5KE18B	15.3	17.1	18.9	1.0	25.2	60.3	5.0
1.5KE20V	1.5KE20B	17.1	19.0	21.0	1.0	27.7	54.9	5.0
1.5KE22V	1.5KE22B	18.8	20.9	23.1	1.0	30.6	49.7	5.0
1.5KE24V	1.5KE24B	20.5	22.8	25.2	1.0	33.2	45.8	5.0
1.5KE27V	1.5KE27B	23.1	25.7	28.4	1.0	37.5	40.5	5.0
1.5KE30V	1.5KE30B	25.6	28.5	31.5	1.0	41.4	36.7	5.0
1.5KE33V	1.5KE33B	28.2	31.4	34.7	1.0	45.7	33.3	5.0
1.5KE36V	1.5KE36B	30.8	34.2	37.8	1.0	49.9	30.5	5.0
1.5KE39V	1.5KE39B	33.3	37.1	41.0	1.0	53.9	28.2	5.0
1.5KE43V	1.5KE43B	36.8	40.9	45.2	1.0	59.3	25.6	5.0
1.5KE47V	1.5KE47B	40.2	44.7	49.4	1.0	64.8	23.5	5.0
1.5KE51V	1.5KE51B	43.6	48.5	53.6	1.0	70.1	21.7	5.0
1.5KE56V	1.5KE56B	47.8	53.2	58.8	1.0	77.0	19.7	5.0
1.5KE62V	1.5KE62B	53.0	58.9	65.1	1.0	85.0	17.9	5.0
1.5KE68V	1.5KE68B	58.1	64.6	71.4	1.0	92.0	16.5	5.0
1.5KE75V	1.5KE75B	64.1	71.3	78.8	1.0	103	14.8	5.0
1.5KE82V	1.5KE82B	70.1	77.9	86.1	1.0	113	13.5	5.0
1.5KE91V	1.5KE91B	77.8	86.5	95.5	1.0	125	12.2	5.0
1.5KE100V	1.5KE100B	85.5	95.0	105	1.0	137	11.1	5.0
1.5KE110V	1.5KE110B	94.0	105	116	1.0	152	10.0	5.0
1.5KE120V	1.5KE120B	102	114	126	1.0	165	9.2	5.0
1.5KE130V	1.5KE130B	111	124	137	1.0	179	8.5	5.0

TYPE		Reverse Stand-Off Voltage	Breakdown Voltage @ I_T		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
(UNI)	(BI)	V_{RWM} (V)	$V_{BR MIN}(V)$	$V_{BR MAX}(V)$	I_T (mA)	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
1.5KE150V	1.5KE150B	128	143	158	1.0	207	7.3	5.0
1.5KE160V	1.5KE160B	136	152	168	1.0	219	6.9	5.0
1.5KE170V	1.5KE170B	145	162	179	1.0	234	6.5	5.0
1.5KE180V	1.5KE180B	154	171	189	1.0	246	6.2	5.0
1.5KE200V	1.5KE200B	171	190	210	1.0	274	5.5	5.0
1.5KE220V	1.5KE220B	185	209	231	1.0	328	4.6	5.0
1.5KE250V	1.5KE250B	214	237	263	1.0	344	4.4	5.0
1.5KE300V	1.5KE300B	256	285	315	1.0	414	3.7	5.0
1.5KE350V	1.5KE350B	300	333	368	1.0	482	3.2	5.0
1.5KE400V	1.5KE400B	342	380	420	1.0	548	2.8	5.0

Note: For bidirectional type V_R of 10 volts and less, the I_R limit is double.

For parts without A, the V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts.

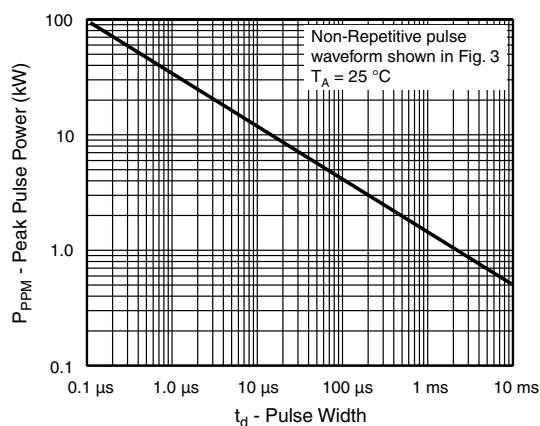


Fig. 1 - Peak Pulse Power Rating Curve

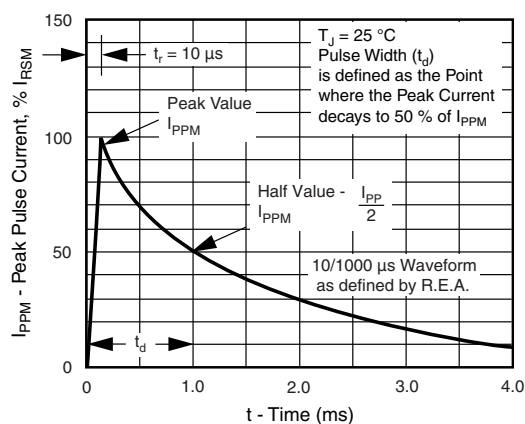


Fig. 2 - Pulse Waveform

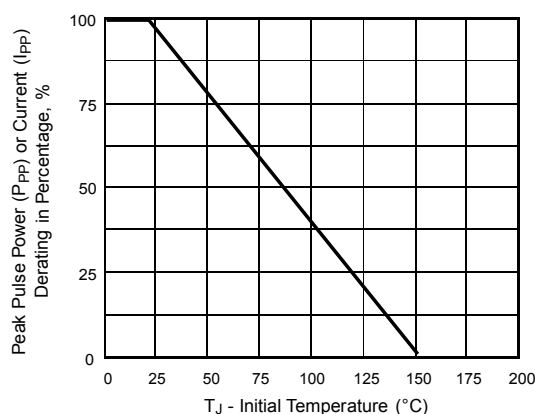


Fig. 3 - Pulse Power or Current vs. Initial Junction Temperature

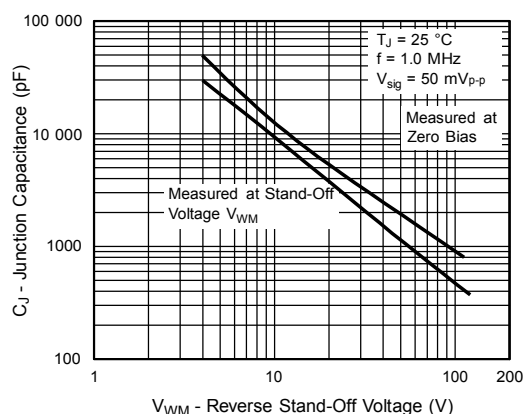


Fig. 4 - Typical Junction Capacitance

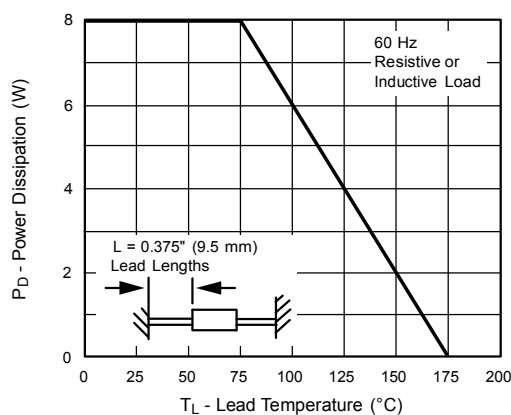


Fig. 5 - Power Derating Curve

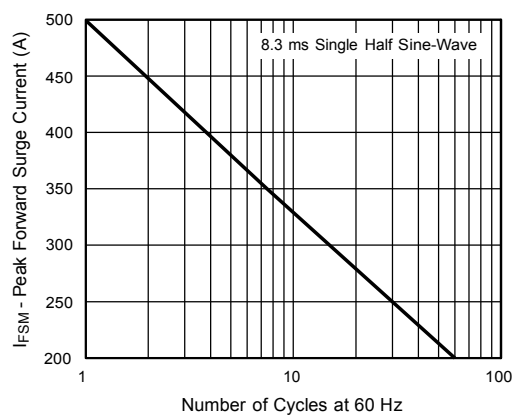
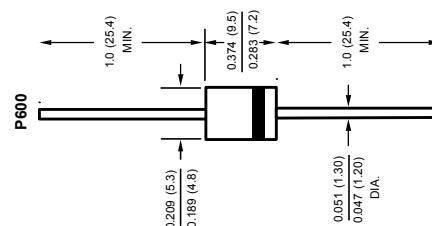


Fig. 6 - Maximum Non-Repetitive Forward Surge Current

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



APPLICATION NOTES

The 1.5KE series of high power transient voltage suppressors were designed to be used on the output of switching power supplies. These devices may be used to replace crowbar circuits. Both the 5 % and 10 % voltage tolerances are referenced to the power supply output voltage level.

They are able to withstand high levels of peak current while allowing a circuit breaker to trip or a fuse blow before

shorting. This will enable the user to reset the breaker or replace the fuse and continue operation. For this type operation, it is recommended that a sufficient mounting surface be used for dissipating the heat generated by the Transient Voltage Suppressor during the transient or over-voltage condition.

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
1.5KE	0.826	-	1000	13" diameter paper tape and reel