FEATURES

Glass passivated chip junction in P600 Package
Low leakage
Uni and Bidirectional unit
Excellent clamping capability
15000W Peak power capability at 10 × 1000μs waveform Repetition rate (duty cycle):0.01%
Fast response time: typically less than 1.0ps from 0 Volts to V_{BR} min
Typical I_R less than 2μA above 50V.
High Temperature soldering: 260°C/40 seconds at terminals
Typical maximum temperature coefficient ΔV_{BR} = 0.1% × V_{BR}@25°C× ΔT
Plastic package has Underwriters Laboratory Flammability 94V-0
Matte tin lead–free Plated
Halogen free and RoHS compliant
Typical failure mode is short from over-specified voltage or current
Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)

VOLTAGE RANGE
17 to 280 Volts
15000 Watts Peak Power

15KPxx(C)A
GK

15KP **xx** (C)A
VR Voltage
Bidirectional use C
LOGO GK

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000μs waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	15000	Watts
Peak Pulse Current with a 10/1000μs waveform.(Note1,Fig.3)	I_{PP}	See Next Table	Amps
Power Dissipation on Infinite Heat Sink at T_L=75°C	$P_{M(AV)}$	8.0	Watt
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	500	Amps
Operating junction 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°C per Fig. 2.
2. Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.
4. V_F < 3.5V for V_{BR} < 200V and V_F< 6.5V for V_{BR} > 201V.

Electrical Characteristics

Part Number		Reverse Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V) @I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @V_{RWM} (μA)
Uni	Bi		MIN	MAX				
15KP17A	15KP 17CA	17	18.99	20.79	50	29.3	515.4	5000
15KP18A	15KP 18CA	18	20.11	22.01	50	30.9	488.7	5000
15KP20A	15KP 20CA	20	22.34	24.46	20	34.3	440.2	1500
15KP22A	15KP 22CA	22	24.57	26.91	10	37.1	407.0	500
15KP24A	15KP 24CA	24	26.81	29.35	5	40.7	371.0	150
15KP26A	15KP 26C	26	29.04	31.80	5	44.0	343.2	50
15KP28A	15KP 28CA	28	31.28	34.24	5	47.5	317.9	25
15KP30A	15KP 30CA	30	33.51	36.70	5	50.7	297.8	15
15KP33A	15KP 33CA	33	36.90	40.40	5	54.7	276.1	2
15KP36A	15KP 36CA	36	40.20	44.00	5	59.8	252.5	2
15KP40A	15KP 40CA	40	44.70	48.90	5	65.8	229.5	2
15KP43A	15KP 43CA	43	48.00	52.60	5	69.8	216.3	2
15KP45A	15KP 45CA	45	50.30	55.00	5	72.8	207.4	2
15KP48A	15KP 48CA	48	53.60	58.70	5	77.7	194.3	2
15KP51A	15KP 51CA	51	57.00	62.40	5	82.9	182.1	2
15KP54A	15KP 54CA	54	60.30	66.00	5	87.7	172.2	2
15KP58A	15KP 58CA	58	64.80	70.90	5	93.8	161.0	2
15KP60A	15KP 60CA	60	67.00	73.40	5	97.4	155.0	2
15KP64A	15KP 64CA	64	71.50	78.30	5	104.2	144.9	2
15KP70A	15KP 70CA	70	78.20	85.60	5	113.6	132.9	2
15KP75A	15KP 75CA	75	83.80	91.70	5	122.0	123.8	2
15KP78A	15KP 78CA	78	87.10	95.40	5	126.1	119.7	2
15KP85A	15KP 85CA	85	94.90	104.00	5	137.6	109.7	2
15KP90A	15KP 90CA	90	100.50	110.10	5	145.6	103.7	2
15KP100A	15KP 100CA	100	111.70	122.30	5	161.3	93.6	2
15KP110A	15KP 110CA	110	122.90	134.50	5	178.6	84.5	2
15KP120A	15KP 120CA	120	134.00	146.80	5	192.3	78.5	2
15KP130A	15KP 130CA	130	145.20	159.00	5	208.3	72.5	2
15KP150A	15KP 150CA	150	167.60	183.50	5	241.9	62.4	2
15KP160A	15KP 160CA	160	178.70	195.70	5	258.6	58.4	2
15KP170A	15KP 170CA	170	189.90	207.90	5	272.7	55.4	2
15KP180A	15KP 180CA	180	201.10	220.10	5	288.5	52.3	2
15KP200A	15KP 200CA	200	223.40	244.60	5	319.1	47.3	2
15KP220A	15KP 220CA	220	245.70	269.10	5	428.6	42.2	2
15KP240A	15KP 240CA	240	268.10	293.50	5	384.6	39.3	2
15KP260A	15KP 260CA	260	290.40	318.00	5	416.7	36.2	2
15KP280A	15KP 280CA	280	312.80	342.40	5	454.5	33.2	2

Note:

1. For Bi-Directional devices having V_R of 40 volts and under, the I_R limit is double

RATING AND CHARACTERISTIC CURVES

FIG.1-PEAK PULSE POWER DERATING CURVE

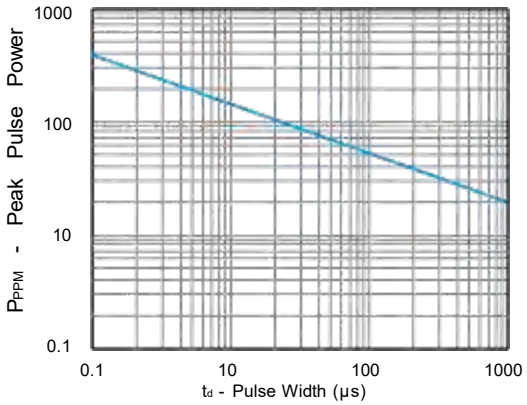


FIG.2-PULSE DERATING CURVE

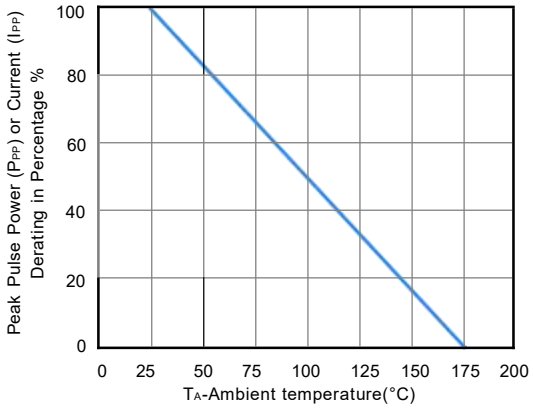


FIG.3-PULSE WAVE FORM

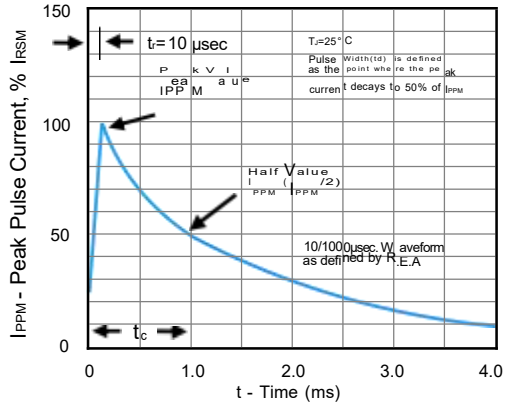


FIG.4-TYPICAL JUNCTION CAPACITANCE

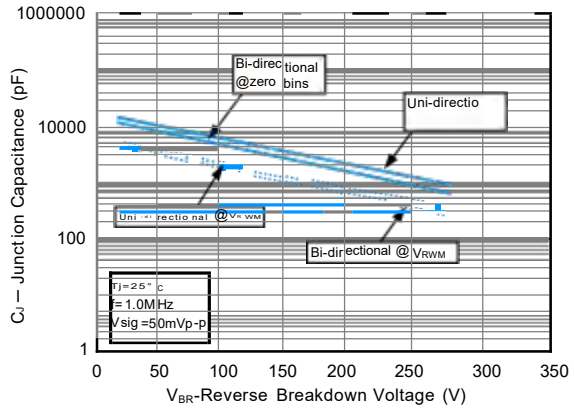


FIG.5-STEADY STATE POWER DERATING CURVE

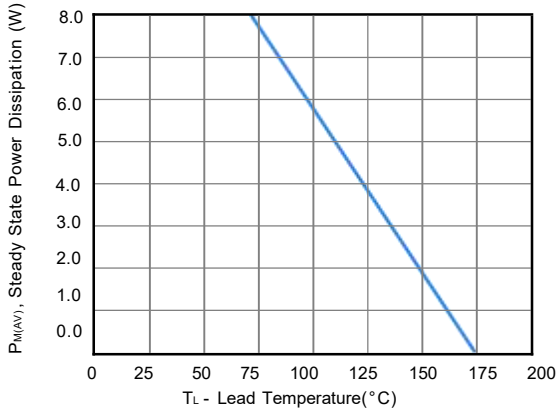
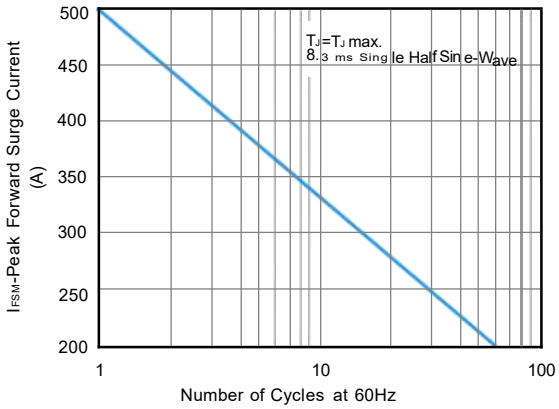
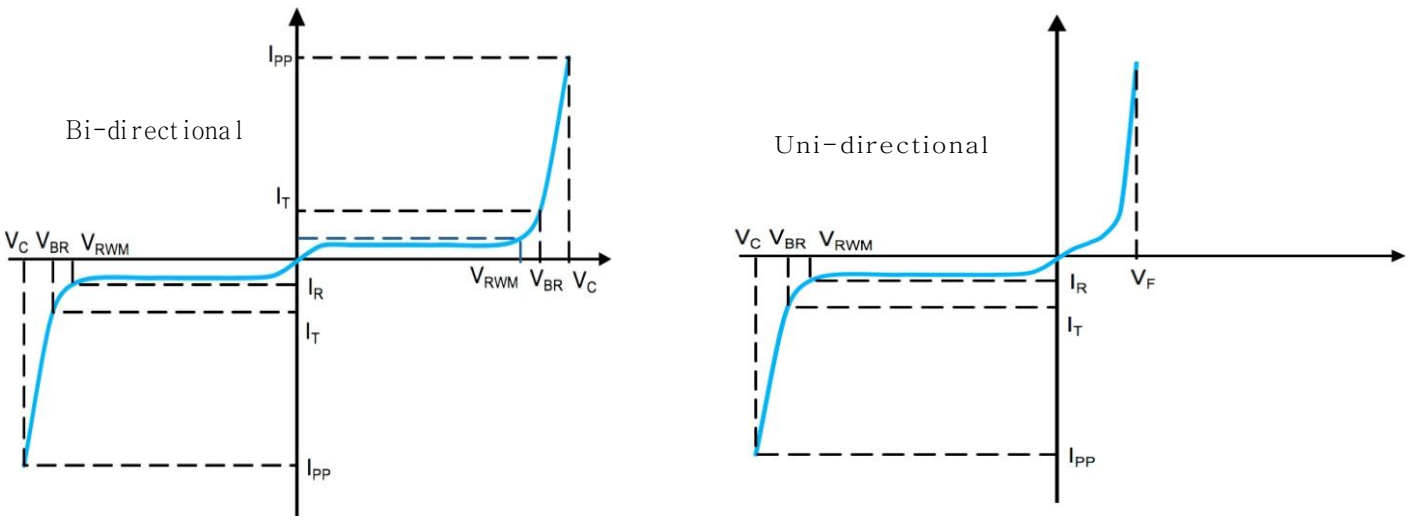


FIG.6-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT, UNIDIRECTIONAL



I-V Curve Characteristics

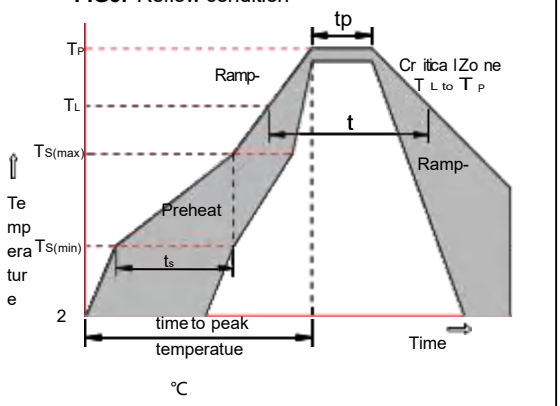


P_{PPM}	Peak Pulse Power Dissipation - Max power dissipation
V_{RWM}	Reverse Stand-off Voltage - Maximum voltage that can be applied to TVS without operation
V_{BR}	Breakdown Voltage – Maximum voltage that flows though the TVS at a specified current (I_T)
V_C	Clamping Voltage – Peak voltage measured across the TVS at a specified I_{PPM} (peak impulse current)
I_R	Reverse Leakage Current – Current measured at V_R
V_F	Forward Voltage Drop for Uni-directional

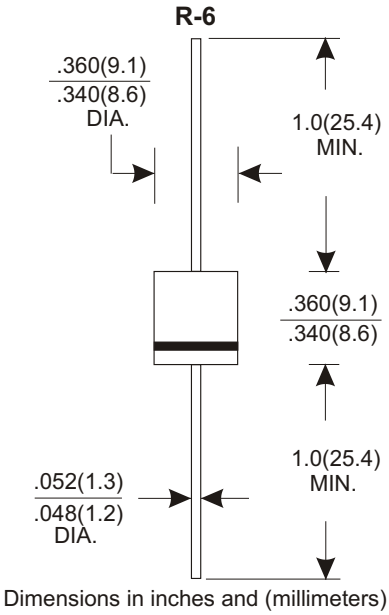
Soldering parameters

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

FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout



Dimensions in inches and (millimeters)