



600 Watt, Bi-Directional TVS Diode

Silicon Transient Voltage Suppressor diode in bare die form

Rev 1.0
25/11/25

Features:

- 600W peak pulse power dissipation
- Excellent clamping capabilities
- Low Leakage Current
- Metalized for Wire Bonding
- High Reliability tested grades.

Ordering Information

The following part suffixes apply:

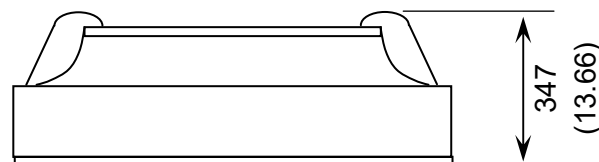
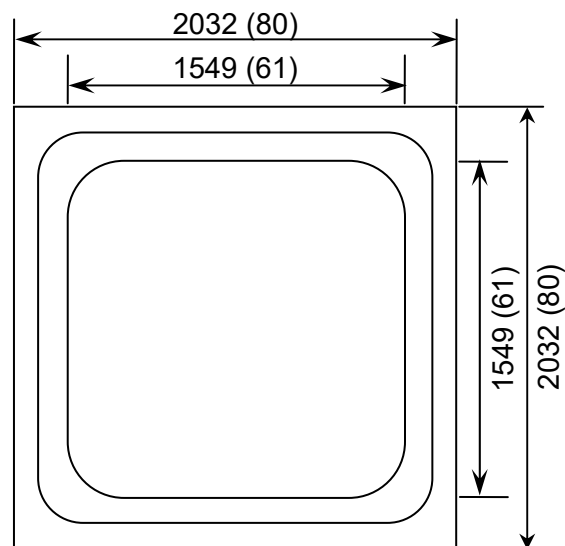
- No suffix - MIL-STD-750 /2073 Visual Inspection
- “H” - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class H LAT
- “K” - MIL-STD-750 /2072 Visual Inspection
+ MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

For further information on LAT process flows see below.

www.siliconsupplies.com/quality/bare-die-lot-qualification

Die Dimensions in μm (mils)



Supply Formats:

- Default – Die in Waffle Pack (100 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- With additional electrical selection – By specific request

Mechanical Specification

Die Size (Unsawn)	2032 x 2032 80 x 80	μm mils
Anode Pad Size	1524 x 1524 61 x 61	μm mils
Die Thickness	347 (± 17) 13.66 (± 0.66)	μm mils
Top Metal Composition	Al 6.5 μm	
Back Metal Composition	Ti/Ni/Ag 1.5 μm	





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Absolute Maximum Ratings $T_J = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation 10/1000 μs waveform ¹	P_{PP}	600	W
Peak forward surge current, 8.3ms single half sine-wave ²	I_{FSM}	100	A
ESD IEC61000-4-2 (Air) ³	V_{ESD}	$\pm 30\text{V}$	kV
ESD IEC61000-4-2 (Contact) ³			
Operating Temperature Range	T_J	-55 to +175	$^\circ\text{C}$
Storage Temperature Range	T_S	-65 to +200	$^\circ\text{C}$

1. Performance at die level dependent on assembly method and substrate choice. 2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum. 3. Tested in SMAF package.

Electrical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise stated

DEVICE ⁴	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE @ I_T		TEST CURRENT	MAX CLAMPING VOLTAGE V_C @ I_{PP}	PEAK PULSE CURRENT	REVERSE LEAKAGE I_R @ V_{RRM}
	V_{RRM}	$V_{BR(MIN)}$ (V)	$V_{BR(MAX)}$ (V)	I_T	V_C	I_{PP}	I_R
	V	V	V	mA	V	A	μA
P6KE6.8CA	5.8	6.45	7.14	10	10.5	58.1	1000
P6KE7.5CA	6.4	7.13	7.88	10	11.3	54	500
P6KE8.2CA	7.02	7.79	8.61	10	12.1	50.4	200
P6KE9.1CA	7.78	8.65	9.55	1	13.4	45.5	50
P6KE10CA	8.55	9.5	10.5	1	14.5	42.1	10
P6KE11CA	9.4	10.5	11.6	1	15.6	39.1	5
P6KE12CA	10.2	11.4	12.6	1	16.7	36.5	5
P6KE13CA	11.1	12.4	13.7	1	18.2	33.5	1
P6KE15CA	12.8	14.3	15.8	1	21.2	28.8	1
P6KE16CA	13.6	15.2	16.8	1	22.5	27.1	1
P6KE18CA	15.3	17.1	18.9	1	25.2	24.2	1
P6KE20CA	17.1	19	21	1	27.7	22	1
P6KE22CA	18.8	20.9	23.1	1	30.6	19.9	1
P6KE24CA	20.5	22.8	25.2	1	33.2	18.4	1
P6KE27CA	23.1	25.7	28.4	1	37.5	16.3	1
P6KE30CA	25.6	28.5	31.5	1	41.4	14.7	1
P6KE33CA	28.2	31.4	34.7	1	45.7	13.3	1
P6KE36CA	30.8	34.2	37.8	1	49.9	12.2	1
P6KE39CA	33.3	37.1	41	1	53.9	11.3	1
P6KE43CA	36.8	40.9	45.2	1	59.3	10.3	1





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	V_{RRM}	$V_{BR(MIN)}$ (V)	$V_{BR(MAX)}$ (V)	I_T	V_C	I_{PP}	I_R
	V	V	V	mA	V	A	μA
P6KE47CA	40.2	44.7	49.4	1	64.8	9.4	1
P6KE51CA	43.6	48.5	53.6	1	70.1	8.7	1
P6KE56CA	47.8	53.2	58.8	1	77	7.9	1
P6KE62CA	53	58.9	65.1	1	85	7.2	1
P6KE68CA	58.1	64.6	71.4	1	92	6.6	1
P6KE75CA	64.1	71.3	78.8	1	103	5.9	1
P6KE82CA	70.1	77.9	86.1	1	113	5.4	1
P6KE91CA	77.8	86.5	95.5	1	125	4.9	1
P6KE100CA	85.5	95	105	1	137	4.5	1
P6KE110CA	94	105	116	1	152	4	1
P6KE120CA	102	114	126	1	165	3.7	1
P6KE130CA	111	124	137	1	179	3.4	1
P6KE150CA	128	143	158	1	207	2.9	1
P6KE160CA	136	152	168	1	219	2.8	1
P6KE170CA	145	162	179	1	234	2.6	1
P6KE180CA	154	171	189	1	246	2.5	1
P6KE200CA	171	190	210	1	274	2.2	1
P6KE220CA	185	209	231	1	328	1.9	1

4. Suffix "A" denotes 5% tolerance of V_{BR}

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