



## P6SMB

TVS DIODE

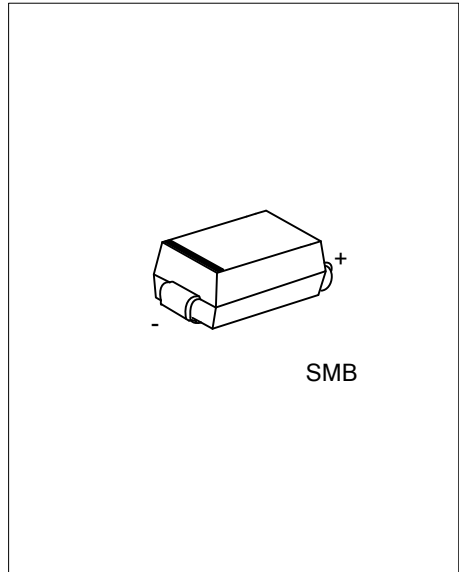
### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

#### DESCRIPTION

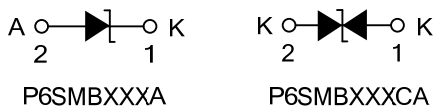
The UTC **P6SMB** is a surface mount transient voltage suppressors, it uses UTC's advanced technology to provide customers with low leakage and very fast response time, etc.

#### FEATURES

- \* Glass passivated chip
- \* 600W peak pulse power capability with a 10/1000s waveform, repetitive rate (duty cycle): 0.01 %
- \* Low leakage
- \* Uni and Bidirectional unit
- \* Excellent clamping capability
- \* Very fast response time



#### SYMBOL



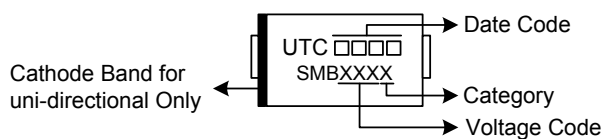
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
P6SMBXXXAL-SMB-R	P6SMBXXXAG-SMB-R	SMB	K	A	Tape Reel
P6SMBXXXCAL-SMB-R	P6SMBXXXCAG-SMB-R	SMB	K	K	Tape Reel

Note: Pin Assignment: K: Cathode A: Anode

<p>P6SMBXXXXXG-SMB-R</p>	<p>(1) R: Tape Reel</p> <p>(2) SMB: SMB</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p> <p>(4) A: Uni-directional, CA: Bi-directional</p> <p>(5) XXX: refer to ELECTRICAL CHARACTERISTICS</p>
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#### MARKING



Note: Category, Voltage Code: refer to ELECTRICAL CHARACTERISTICS

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

PARAMETER	SYMBOL	RATINGS	UNIT
Peak Power Dissipation with a 10/1000 $\mu\text{s}$ Waveform (Note 2)	$P_{PP}$	600	W
Peak Pulse Current with a 10/1000 $\mu\text{s}$ Waveform (Note 2)	$I_{PP}$	See ELECTRICAL CHARACTERISTICS Table	A
Power Dissipation On Infinite Heatsink at $T_L = 75^{\circ}\text{C}$	$P_D$	5.0	W
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Unidirectional Only (Note 3)	$I_{FSM}$	100	A
Maximum Instantaneous Forward Voltage at 50 A for Unidirectional Only (Note 4)	$V_F$	3.5/5.0	V
Operating Junction Temperature	$T_J$	-55 ~ +150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Non-repetitive current pulse and derated above  $T_A=25^{\circ}\text{C}$

3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

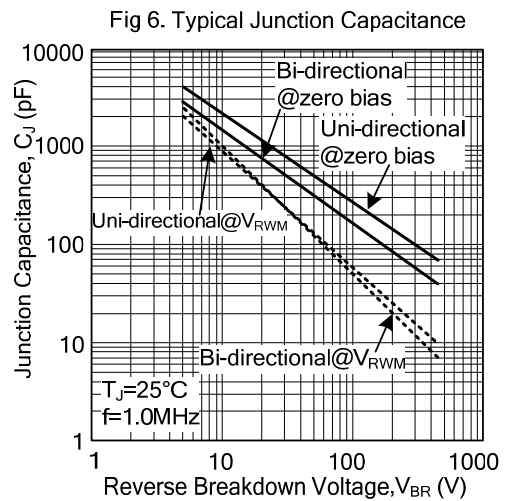
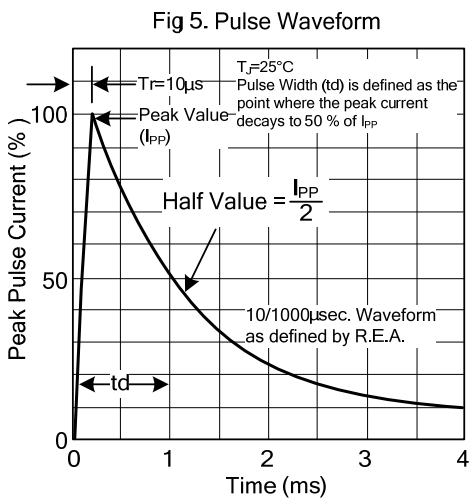
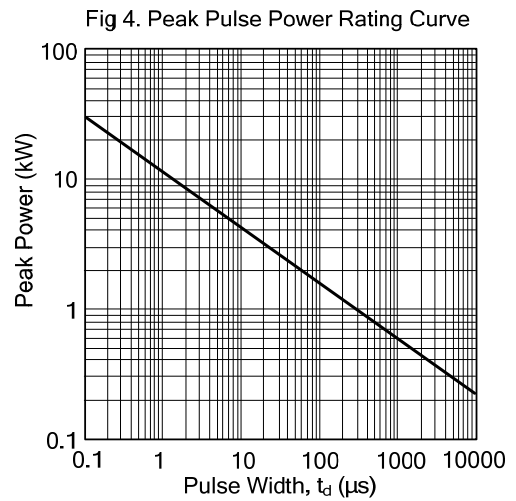
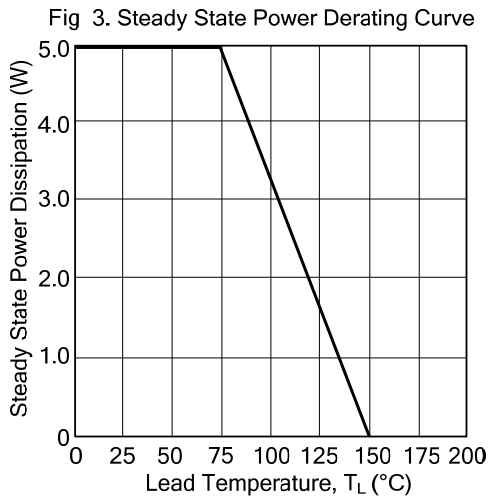
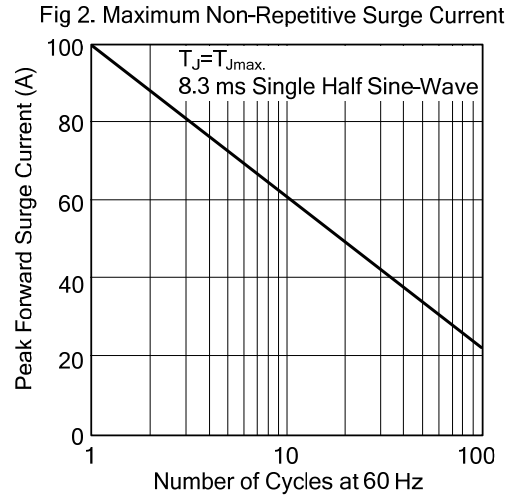
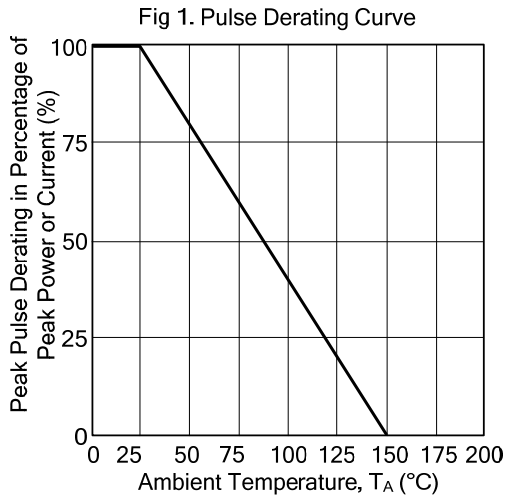
PART NUMBER (Uni)	PART NUMBER (Bi)	Device Marking Code		BREAKDOWN VOLTAGE $V_{BR}$ @ $I_T$			MAXIMUM REVERSE LEAKAGE $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	WORKING PEAK REVERSE VOLTAGE $V_{RWM}$ (V)	MAXIMUM REVERSE SURGE CURRENT $I_{PP}$ (A)	MAXIMUM CLAMPING VOLTAGE $V_C$ @ $I_{PP}$ (V)
		Uni	Bi	MIN (V)	MAX (V)	$I_T$ (mA)				
P6SMB6V8A	P6SMB6V8CA	6V8A	6V8C	6.46	7.14	10	1000	5.8	57.14	10.5
P6SMB7V5A	P6SMB7V5CA	7V5A	7V5C	7.13	7.88	10	500	6.4	53.10	11.3
P6SMB8V2A	P6SMB8V2CA	8V2A	8V2C	7.79	8.61	10	200	7.0	49.59	12.1
P6SMB9V1A	P6SMB9V1CA	9V1A	9V1C	8.65	9.56	1	50	7.8	44.78	13.4
P6SMB10A	P6SMB10CA	10A	10C	9.50	10.50	1	10	8.6	41.38	14.5
P6SMB11A	P6SMB11CA	11A	11C	10.45	11.55	1	5	9.4	38.46	15.6
P6SMB12A	P6SMB12CA	12A	12C	11.40	12.60	1	5	10.2	35.93	16.7
P6SMB13A	P6SMB13CA	13A	13C	12.35	13.65	1	1	11.1	32.97	18.2
P6SMB15A	P6SMB15CA	15A	15C	14.25	15.75	1	1	12.8	28.30	21.2
P6SMB16A	P6SMB16CA	16A	16C	15.20	16.80	1	1	13.6	26.67	22.5
P6SMB18A	P6SMB18CA	18A	18C	17.10	18.90	1	1	15.3	23.81	25.2
P6SMB20A	P6SMB20CA	20A	20C	19.00	21.00	1	1	17.1	21.66	27.7
P6SMB22A	P6SMB22CA	22A	22C	20.90	23.10	1	1	18.8	19.61	30.6
P6SMB24A	P6SMB24CA	24A	24C	22.80	25.20	1	1	20.5	18.07	33.2
P6SMB27A	P6SMB27CA	27A	27C	25.65	28.35	1	1	23.1	16.00	37.5
P6SMB30A	P6SMB30CA	30A	30C	28.50	31.50	1	1	25.6	14.49	41.4
P6SMB33A	P6SMB33CA	33A	33C	31.35	34.65	1	1	28.2	13.13	45.7
P6SMB36A	P6SMB36CA	36A	36C	34.20	37.80	1	1	30.8	12.02	49.9
P6SMB39A	P6SMB39CA	39A	39C	37.05	40.95	1	1	33.3	11.13	53.9
P6SMB43A	P6SMB43CA	43A	43C	40.85	45.15	1	1	36.8	10.12	59.3
P6SMB47A	P6SMB47CA	47A	47C	44.65	49.35	1	1	40.2	9.26	64.8
P6SMB51A	P6SMB51CA	51A	51C	48.45	53.55	1	1	43.6	8.56	70.1
P6SMB56A	P6SMB56CA	56A	56C	53.20	58.80	1	1	47.8	7.79	77.0
P6SMB62A	P6SMB62CA	62A	62C	58.90	65.10	1	1	53.0	7.06	85.0
P6SMB68A	P6SMB68CA	68A	68C	64.60	71.40	1	1	58.1	6.52	92.0
P6SMB75A	P6SMB75CA	75A	75C	71.25	78.75	1	1	64.1	5.83	103.0
P6SMB82A	P6SMB82CA	82A	82C	77.90	86.10	1	1	70.1	5.31	113.0
P6SMB91A	P6SMB91CA	91A	91C	86.45	95.55	1	1	77.8	4.80	125.0

## ■ ELECTRICAL CHARACTERISTICS (Cont.)

PART NUMBER (Uni)	PART NUMBER (Bi)	Device Marking Code		BREAKDOWN VOLTAGE $V_{BR}$ @ $I_T$			MAXIMUM REVERSE LEAKAGE $I_R$ @ $V_{RWM}$ ( $\mu A$ )	WORKING PEAK REVERSE VOLTAGE $V_{RWM}$ (V)	MAXIMUM REVERSE SURGE CURRENT $I_{PP}$ (A)	MAXIMUM CLAMPING VOLTAGE $V_C$ @ $I_{PP}$ (V)
		Uni	Bi	MIN (V)	MAX (V)	$I_T$ (mA)				
P6SMB100A	P6SMB100CA	100A	100C	95.00	105.00	1	1	85.5	4.38	137.0
P6SMB110A	P6SMB110CA	110A	110C	104.50	115.50	1	1	94.0	3.95	152.0
P6SMB120A	P6SMB120CA	120A	120C	114.00	126.00	1	1	102.0	3.64	165.0
P6SMB130A	P6SMB130CA	130A	130C	123.50	136.50	1	1	111.0	3.35	179.0
P6SMB150A	P6SMB150CA	150A	150C	142.50	157.50	1	1	128.0	2.90	207.0
P6SMB160A	P6SMB160CA	160A	160C	152.00	168.00	1	1	136.0	2.74	219.0
P6SMB170A	P6SMB170CA	170A	170C	161.50	178.50	1	1	145.0	2.56	234.0
P6SMB180A	P6SMB180CA	180A	180C	171.00	189.00	1	1	154.0	2.44	246.0
P6SMB200A	P6SMB200CA	200A	200C	190.00	210.00	1	1	171.0	2.19	274.0
P6SMB220A	P6SMB220CA	220A	220C	209.00	231.00	1	1	185.0	1.83	328.0
P6SMB250A	P6SMB250CA	250A	250C	237.50	262.50	1	1	214.0	1.74	344.0
P6SMB300A	P6SMB300CA	300A	300C	285.00	315.00	1	1	256.0	1.45	414.0
P6SMB350A	P6SMB350CA	350A	350C	332.50	367.50	1	1	299.3	1.24	482.0
P6SMB380A	P6SMB380CA	380A	380C	361.00	399.00	1	1	324.9	1.14	524.4
P6SMB400A	P6SMB400CA	400A	400C	380.00	420.00	1	1	342.0	1.09	548.0
P6SMB440A	P6SMB440CA	440A	440C	418.00	462.00	1	1	376.2	0.99	607.2
P6SMB500A	P6SMB500CA	500A	500C	475.00	525.00	1	1	427.5	0.87	690.0
P6SMB520A	P6SMB520CA	520A	520C	494.00	546.00	1	1	444.6	0.84	717.6
P6SMB550A	P6SMB550CA	550A	550C	522.50	577.50	1	1	470.3	0.79	759.0
P6SMB600A	P6SMB600CA	600A	600C	570.00	630.00	1	1	513.0	0.72	828.0

- Notes: 1. The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available.  
 2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.  
 3. For Bi-Directional devices having VR of 10 volts and under, the IR limit is double.

■ TYPICAL CHARACTERISTICS



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