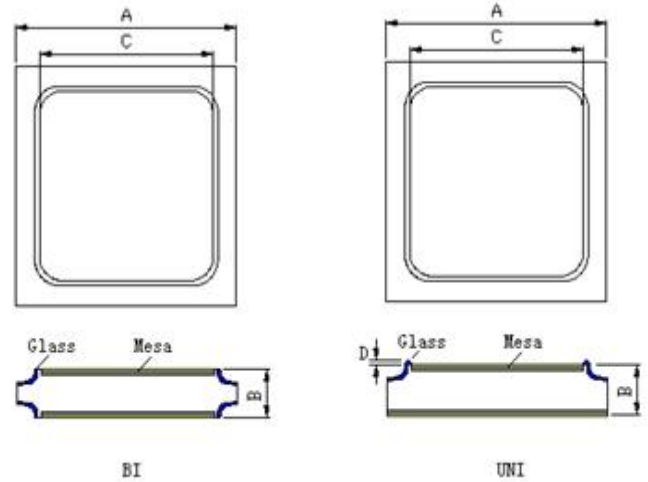


**Features**

- Glass passivated chip
- Low inductance
- Excellent clamping capability
- Very fast response time
- 1500 W peak pulse power capability with a 10/1000  $\mu$ 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 ( $\pm 2$ )	C ( $\pm 2$ )	D ( $\pm 1$ )	
GDT1.5KE/SMCJ/1.5SMC	781	115	13	89	1.5	Ni(0.6~1um)/ Au(0.05um)

**Notes:** "A" is 130 mil when Breakdown Voltage is 250 Volts and more.

**Maximum Ratings & Thermal Characteristics**

(TA = 25 °C unless otherwise noted)

Parameter	Symbol	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 $\mu$ s waveform (see fig. 1)	P <sub>PPM</sub>	1500	W
Peak pulse current with a waveform (see fig. 3 , single pulse)	I <sub>PPM</sub>	See Next Table	A

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig. 2

**GDTSMCJ5.0 thru GDTSMCJ440CA**

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 $I_{PPM}^{(2)}$	Maximum Clamping Voltage at $I_{PPM}$
	Min	Max	$I_T$ (mA)	$V_{WM}$ (V)	$I_D$ ( $\mu$ A)	$I_{PPM}$ (A)	$V_C$ (V)
GDTSMCJ5.0A	6.4	7.07	10	5	800	163	9.2
GDTSMCJ6.0A	6.67	7.37	10	6	800	145.6	10.3
GDTSMCJ6.5A	7.22	7.98	10	6.5	500	133.9	11.2
GDTSMCJ7.0A	7.78	8.6	10	7	200	125	12
GDTSMCJ7.5A	8.33	9.21	1	7.5	100	116.3	12.9
GDTSMCJ8.0A	8.89	9.83	1	8	50	110.3	13.6
GDTSMCJ8.5A	9.44	10.4	1	8.5	10	104.2	14.4
GDTSMCJ9.0A	10	11.1	1	9	5	97.4	15.4
GDTSMCJ10A	11.1	12.3	1	10	1	88.2	17
GDTSMCJ11A	12.2	13.5	1	11	1	82.4	18.2
GDTSMCJ12A	13.3	14.7	1	12	1	75.4	19.9
GDTSMCJ13A	14.4	15.9	1	13	1	69.8	21.5
GDTSMCJ14A	15.6	17.2	1	14	1	64.7	23.2
GDTSMCJ15A	16.7	18.5	1	15	1	61.5	24.4
GDTSMCJ16A	17.8	19.7	1	16	1	57.7	26
GDTSMCJ17A	18.9	20.9	1	17	1	54.3	27.6
GDTSMCJ18A	20	22.1	1	18	1	51.4	29.2
GDTSMCJ20A	22.2	24.5	1	20	1	46.3	32.4
GDTSMCJ22A	24.4	26.9	1	22	1	42.3	35.5
GDTSMCJ24A	26.7	29.5	1	24	1	38.6	38.9
GDTSMCJ26A	28.9	31.9	1	26	1	35.6	42.1
GDTSMCJ28A	31.1	34.4	1	28	1	33	45.4
GDTSMCJ30A	33.3	36.8	1	30	1	31	48.4
GDTSMCJ33A	36.7	40.6	1	33	1	28.1	53.3
GDTSMCJ36A	40	44.2	1	36	1	25.8	58.1
GDTSMCJ40A	44.4	49.1	1	40	1	23.3	64.5
GDTSMCJ43A	47.8	52.8	1	43	1	21.6	69.4
GDTSMCJ45A	50	55.3	1	45	1	20.6	72.7
GDTSMCJ48A	53.3	58.9	1	48	1	19.4	77.4
GDTSMCJ51A	56.7	62.7	1	51	1	18.2	82.4
GDTSMCJ54A	60	66.3	1	54	1	17.2	87.1
GDTSMCJ58A	64.4	71.2	1	58	1	16	93.6
GDTSMCJ60A	66.7	73.7	1	60	1	15.5	96.8
GDTSMCJ64A	71.1	78.6	1	64	1	14.6	103
GDTSMCJ70A	77.8	86	1	70	1	13.3	113
GDTSMCJ75A	83.3	92.1	1	75	1	12.4	121
GDTSMCJ78A	86.7	95.8	1	78	1	11.9	126
GDTSMCJ85A	94.4	104	1	85	1	10.9	137
GDTSMCJ90A	100	111	1	90	1	10.3	146
GDTSMCJ100A	111	123	1	100	1	9.3	162
GDTSMCJ110A	122	135	1	110	1	8.5	177
GDTSMCJ120A	133	147	1	120	1	7.8	193
GDTSMCJ130A	144	159	1	130	1	7.2	209
GDTSMCJ150A	167	185	1	150	1	6.2	243
GDTSMCJ160A	178	197	1	160	1	5.8	259
GDTSMCJ170A	189	209	1	170	1	5.5	275

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 $V_{WM}$ $I_D$ ( $\mu$ A)	Maximum Peak Pulse Surge Current $(^2)$ $I_{PPM}$ (A)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (V)
	Min	Max					
GDTSMCJ180A	201	222	1	180	1	5	292
GDTSMCJ200A	224	247	1	200	1	4.6	324
GDTSMCJ220A	246	272	1	220	1	4.2	356
GDTSMCJ250A	279	309	1	250	1	3.7	405
GDTSMCJ300A	335	371	1	300	1	3.1	486
GDTSMCJ350A	391	432	1	350	1	2.6	567
GDTSMCJ400A	447	494	1	400	1	2.3	648
GDTSMCJ440A	492	543	1	440	1	2.1	713

**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.

**GDTP6KE6.8 thru GDTP6KE550CA**

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 $V_{WM}$ $I_D$ ( $\mu$ A)	Maximum Peak Pulse Surge Current $(^2)$ $I_{PPM}$ (A)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (V)
	Min	Max					
GDT1.5KE6.8A	6.45	7.14	10	5.8	1000	143	10.5
GDT1.5KE7.5A	7.13	7.88	10	6.4	500	133	11.3
GDT1.5KE8.2A	7.79	8.61	10	7.02	200	124	12.1
GDT1.5KE9.1A	8.65	9.55	1	7.78	50	112	13.4
GDT1.5KE10A	9.5	10.5	1	8.55	10	103	14.5
GDT1.5KE11A	10.5	11.6	1	9.4	5	96.2	15.6
GDT1.5KE12A	11.4	12.6	1	10.2	1	89.8	16.7
GDT1.5KE13A	12.4	13.7	1	11.1	1	82.4	18.2
GDT1.5KE15A	14.3	15.8	1	12.8	1	70.8	21.2
GDT1.5KE16A	15.2	16.8	1	13.6	1	66.7	22.5
GDT1.5KE18A	17.1	18.9	1	15.3	1	59.5	25.2
GDT1.5KE20A	19	21	1	17.1	1	54.2	27.7
GDT1.5KE22A	20.9	23.1	1	18.8	1	49	30.6
GDT1.5KE24A	22.8	25.2	1	20.5	1	45.2	33.2
GDT1.5KE27A	25.7	28.4	1	23.1	1	40	37.5
GDT1.5KE30A	28.5	31.5	1	25.6	1	36.2	41.4
GDT1.5KE33A	31.4	34.7	1	28.2	1	32.8	45.7
GDT1.5KE36A	34.2	37.8	1	30.8	1	30.1	49.9
GDT1.5KE39A	37.1	41	1	33.3	1	27.8	53.9
GDT1.5KE43A	40.9	45.2	1	36.8	1	25.3	59.3
GDT1.5KE47A	44.7	49.4	1	40.2	1	23.1	64.8
GDT1.5KE51A	48.5	53.6	1	43.6	1	21.4	70.1
GDT1.5KE56A	53.2	58.8	1	47.8	1	19.5	77
GDT1.5KE62A	58.9	65.1	1	53	1	17.6	85
GDT1.5KE68A	64.6	71.4	1	58.1	1	16.3	92

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 $V_{WM}$ $I_D$ ( $\mu$ A)	Maximum Peak Pulse Surge Current <sup>(2)</sup> $I_{PPM}$ (A)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (V)
	Min	Max					
GDT1.5KE75A	71.3	78.8	1	64.1	1	14.6	103
GDT1.5KE82A	77.9	86.1	1	70.1	1	13.3	113
GDT1.5KE91A	86.5	95.5	1	77.8	1	12	125
GDT1.5KE100A	95	105	1	85.5	1	10.9	137
GDT1.5KE110A	105	116	1	94	1	9.9	152
GDT1.5KE120A	114	126	1	102	1	9.1	165
GDT1.5KE130A	124	137	1	111	1	8.4	179
GDT1.5KE150A	143	158	1	128	1	7.2	207
GDT1.5KE160A	152	168	1	136	1	6.8	219
GDT1.5KE170A	162	179	1	145	1	6.4	234
GDT1.5KE180A	171	189	1	154	1	6.1	246
GDT1.5KE200A	190	210	1	171	1	5.5	274
GDT1.5KE220A	209	231	1	185	1	4.6	328
GDT1.5KE250A	237	263	1	214	1	4.4	344
GDT1.5KE300A	285	315	1	256	1	3.6	414
GDT1.5KE350A	333	368	1	300	1	3.1	482
GDT1.5KE400A	380	420	1	342	1	2.7	548
GDT1.5KE440A	418	462	1	376	1	2.5	602
GDT1.5KE480A	456	504	1	408	1	2.3	658
GDT1.5KE510A	485	535	1	434	1	2.1	698
GDT1.5KE530A	503.5	556.5	1	450	1	2.1	725
GDT1.5KE540A	513	567	1	459	1	2	740
GDT1.5KE550A	522.5	577.5	1	467	1	2	760

**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

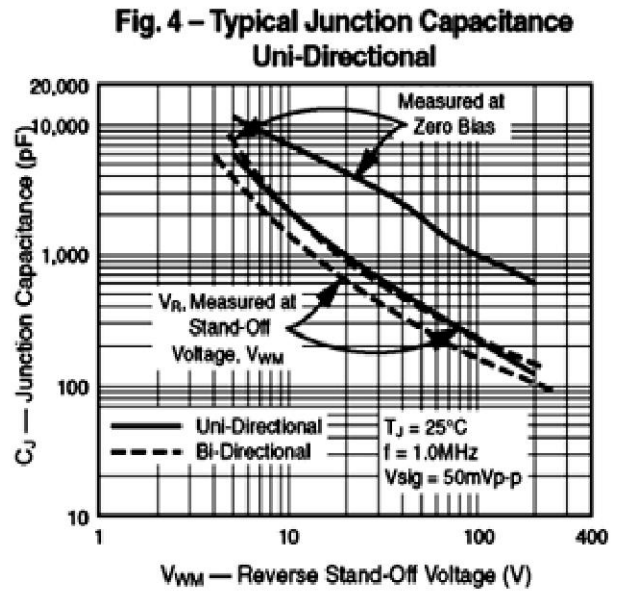
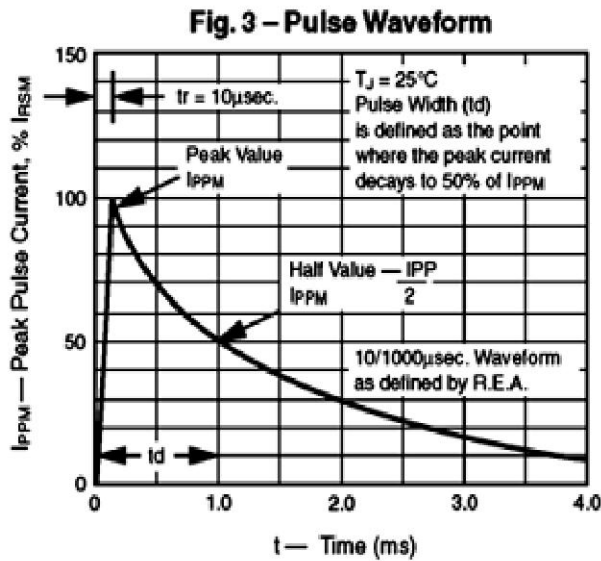
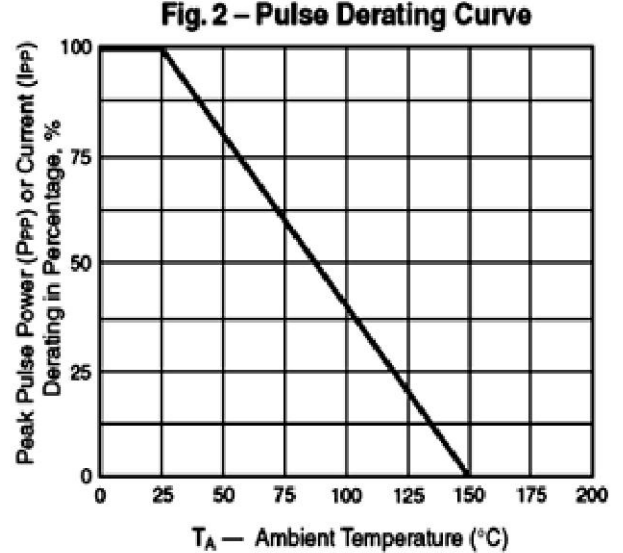
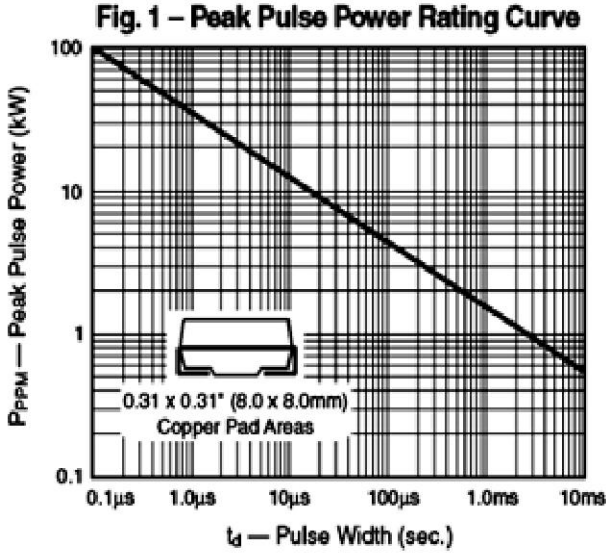
(3) For bi-directional types having  $V_{WM}$  of 10 Volts and less, the  $I_D$  limit is doubled

(4) Ratings at 25°C ambient temperature unless otherwise specified.

(4)Sameness with 1.5SMCX

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

GDTSMCJ5.0 thru GDTSMCJ440CA / GDT1.5SMC6.8A thru GDT1.5SMC550CA



GDT1.5KE6.8 thru GDT1.5KE550CA / GDT1.5SMC6.8 thru GDT1.5SMC550CA

