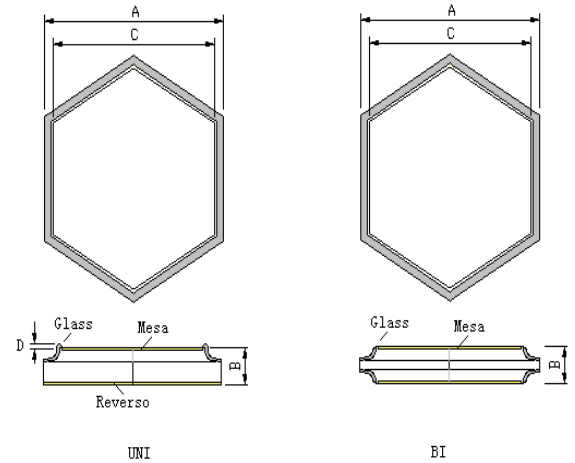


Features

- Glass passivated chip
- Low inductance
- Excellent clamping capability
- Very fast response time
- 5000 W peak pulse power capability with a 10/1000 μ s waveform
- Compatible with soldering

Devices for Bidirectional Applications

- For bi-directional devices, use suffix C or CA
Electrical characteristics apply in both directions.



Process Details

Chip Type	PDPW (pcs/4"wafer)	Size (mil)				Surface Metalization
		A (+1/-2)	B (± 2)	C (± 2)	D (± 1)	
GDT5KP	191	220	13	189	1.5	Ni(0.6~1um)/ Au(0.05um)

Maximum Ratings & Thermal Characteristics

(TA = 25 °C unless otherwise noted)

Parameter	Symbol	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform (see fig. 1)	P _{PPM}	5000	W
Peak pulse current with a waveform (see fig. 3 , single pulse)	I _{PPM}	See Next Table	A

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig. 2

GDT5KP5.0A thru GDT5KP250A

Type	Breakdown Voltage at $I_T^{(1)}$ $V_{(BR)}$ (V)		Test Current	Stand-off Voltage	Maximum Reverse Leakage at V_{WM}	Maximum Peak Pulse Surge Current ⁽²⁾	Maximum Clamping Voltage at I_{PPM}
	Min	Max	I_T (mA)	V_{WM} (V)	I_D (μ A)	I_{PPM} (A)	V_C (V)
GDT5KP5.0A	6.4	7	50	5	2000	543	9.2
GDT5KP6.0A	6.67	7.37	50	6	5000	485	10.3
GDT5KP6.5A	7.22	7.98	50	6.5	2000	446	11.2
GDT5KP7.0A	7.78	8.6	50	7	1000	417	12
GDT5KP7.5A	8.33	9.21	5	7.5	250	388	12.9
GDT5KP8.0A	8.89	9.83	5	8	150	368	13.6
GDT5KP8.5A	9.44	10.4	5	8.5	50	347	14.4
GDT5KP9.0A	10	11.1	5	9	20	325	15.4
GDT5KP10A	11.1	12.3	5	10	15	294	17
GDT5KP11A	12.2	13.5	5	11	10	275	18.2
GDT5KP12A	13.3	14.7	5	12	5	251	19.9
GDT5KP13A	14.4	15.9	5	13	2	233	21.5
GDT5KP14A	15.6	17.2	5	14	2	216	23.2
GDT5KP15A	16.7	18.5	5	15	2	205	24.4
GDT5KP16A	17.8	19.7	5	16	2	192	26
GDT5KP17A	18.9	20.9	5	17	2	181	27.6
GDT5KP18A	20	22.1	5	18	2	171	29.2
GDT5KP20A	22.2	24.5	5	20	2	154	32.4
GDT5KP22A	24.4	26.9	5	22	2	141	35.5
GDT5KP24A	26.7	29.5	5	24	2	129	38.9
GDT5KP26A	28.9	31.9	5	26	2	119	42.1
GDT5KP28A	31.1	34.4	5	28	2	110	45.4
GDT5KP30A	33.3	36.8	5	30	2	103	48.4
GDT5KP33A	36.7	40.6	5	33	2	93.8	53.3
GDT5KP36A	40	44.2	5	36	2	86.1	58.1
GDT5KP40A	44.4	49.1	5	40	2	77.5	64.5
GDT5KP43A	47.8	52.8	5	43	2	72	69.4
GDT5KP45A	50	55.3	5	45	2	68.8	72.7
GDT5KP48A	53.3	58.9	5	48	2	64.6	77.4
GDT5KP51A	56.7	62.7	5	51	2	60.7	82.4
GDT5KP54A	60	66.3	5	54	2	57.4	87.1
GDT5KP58A	64.4	71.2	5	58	2	53.4	94
GDT5KP60A	66.7	73.7	5	60	2	51.7	97
GDT5KP64A	71.1	78.6	5	64	2	48.5	103
GDT5KP70A	77.8	86	5	70	2	44.2	113
GDT5KP75A	83.3	92.1	5	75	2	41.3	121
GDT5KP78A	86.7	95.8	5	78	2	39.7	126
GDT5KP85A	94.4	104	5	85	2	36.5	137
GDT5KP90A	100	111	5	90	2	34.2	146
GDT5KP100A	111	123	5	100	2	30.9	162
GDT5KP110A	122	135	5	110	2	28.2	177
GDT5KP120A	133	147	5	120	2	26.4	193
GDT5KP130A	144	159	5	130	2	24.4	209

Type	Breakdown Voltage at $I_T^{(1)}$ $V_{(BR)}$ (V)		Test Current I_T (mA)	Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage at V_{WM} I_D (μ A)	Maximum Peak Pulse Surge Current ⁽²⁾ I_{PPM} (A)	Maximum Clamping Voltage at I_{PPM} V_C (V)
	Min	Max					
GDT5KP150A	167	185	5	150	2	21	243
GDT5KP160A	178	197	5	160	2	19.7	259
GDT5KP170A	189	209	5	170	2	18.5	275
GDT5KP180A	200	221	5	180	2	17.5	292
GDT5KP190A	211	233	5	190	2	16.5	310
GDT5KP200A	222	246	5	200	2	15.5	329.2
GDT5KP210A	233	258	5	210	2	14.6	349.5
GDT5KP220A	244	270	5	220	2	13.7	371.1
GDT5KP250A	277	306	5	250	2	12	425

- Notes:** (1) $V_{(BR)}$ measured after I_T applied for 300us square wave pulse or equivalent
 (2) Surge current waveform Per Fig. 3 and derate Per Fig. 2
 (3) For bi-directional types having V_{WM} of 10 Volts and less, the I_D limit is doubled
 (4) Ratings at 25°C ambient temperature unless otherwise specified.

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

GDT5KP5.0A thru GDT5KP250A

Fig. 1 - Peak Pulse Power Rating Curve

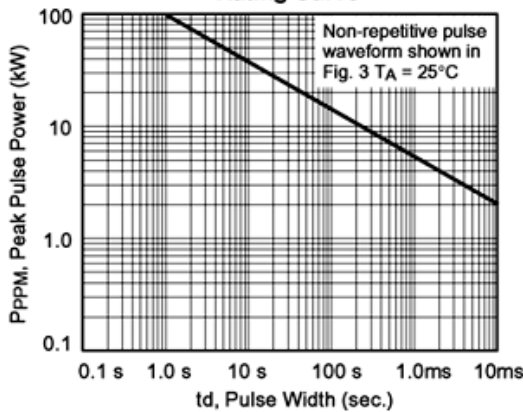


Fig. 2 - Pulse Derating Curve

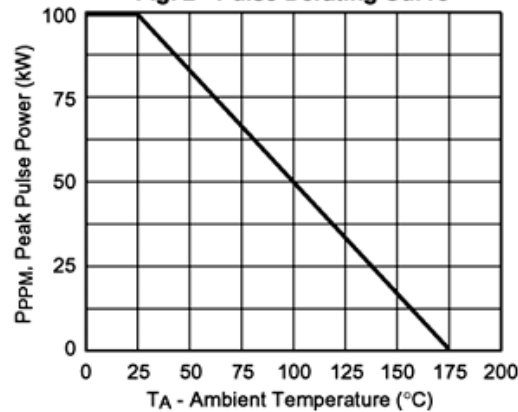


Fig. 3 - Pulse Waveform

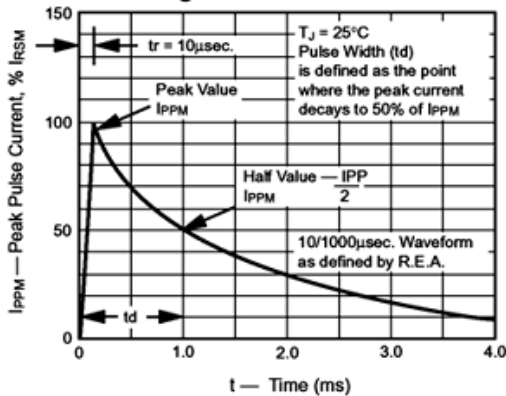


Fig. 4 - Typical Junction Capacitance

