

600W, 6.8V - 440V Transient Voltage Suppressor

FEATURES

- AEC-Q101 qualified available
- Excellent clamping capability
- Low dynamic impedance
- 600W surge capability at 10/1000µs waveform
- Fast response time: Typically less than 1.0ps from 0 volt to V_{BR} for unidirectional and 5.0ns for bidirectional
- Typical I_R less than 1µA above 10V
- UL recognized file # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

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- Protect sensitive circuit from damage by high voltage transients
- Lighting, ESD transient voltage protection of IC, system
- Inductive switching load protection of IC, system
- Electrical Fast Transient Immunity protection of IC, system

MECHANICAL DATA

- Case: : DO-204AC (DO-15)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- · Polarity: As marked
- Weight: 0.400g (approximately)

KEY PARAMETERS							
PARAMETER	VALUE	UNIT					
V _{WM}	5.5 - 376	V					
V _{BR} (uni - directional)	6.12 - 462	V					
V _{BR} (bi - directional)	6.12 - 462	V					
P _{PK}	600	W					
T_{JMAX}	175						
Package	DO-204AC (DO-15)						
Configuration Single die							





DO-204AC (DO-15)

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise noted)							
PARAMETER	SYMBOL	VALUE	UNIT				
Non-repetitive peak impulse power dissipation with 10/1000µs waveform ⁽¹⁾	P _{PK}	600	W				
Steady state power dissipation at T _A = 75°C lead lengths .375", 9.5mm ⁽²⁾	P _D	5	W				
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load for Uni-directional only ⁽³⁾	I _{FSM}	100	А				
Junction temperature	T _J	- 55 to +175	°C				
Storage temperature	T _{STG}	- 55 to +175	°C				

Notes:

- 1. Non-repetitive current pulse per Fig.3 and derated above $T_A = 25$ °C per Fig.2
- 2. Mounted on 5 x 5 mm copper pads to each terminal
- 3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Devices for Bipolar Applications

- 1. For bidirectional use C or CA suffix for types P6KE6.8 types P6KE440
- 2. Electrical characteristics apply in both directions



P6KE SERIES Taiwan Semiconductor

Number Voltage (V) Min Max Max	ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)								
P6KE6.8 P6KE6.8A P6KE6.8A P6KE6.8A P6KE6.8A P6KE7.5 P6KE7.5 P6KE7.5 P6KE7.5A P6KE7.5A P6KE8.2 P6KE8.2 P6KE8.2A P6KE8.1 P6KE9.1 P6KE9.1 P6KE9.1 P6KE9.1 P6KE9.1 P6KE10 P6KE10 P6KE10 P6KE11 P6KE11 P6KE11 P6KE12 P6KE12 P6KE13 P6KE13 P6KE13 P6KE13 P6KE13 P6KE13 P6KE13 P6KE13 P6KE15 P6KE16 P6KE18 P6KE20 P6KE20 P6KE20 P6KE20 P6KE20 P6KE24 P6KE24 P6KE24 P6KE24 P6KE24 P6KE30 P6KE33 P6KE34 P6KE35 P6KE35 P6KE35 P6KE35 P6KE35 P6KE35 P6KE35 P6KE35 P6KE36 P6KE	Test current I _T (mA)	Vol	Stand-Off Voltage V _{WM} (V)	Maximum Reverse Leakage I _D @ V _{wm}	Maximum Peak Surge Current I _{PP}	Maximum Clamping Voltage V _C @ I _{PPM}	Maximum Temperature Coefficient of V _{BR}		
P6KE6.8A 6.8 6.46 7.14 P6KE6V8A 6.8 6.46 7.14 P6KE7.5 7.5 6.75 8.25 P6KE7.5A 7.5 7.13 7.88 P6KE9.1A 9.1 8.19 9.02 P6KE9.1A 9.1 8.19 10.00 P6KE9.1A 9.1 8.65 9.55 P6KE10A 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE15 15 13.5 16.5 P6KE15A 15 14.3	` ′			(μΑ)	(A)	(V)	(%/°C)		
P6KE6V8A 6.8 6.46 7.14 P6KE7.5 7.5 6.75 8.25 P6KE7.5A 7.5 7.13 7.88 P6KE8.2 8.2 7.38 9.02 P6KE8.2A 8.2 7.79 8.61 P6KE9.1A 9.1 8.65 9.55 P6KE9.1A 9.1 8.65 9.55 P6KE10A 10 9.00 11.00 P6KE10A 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11A 11 10.5 11.6 P6KE11A 11 10.5 11.6 P6KE12A 12 10.8 13.2 P6KE13 13 11.7 14.3 P6KE13 13 11.7 14.3 P6KE15A 15 13.5 16.5 P6KE16A 16 14.4 17.6 P6KE18A 18 16.2 19.8 P6KE20 20 18.0 2	10	6	5.50	1000	58.0	10.8	0.057		
P6KEV8A P6KE7.5 P6KE7.5A P6KE7.5A P6KE7.5A P6KE8.2 P6KE8.2 P6KE8.2 P6KE8.2 P6KE8.2 P6KE8.2 P6KE8.2 P6KE9.1 P6KE10 P6KE10 P6KE10 P6KE10 P6KE10 P6KE11 P6KE11 P6KE11 P6KE12 P6KE12 P6KE12 P6KE13 P6KE13 P6KE13 P6KE13 P6KE13 P6KE15 P6KE15 P6KE15 P6KE16 P6KE16 P6KE16 P6KE16 P6KE16 P6KE16 P6KE16 P6KE16 P6KE18 P6KE16 P6KE18 P6KE18 P6KE18 P6KE20 P6KE30	10		5.80	1000	60.0	10.5	0.057		
P6KE7.5A 7.5 7.13 7.88 P6KE8.2 8.2 7.38 9.02 P6KE8.2A 8.2 7.79 8.61 P6KE8.1A 9.1 8.19 10.00 P6KE9.1A 9.1 8.65 9.55 P6KE9.1A 9.1 9.00 11.00 P6KE10A 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15A 15 13.5 16.5 P6KE15A 15 13.5 16.5 P6KE16A 16 14.4 17.6 P6KE16A 16 14.4 17.6 P6KE18A 18 17.1 18.9 P6KE20A 20 18.0 2	_	4							
P6KE7V5A 7.5 7.13 7.88 P6KE8.2 8.2 7.38 9.02 P6KE8.2A 8.2 7.79 8.61 P6KE9.1 9.1 8.19 10.00 P6KE9.1A 9.1 8.65 9.55 P6KE10 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15 15 13.5 16.5 P6KE15 15 13.5 16.5 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20A 20 19.0 21.0	10		6.05	500	53.0	11.7	0.061		
P6KE8.2 8.2 7.38 9.02 P6KE8.2A	10	_ 7	6.40	500	55.0	11.3	0.061		
P6KE8.2A 8.2 7.79 8.61 P6KE8V2A 9.1 8.19 10.00 P6KE9.1A 9.1 8.65 9.55 P6KE9V1A 9.1 8.65 9.55 P6KE10 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12A 12 10.8 13.2 P6KE13A 13 11.7 14.3 P6KE13A 13 11.7 14.3 P6KE15A 15 13.5 16.5 P6KE15A 15 13.5 16.5 P6KE16A 16 14.4 17.6 P6KE18A 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20A 20 19.0 21.0 P6KE2A 22 19.8 24.2 P6KE2A 24 21.6 26.4 </td <td>_</td> <td>١</td> <td></td> <td></td> <td></td> <td></td> <td></td>	_	١							
P6KE8V2A 8.2 7.79 8.61 P6KE9.1 9.1 8.19 10.00 P6KE9.1A 9.1 8.65 9.55 P6KE9V1A 10 9.00 11.00 P6KE10 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12 12 10.8 13.2 P6KE13A 13 11.7 14.3 P6KE13 13 11.7 14.3 P6KE15 15 13.5 16.5 P6KE16A 16 14.4 17.6 P6KE16A 16 14.4 17.6 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20A 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4	10		6.63	200	50.0	12.5	0.065		
P6KE9.1 P6KE9.1A 9.1 8.19 10.00 P6KE9.1A P6KE9V1A 9.1 8.65 9.55 P6KE10 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE12A 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13A 13 11.7 14.3 P6KE15A 15 13.5 16.5 P6KE16A 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4 P6KE27A 27 24.3 29.7 P6KE30A 30 27.0	10	×	7.02	200	52.0	12.1	0.065		
P6KE9.1A 9.1 8.65 9.55 P6KE9V1A 10 9.00 11.00 P6KE10 10 9.50 10.5 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13A 13 11.7 14.3 P6KE13 13 11.7 14.3 P6KE15 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18 18 17.1 18.9 P6KE21A 18 17.1 18.9 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 </td <td>4</td> <td></td> <td>7.07</td> <td>F0</td> <td>45.0</td> <td>42.0</td> <td>0.060</td>	4		7.07	F0	45.0	42.0	0.060		
P6KE9V1A 9.1 8.65 9.55 P6KE10 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12A 12 10.8 13.2 P6KE13A 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15A 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16A 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE22A 22 29.9 23.1 P6KE24A 24 21.6 26.4	1		7.37	50	45.0	13.8	0.068		
P6KE10 10 9.00 11.00 P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16A 16 14.4 17.6 P6KE18A 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22A 22 19.8 24.2 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27 27 24.3 29.7 <td>1</td> <td></td> <td>7.78</td> <td>50</td> <td>47.0</td> <td>13.4</td> <td>0.068</td>	1		7.78	50	47.0	13.4	0.068		
P6KE10A 10 9.50 10.5 P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16A 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22A 22 19.8 24.2 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE30A 30 28.5 31.5 <td>1</td> <td></td> <td>8.10</td> <td>10</td> <td>42.0</td> <td>15.0</td> <td>0.073</td>	1		8.10	10	42.0	15.0	0.073		
P6KE11 11 9.90 12.1 P6KE11A 11 10.5 11.6 P6KE12 12 10.8 13.2 P6KE13A 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4 P6KE27A 27 24.3 29.7 P6KE30A 30 27.0 33.0 P6KE33A 30 28.5 31.5 <td>1</td> <td></td> <td>8.55</td> <td>10</td> <td>43.0</td> <td>14.5</td> <td>0.073</td>	1		8.55	10	43.0	14.5	0.073		
P6KE11A 11 10.5 11.6 P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE15A 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16A 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE22A 22 19.8 24.2 P6KE24A 24 21.6 26.4 P6KE27A 27 24.3 29.7 P6KE30A 30 28.5 31.5 </td <td>1</td> <td></td> <td>8.92</td> <td>10</td> <td>38.0</td> <td>16.2</td> <td>0.073</td>	1		8.92	10	38.0	16.2	0.073		
P6KE12 12 10.8 13.2 P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE15A 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16A 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27A 27 24.3 29.7 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE33A 33 29.7 36.3 <td>1</td> <td></td> <td>9.40</td> <td>1</td> <td>40.0</td> <td>15.6</td> <td>0.075</td>	1		9.40	1	40.0	15.6	0.075		
P6KE12A 12 11.4 12.6 P6KE13 13 11.7 14.3 P6KE15A 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16A 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22A 22 19.8 24.2 P6KE22A 22 19.8 24.2 P6KE2A 22 19.8 24.2 P6KE2A 22 20.9 23.1 P6KE2A 24 21.6 26.4 P6KE2A 24 21.6 26.4 P6KE2A 27 24.3 29.7 P6KE3O 30 27.0 33.0 P6KE3OA 30 28.5 31.5	1		9.40	1	36.0	17.3	0.078		
P6KE13 13 11.7 14.3 P6KE13A 13 12.4 13.7 P6KE15 15 13.5 16.5 P6KE15A 15 14.3 15.8 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE22A 22 20.9 23.1 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3	1		10.2	1	37.0	16.7	0.078		
P6KE13A 13 12.4 13.7 P6KE15 15 13.5 16.5 P6KE16A 15 14.3 15.8 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE22A 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27A 27 24.3 29.7 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 <td>1</td> <td></td> <td>10.5</td> <td><u>'</u> 1</td> <td>33.0</td> <td>19.0</td> <td>0.070</td>	1		10.5	<u>'</u> 1	33.0	19.0	0.070		
P6KE15 15 13.5 16.5 P6KE16A 15 14.3 15.8 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 <td>1</td> <td></td> <td>11.1</td> <td>1</td> <td>34.0</td> <td>18.2</td> <td>0.081</td>	1		11.1	1	34.0	18.2	0.081		
P6KE15A 15 14.3 15.8 P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22A 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4 P6KE27A 27 24.3 29.7 P6KE30A 30 27.0 33.0 P6KE30A 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE33A 33 29.7 36.3 P6KE33 33 29.7 36.3 P6KE36A 36 32.4 39.6 P6KE39A 39 35.1 42.9 </td <td>1</td> <td></td> <td>12.1</td> <td><u> </u></td> <td>28.0</td> <td>22.0</td> <td>0.084</td>	1		12.1	<u> </u>	28.0	22.0	0.084		
P6KE16 16 14.4 17.6 P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE22A 22 20.9 23.1 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4 P6KE27A 27 24.3 29.7 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33 33 31.4 34.7 P6KE36A 36 32.4 39.6 P6KE39A 39 35.1 42.9 <td>1</td> <td>_</td> <td>12.8</td> <td>1</td> <td>29.0</td> <td>21.2</td> <td>0.084</td>	1	_	12.8	1	29.0	21.2	0.084		
P6KE16A 16 15.2 16.8 P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 20 19.0 21.0 P6KE22 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27A 27 24.3 29.7 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE33A 33 29.7 36.3 P6KE33 33 29.7 36.3 P6KE36A 36 32.4 39.6 P6KE39A 39 35.1 42.9 <td>1</td> <td></td> <td>12.9</td> <td>1</td> <td>26.0</td> <td>23.5</td> <td>0.086</td>	1		12.9	1	26.0	23.5	0.086		
P6KE18 18 16.2 19.8 P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE20A 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27A 27 24.3 29.7 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36A 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39A 39 35.1 42.9 P6KE43A 43 38.7 47.3 P6KE44A 47 42.3 51.7 </td <td>1</td> <td>_</td> <td>13.6</td> <td> 1</td> <td>28.0</td> <td>22.5</td> <td>0.086</td>	1	_	13.6	 1	28.0	22.5	0.086		
P6KE18A 18 17.1 18.9 P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27A 27 24.3 29.7 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE43 43 38.7 47.3 P6KE43A 43 38.7 47.3 P6KE47A 47 42.3 51.7	1		14.5	1	23.0	26.5	0.088		
P6KE20 20 18.0 22.0 P6KE20A 20 19.0 21.0 P6KE22 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24A 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27 27 24.3 29.7 P6KE30A 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39A 39 35.1 42.9 P6KE43 43 38.7 47.3 P6KE43A 43 38.7 47.3 P6KE47A 47 42.3 51.7 P6KE51A 51 45.9 56.1 <td>1</td> <td></td> <td>15.3</td> <td>1</td> <td>25.0</td> <td>25.2</td> <td>0.088</td>	1		15.3	1	25.0	25.2	0.088		
P6KE20A 20 19.0 21.0 P6KE22 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27 27 24.3 29.7 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33A 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36A 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39A 39 35.1 42.9 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 <td>1</td> <td>_</td> <td>16.2</td> <td>1</td> <td>21.0</td> <td>29.1</td> <td>0.090</td>	1	_	16.2	1	21.0	29.1	0.090		
P6KE22 22 19.8 24.2 P6KE22A 22 20.9 23.1 P6KE24 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27 27 24.3 29.7 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36A 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39A 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 P6KE51A 51 45.9 56.1 <td>1</td> <td></td> <td>17.1</td> <td><u>.</u> 1</td> <td>22.0</td> <td>27.7</td> <td>0.090</td>	1		17.1	<u>.</u> 1	22.0	27.7	0.090		
P6KE22A 22 20.9 23.1 P6KE24 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27 27 24.3 29.7 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE33A 33 29.7 36.3 P6KE33 33 29.7 36.3 P6KE36A 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39A 39 35.1 42.9 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56A 56 50.4 61.6 P6KE56A 56 53.2 58.8 <td>1</td> <td></td> <td>17.8</td> <td>1</td> <td>19.0</td> <td>31.9</td> <td>0.092</td>	1		17.8	1	19.0	31.9	0.092		
P6KE24 24 21.6 26.4 P6KE24A 24 22.8 25.2 P6KE27 27 24.3 29.7 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33 33 29.7 36.3 P6KE36A 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6	1	_	18.8	1	20.0	30.6	0.092		
P6KE27 27 24.3 29.7 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1		19.4	1	18.0	34.7	0.094		
P6KE27 27 24.3 29.7 P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8 <	1		20.5	1	19.0	33.2	0.094		
P6KE27A 27 25.7 28.4 P6KE30 30 27.0 33.0 P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1		21.8	1	16.0	39.1	0.096		
P6KE30A 30 28.5 31.5 P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56A 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	2	23.1	1	16.8	37.5	0.096		
P6KE30A 30 28.5 31.5 P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47A 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	24.3	1	14.0	43.5	0.097		
P6KE33 33 29.7 36.3 P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	25.6	1	15.0	41.4	0.097		
P6KE33A 33 31.4 34.7 P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	25.6	1	15.0	41.4	0.097		
P6KE36 36 32.4 39.6 P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	26.8	1	13.0	47.7	0.098		
P6KE36A 36 34.2 37.8 P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	28.2	1	13.8	45.7	0.098		
P6KE39 39 35.1 42.9 P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	29.1	1	12.0	52.0	0.099		
P6KE39A 39 37.1 41.0 P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	30.8	1	12.6	49.9	0.099		
P6KE43 43 38.7 47.3 P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	31.6	1	11.1	56.4	0.100		
P6KE43A 43 40.9 45.2 P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	3	33.3	1	11.6	53.9	0.100		
P6KE47 47 42.3 51.7 P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	4	34.8	1	10.0	61.9	0.101		
P6KE47A 47 44.7 49.4 P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1		36.8	1	10.6	59.3	0.101		
P6KE51 51 45.9 56.1 P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1	_	38.1	1	9.2	67.8	0.101		
P6KE51A 51 48.5 53.6 P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1		40.2	1	9.7	64.8	0.101		
P6KE56 56 50.4 61.6 P6KE56A 56 53.2 58.8	1		41.3	1	8.5	73.5	0.102		
P6KE56A 56 53.2 58.8	1		43.6	1	8.9	70.1	0.102		
	1		45.4	1	7.8	80.5	0.103		
DOL/EGO SO SEE S SO S	1		47.8	11	8.1	77.0	0.103		
P6KE62 62 55.8 68.2	1		50.2	1	7.0	89.0	0.104		
P6KE62A 62 58.9 65.1 P6KE68 68 61.2 74.8	1		53.0 55.1	1	7.4 6.4	85.0 98.0	0.104 0.104		



P6KE SERIES Taiwan Semiconductor

Part Number	Nominal Voltage	Breakdown Voltage V _{BR} (V)		Test Current I _T	Stand-Off Voltage V _{wm}	Maximum Reverse Leakage	Maximum Peak Surge Current I _{PP}	Maximum Clamping Voltage	Maximum Temperature Coefficient of
	(V)	Min	Max	(mA)	(V)	I _D @ V _{WM} (μΑ)	(A)	V _C @ I _{PPM} (V)	V _{BR} (%/°C)
P6KE68A	68	64.6	71.4	1	58.1	1	6.8	92.0	0.104
P6KE75	75	67.5	82.5	1	60.7	1	5.8	108	0.105
P6KE75A	75	71.3	78.8	1	64.1	1	6.1	103	0.105
P6KE82	82	73.8	90.2	1	66.4	1	5.3	118	0.105
P6KE82A	82	77.9	86.1	1	70.1	1	5.5	113	0.105
P6KE91	91	81.9	100	1	73.7	1	4.8	131	0.106
P6KE91A	91	86.5	95.5	1	77.8	1	5.0	125	0.106
P6KE100	100	90	110	1	81.0	1	4.3	144	0.106
P6KE100A	100	95	105	1	85.5	1	4.5	137	0.106
P6KE110	110	99	121	1	89.2	1	3.9	158	0.107
P6KE110A	110	105	116	1	94.0	1	4.1	152	0.107
P6KE120	120	108	132	1	97.2	1	3.6	173	0.107
P6KE120A	120	114	126	1	102	1	3.8	165	0.107
P6KE130	130	117	143	1	105	1	3.3	187	0.107
P6KE130A	130	124	137	1	111	1	3.5	179	0.107
P6KE150	150	135	165	1	121	1	2.9	215	0.108
P6KE150A	150	143	158	1	128	1	3.0	207	0.108
P6KE160	160	144	176	1	130	1	2.7	230	0.108
P6KE160A	160	152	168	1	136	1	2.8	219	0.108
P6KE170	170	153	187	1	138	1	2.5	244	0.108
P6KE170A	170	162	179	1	145	1	2.6	234	0.108
P6KE180	180	162	198	1	146	1	2.4	258	0.108
P6KE180A	180	171	189	1	154	1	2.5	246	0.108
P6KE200	200	180	220	1	162	1	2.1	287	0.108
P6KE200A	200	190	210	1	171	1	2.2	274	0.108
P6KE220	220	198	242	1	175	1	1.8	344	0.108
P6KE220A	220	209	231	1	185	1	1.9	328	0.108
P6KE250	250	225	275	1	202	1	1.7	360	0.110
P6KE250A	250	237	263	1	214	1	1.8	344	0.110
P6KE300	300	270	330	1	243	1	1.4	430	0.110
P6KE300A	300	285	315	1	256	1	1.5	414	0.110
P6KE350	350	315	385	1	284	1	1.2	504	0.110
P6KE350A	350	332	368	1	300	1	1.3	482	0.110
P6KE400	400	360	440	1	324	1	1.0	574	0.110
P6KE400A	400	380	420	1	342	1	1.1	548	0.110
P6KE440	440	396	484	1	356	1	1.0	631	0.110
P6KE440A	440	418	462	1	376	<u>.</u> 1	1.04	602	0.110

Notes:

- 1. V_{BR} measure after I_T applied for 300 μ s, I_T = square wave pulse or equivalent.
- 2. Surge current waveform per Fig.3 and derate per Fig.2
- 3. For bipolar types having V_{WM} of 10 volts and under, the I_{D} limit is doubled.
- All terms and symbols are consistent with ANSI/IEEE C62.35



P6KE SERIES Taiwan Semiconductor

RDERING INFORMATION						
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING				
P6KEx	DO-204AC (DO-15)	3,500 / Tape & Reel				
P6KEx A0G	DO-204AC (DO-15)	1,500 / Ammo box				
P6KExH	DO-204AC (DO-15)	3,500 / Tape & Reel				
P6KExHA0G	DO-204AC (DO-15)	1,500 / Ammo box				

Notes:

- "x" defines voltage from 6.8V(P6KE6.8) to 440V(P6KE440) 1.
- "H" means AEC-Q101 qualified (excluding P6KE6V8A P6KE9V1A product)



CHARACTERISTICS CURVES

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

Fig.1 Peak Pulse Power Rating Curve

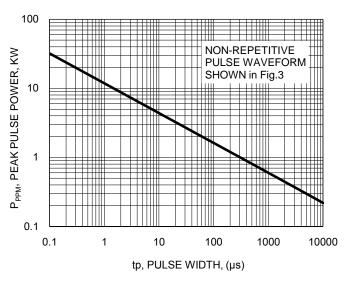


Fig.2 Pulse Derating Curve

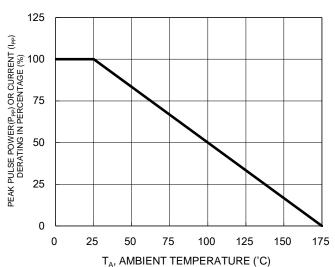


Fig.3 Clamping Power Pulse Waveform

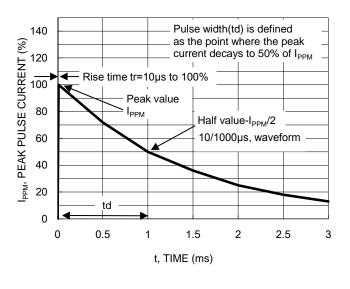
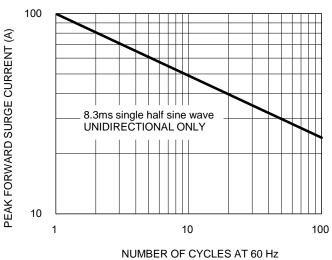


Fig.4 Maximum Non-Repetitive Forward Surge Current

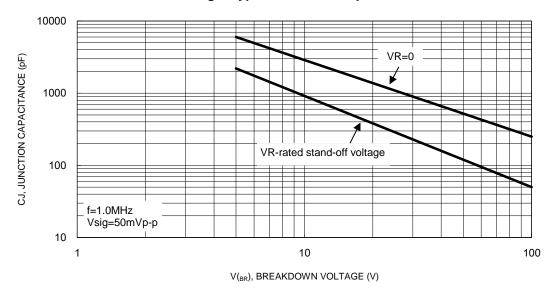




CHARACTERISTICS CURVES

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

Fig.5 Typical Junction Capacitance

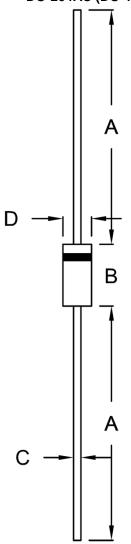






PACKAGE OUTLINE DIMENSIONS

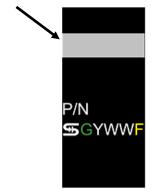




DIM.	Unit	(mm)	Unit (inch)		
Dilvi.	Min.	Max.	Min.	Max.	
А	25.40	-	1.000	-	
В	5.80	7.60	0.228	0.299	
С	0.70	0.90	0.028	0.035	
D	2.60	3.60	0.102	0.142	

MARKING DIAGRAM

Cathode band for uni-directional products only



P/N = Marking Code = Green Compound G

= Date Code YWW F = Factory Code



Taiwan Semiconductor

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