

## FEATURES

- \* For surface mount application
- \* Built-in strain relief
- \* Excellent clamping capability
- \* Low profile package
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_R$  less than 1 A above 10V
- \* High temperature soldering guaranteed: 260°C / 10 seconds at terminals

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end except Bidirectional
- \* Mounting position: Any



- "GK" represents the brand name
- "XXX" represents the periodic code
- "YY" represents the product type marking

## VOLTAGE RANGE

6.8 to 600 Volts

400 Watts Peak Power

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

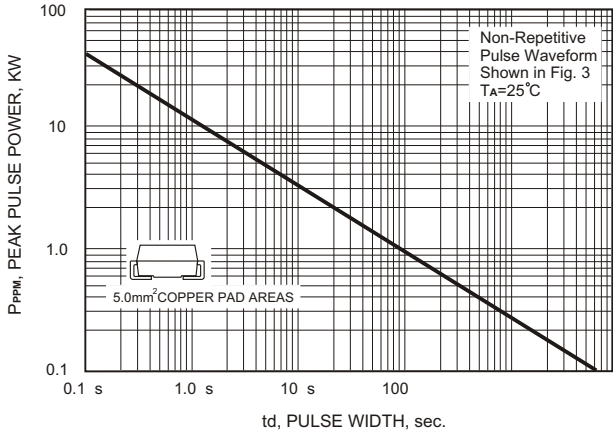
RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (NOTE 1)	$P_{PK}$	Minimum 400	Watts
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	40	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional only	$V_F$	3.5	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

### NOTES:

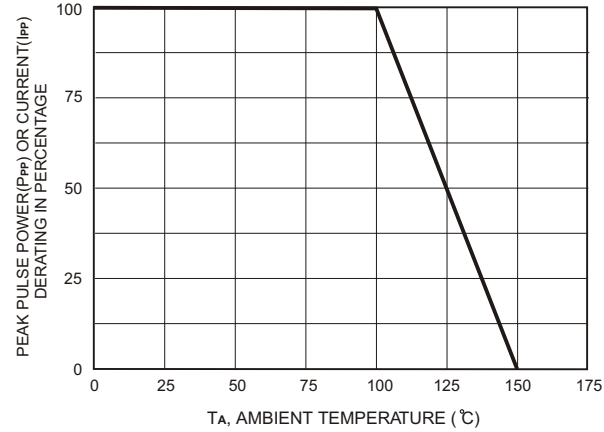
1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2.
2. Mounted on Copper Pad area of 5.0mm<sup>2</sup>(.013mm Thick) to each terminal.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

**RATING AND CHARACTERISTIC CURVES**

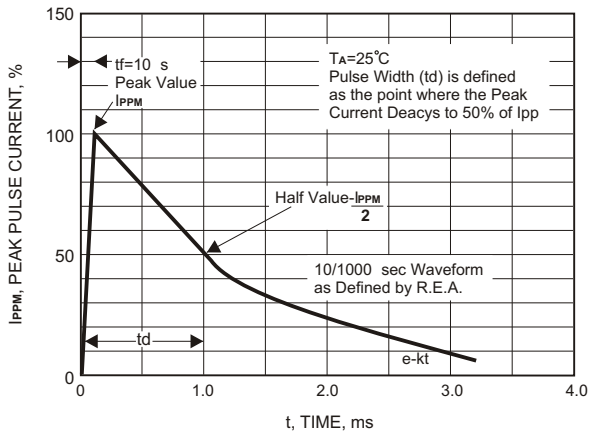
**FIG.1-PEAK PULSE POWER DERATING CURVE**



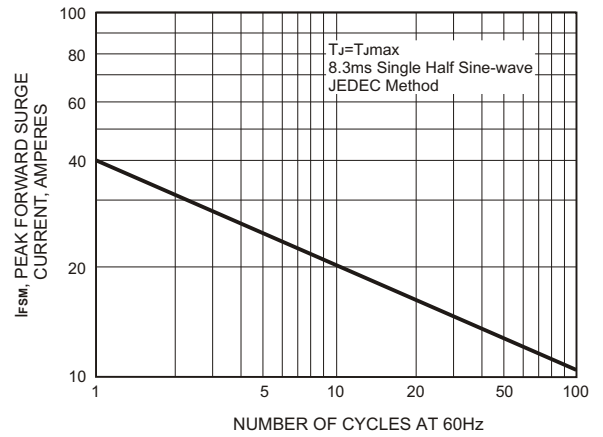
**FIG.2-PULSE DERATING CURVE**



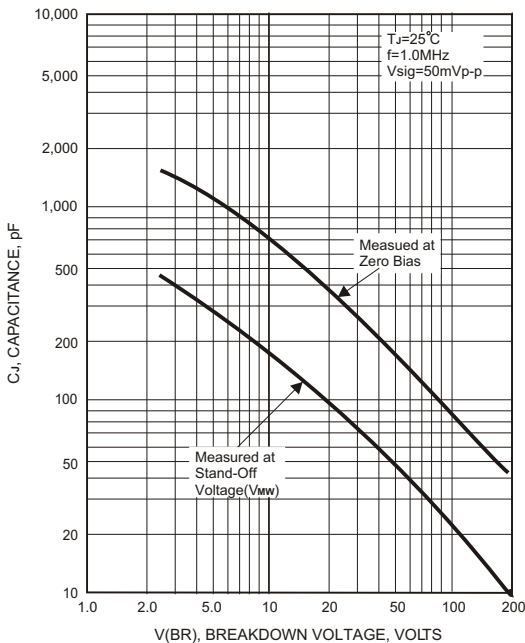
**FIG.3-PULSE WAVE FORM**



**FIG.4 MAXIMUM NON REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**



Part Number		Working Peak Reverse Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}@I_T$		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_c$ @ $I_{PP}$ (V)	Maximum Reverse Surge Current IPP (A)	Maximum Reverse Leakage $I_{R@}$ $V_{RWM}$ ( $\mu$ A)
Uni	Bi		Min(V)	Max (V)				
P4SMA6.8A	P4SMA6.8CA	5.8	6.46	7.14	10	10.5	38.10	1000
P4SMA7.5A	P4SMA7.5CA	6.4	7.13	7.88	10	11.3	35.40	500
P4SMA8.2A	P4SMA8.2CA	7.0	7.79	8.61	10	12.1	33.06	200
P4SMA9.1A	P4SMA9.1CA	7.8	8.65	9.56	1	13.4	29.85	50
P4SMA10A	P4SMA10CA	8.6	9.50	10.50	1	14.5	27.59	10
P4SMA11A	P4SMA11CA	9.4	10.45	11.55	1	15.6	25.64	5
P4SMA12A	P4SMA12CA	10.2	11.40	12.60	1	16.7	23.95	5
P4SMA13A	P4SMA13CA	11.1	12.35	13.65	1	18.2	21.98	1
P4SMA15A	P4SMA15CA	12.8	14.25	15.75	1	21.2	18.87	1
P4SMA16A	P4SMA16CA	13.6	15.20	16.80	1	22.5	17.78	1
P4SMA18A	P4SMA18CA	15.3	17.10	18.90	1	25.2	15.87	1
P4SMA20A	P4SMA20CA	17.1	19.00	21.00	1	27.7	14.44	1
P4SMA22A	P4SMA22CA	18.8	20.90	23.10	1	30.6	13.07	1
P4SMA24A	P4SMA24CA	20.5	22.80	25.20	1	33.2	12.05	1
P4SMA27A	P4SMA27CA	23.1	25.65	28.35	1	37.5	10.67	1
P4SMA30A	P4SMA30CA	25.6	28.50	31.50	1	41.4	9.66	1
P4SMA33A	P4SMA33CA	28.2	31.35	34.65	1	45.7	8.75	1
P4SMA36A	P4SMA36CA	30.8	34.20	37.80	1	49.9	8.02	1
P4SMA39A	P4SMA39CA	33.3	37.05	40.95	1	53.9	7.42	1
P4SMA43A	P4SMA43CA	36.8	40.85	45.15	1	59.3	6.75	1
P4SMA47A	P4SMA47CA	40.2	44.65	49.35	1	64.8	6.17	1
P4SMA51A	P4SMA51CA	43.6	48.45	53.55	1	70.1	5.71	1
P4SMA56A	P4SMA56CA	47.8	53.20	58.80	1	77.0	5.19	1
P4SMA62A	P4SMA62CA	53.0	58.90	65.10	1	85.0	4.71	1
P4SMA68A	P4SMA68CA	58.1	64.60	71.40	1	92.0	4.35	1
P4SMA75A	P4SMA75CA	64.1	71.25	78.75	1	103.0	3.88	1
P4SMA82A	P4SMA82CA	70.1	77.90	86.10	1	113.0	3.54	1
P4SMA91A	P4SMA91CA	77.8	86.45	95.55	1	125.0	3.20	1
P4SMA100A	P4SMA100CA	85.5	95.00	105.00	1	137.0	2.92	1
P4SMA110A	P4SMA110CA	94.0	104.50	115.50	1	152.0	2.63	1
P4SMA120A	P4SMA120CA	102.0	114.00	126.00	1	165.0	2.42	1
P4SMA130A	P4SMA130CA	111.0	123.50	136.50	1	179.0	2.23	1
P4SMA150A	P4SMA150CA	128.0	142.50	157.50	1	207.0	1.93	1
P4SMA160A	P4SMA160CA	136.0	152.00	168.00	1	219.0	1.83	1
P4SMA170A	P4SMA170CA	145.0	161.50	178.50	1	234.0	1.71	1
P4SMA180A	P4SMA180CA	154.0	171.00	189.00	1	246.0	1.63	1
P4SMA200A	P4SMA200CA	171.0	190.00	210.00	1	274.0	1.46	1
P4SMA220A	P4SMA220CA	185.0	209.00	231.00	1	328.0	1.22	1
P4SMA250A	P4SMA250CA	214.0	237.50	262.50	1	344.0	1.16	1
P4SMA300A	P4SMA300CA	256.0	285.00	315.00	1	414.0	0.97	1
P4SMA350A	P4SMA350CA	299.3	332.50	367.50	1	482.0	0.83	1
P4SMA380A	P4SMA380CA	324.9	361.00	399.00	1	524.4	0.76	1
P4SMA400A	P4SMA400CA	342.0	380.00	420.00	1	552.0	0.72	1
P4SMA440A	P4SMA440CA	376.2	418.00	462.00	1	607.2	0.66	1
P4SMA500A	P4SMA500CA	427.5	475.00	525.00	1	690.0	0.58	1
P4SMA520A	P4SMA520CA	444.6	494.00	546.00	1	717.6	0.56	1
P4SMA550A	P4SMA550CA	470.3	522.50	577.50	1	759.0	0.53	1
P4SMA600A	P4SMA600CA	513.0	570.00	630.00	1	828.0	0.48	1

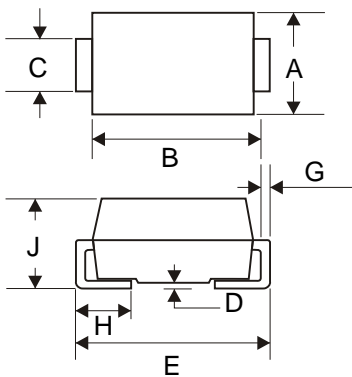
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

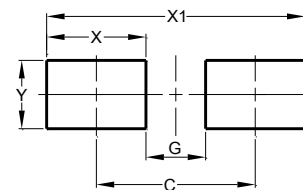


Package Dimensions & Suggested Pad Layout

SMA

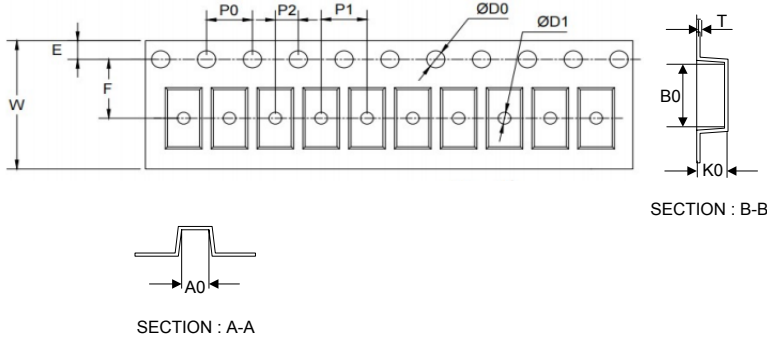
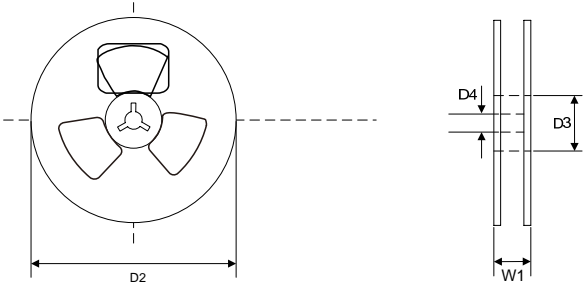
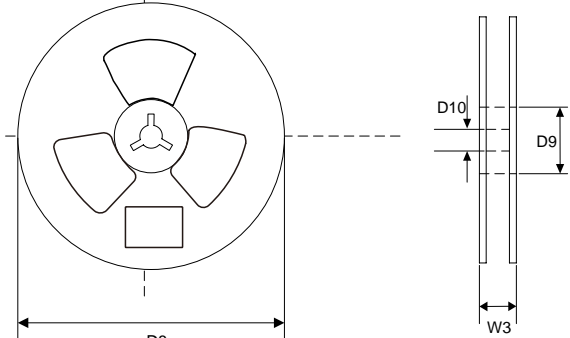


SMA		
Dim	Min	Max
A	2.40	2.79
B	3.99	4.50
C	1.32	1.47
D	-	0.20
E	4.93	5.28
G	0.15	0.31
H	0.76	1.52
J	1.98	2.29
All Dimensions in mm		



Dimensions	Value (in mm)
C	4.20
G	1.90
X	2.30
X1	6.50
Y	2.00

Tape & reel specification

Tape	Symbol	Dimension (mm)
	P0	4.00±0.20
	P1	4.00±0.20
	P2	2.00±0.20
	D0	1.60±0.20
	D1	1.60±0.20
	E	1.75±0.20
	F	5.50±0.15
	W	12.00±0.25
	A0	2.75±0.20
	B0	5.25±0.20
	K0	2.45±0.25
	T	0.20±0.10
	7" Reel	D2
	D3	55.0Min.
	D4	14.0±2.5
	W1	14.0±2.5
	Quantity: 2000PCS	
13" Reel	D8	330.0±5.0
	D9	73.0Min.
	D10	14.0±2.5
	W3	14.0±2.5
	Quantity: 5000PCS	