

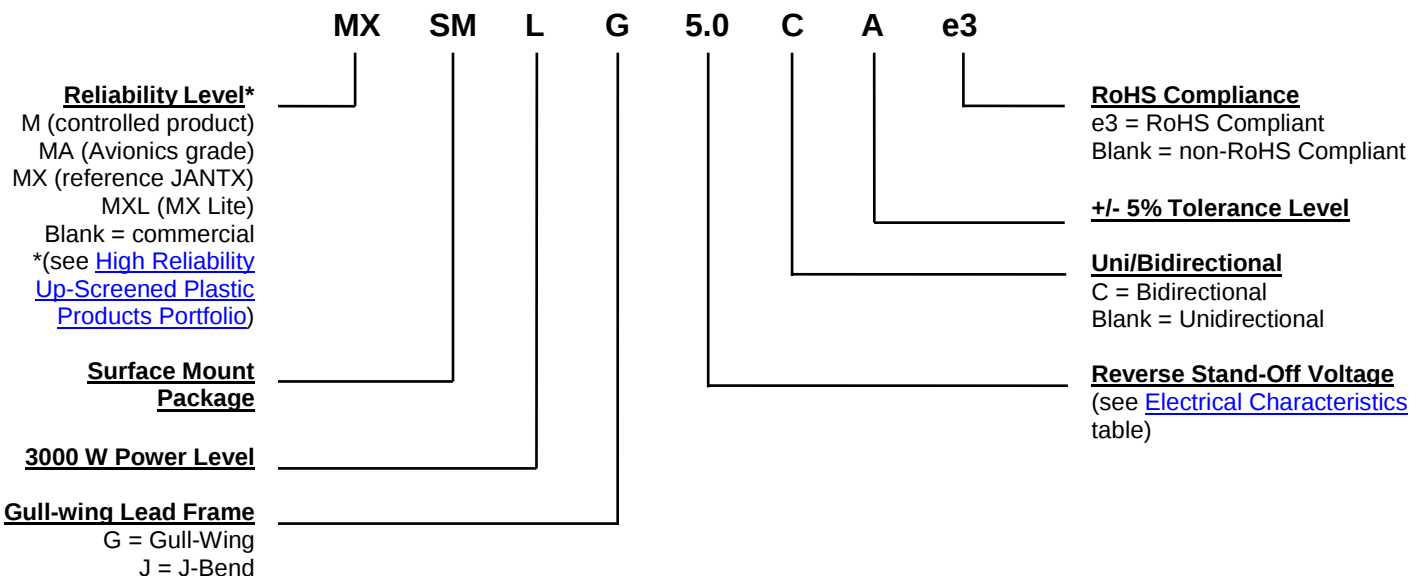
MAXIMUM RATINGS

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T_J and T_{STG}	-65 to +150	°C
Thermal Resistance Junction-to-Lead	$R_{\theta JL}$	17.5	°C/W
Thermal Resistance Junction-to-Ambient ⁽¹⁾	$R_{\theta JA}$	77.5	°C/W
Peak Pulse Power Dissipation @ 25 °C (at 10/1000 μ s, see Figures 1, 2, and 3)	P_{PP}	3000	W
Impulse Repetition Rate (duty factor)	df	0.01 or less	%
$t_{clamping}$ (0 volts to $V_{(BR)}$ min.)	$t_{clamping}$	<100	ps
Unidirectional		<5	ns
Bidirectional			
Rated Average Power Dissipation	$P_{M(AV)}$	6	W
$T_L = +45$ °C		1.61 ⁽¹⁾	
$T_A = +25$ °C			
Maximum Forward Surge Current ⁽²⁾	I_{FSM}	200	A (pk)
Solder Temperature @ 10 s	T_{SP}	260	°C

Notes: 1. When mounted on FR4 PC board (1oz Cu) with recommended footprint (see [last page](#))
2. Peak impulse of 8.3 ms half-sine wave at 25 °C (unidirectional only)

MECHANICAL and PACKAGING

- CASE: Void-free transfer molded thermosetting epoxy body meeting UL94V-0
- TERMINALS: Tin-lead or RoHS compliant annealed matte-tin plating. Solderable to MIL-STD-750, method 2026.
- MARKING: Part number marked on package
- POLARITY: Cathode indicated by band. No cathode band on bi-directional devices
- TAPE & REEL option: Standard per EIA-481-B with 16 mm tape (add "TR" suffix to part number). Consult factory for quantities.
- WEIGHT: Approximately 0.25 grams
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE


SYMBOLS & DEFINITIONS

Symbol	Definition
$I_{(BR)}$	Breakdown Current: The current used for measuring breakdown voltage $V_{(BR)}$.
I_D	Standby Current: The current at the rated standoff voltage (V_{WM}).
I_F	Forward Current: The forward current dc value, no alternating component.
I_O	Average Rectified Output Current: The output current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
I_{PP}	Peak Impulse Current: The peak current during the impulse.
P_{PP}	Peak Pulse Power: The peak power dissipation resulting from the peak impulse current I_{PP} .
V_C	Clamping Voltage: Maximum clamping voltage at specified I_{PP} (Peak Pulse Current) at the specified pulse conditions.
$V_{(BR)}$	Minimum Breakdown Voltage: The minimum voltage the device will exhibit at a specified current.
V_{WM}	Working Peak Voltage: The maximum peak voltage that can be applied over the operating temperature range. This is also referred to as standoff voltage.

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise stated

PART NUMBER		REVERSE STAND-OFF VOLTAGE V_{WM} Volts	BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_{(BR)}$ Volts			MAXIMUM CLAMPING VOLTAGE @ I_{PP} Volts	PEAK PULSE CURRENT (See Fig. 2) I_{PP} Amps	MAXIMUM STANDBY CURRENT @ V_{WM} I_D μA
Gull-Wing	J-Bend		MIN.	MAX.	$I_{(BR)}$ mA			
SMLG5.0A	SMLJ5.0A	5.0	6.40 – 7.00		10	9.2	326.0	1000
SMLG6.0A	SMLJ6.0A	6.0	6.67 – 7.37		10	10.3	291.3	1000
SMLG6.5A	SMLJ6.5A	6.5	7.22 – 7.98		10	11.2	267.9	500
SMLG7.0A	SMLJ7.0A	7.0	7.78 – 8.60		10	12.0	250.0	200
SMLG7.5A	SMLJ7.5A	7.5	8.33 – 9.21		1	12.9	232.6	100
SMLG8.0A	SMLJ8.0A	8.0	8.89 – 9.83		1	13.6	220.6	50
SMLG8.5A	SMLJ8.5A	8.5	9.44 – 10.4		1	14.4	208.4	25
SMLG9.0A	SMLJ9.0A	9.0	10.0 – 11.1		1	15.4	194.8	10
SMLG10A	SMLJ10A	10	11.1 – 12.3		1	17.0	176.4	5
SMLG11A	SMLJ11A	11	12.2 – 13.5		1	18.2	164.8	5
SMLG12A	SMLJ12A	12	13.3 – 14.7		1	19.9	150.6	5
SMLG13A	SMLJ13A	13	14.4 – 15.9		1	21.5	139.4	5
SMLG14A	SMLJ14A	14	15.6 – 17.2		1	23.2	129.4	2
SMLG15A	SMLJ15A	15	16.7 – 18.5		1	24.4	123.0	2
SMLG16A	SMLJ16A	16	17.8 – 19.7		1	26.0	115.4	2
SMLG17A	SMLJ17A	17	18.9 – 20.9		1	27.6	106.6	2
SMLG18A	SMLJ18A	18	20.0 – 22.1		1	29.2	102.8	2
SMLG20A	SMLJ20A	20	22.2 – 24.5		1	32.4	92.6	2
SMLG22A	SMLJ22A	22	24.4 – 26.9		1	35.5	84.4	2
SMLG24A	SMLJ24A	24	26.7 – 29.5		1	38.9	77.2	2
SMLG26A	SMLJ26A	26	28.9 – 31.9		1	42.1	71.2	2
SMLG28A	SMLJ28A	28	31.1 – 34.4		1	45.4	66.0	2
SMLG30A	SMLJ30A	30	33.3 – 36.8		1	48.4	62.0	2
SMLG33A	SMLJ33A	33	36.7 – 40.6		1	53.3	56.2	2
SMLG36A	SMLJ36A	36	40.0 – 44.2		1	58.1	51.6	2
SMLG40A	SMLJ40A	40	44.4 – 49.1		1	64.5	46.4	2
SMLG43A	SMLJ43A	43	47.8 – 52.8		1	69.4	43.2	2
SMLG45A	SMLJ45A	45	50.0 – 55.3		1	72.7	41.2	2
SMLG48A	SMLJ48A	48	53.3 – 58.9		1	77.4	38.8	2
SMLG51A	SMLJ51A	51	56.7 – 62.7		1	82.4	36.4	2
SMLG54A	SMLJ54A	54	60.0 – 66.3		1	87.1	34.4	2
SMLG58A	SMLJ58A	58	64.4 – 71.2		1	93.6	32.0	2
SMLG60A	SMLJ60A	60	66.7 – 73.7		1	96.8	31.0	2
SMLG64A	SMLJ64A	64	71.1 – 78.6		1	103.0	29.2	2
SMLG70A	SMLJ70A	70	77.8 – 86.0		1	113	26.6	2
SMLG75A	SMLJ75A	75	83.3 – 92.1		1	121	24.8	2

Continued.

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise stated (continued)

MICROSEMI PART NUMBER		REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_{(BR)}$ Volts		MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT (See Fig. 2) I_{PP}	MAXIMUM STANDBY CURRENT @ V_{WM} I_D μA
Gull-Wing	J-Bend		MIN.	MAX.			
SMLG78A	SMLJ78A	78	86.7	95.8	126	22.8	2
SMLG85A	SMLJ85A	85	94.4	104.0	137	20.8	2
SMLG90A	SMLJ90A	90	100	111	146	20.6	2
SMLG100A	SMLJ100A	100	111	123	162	18.6	2
SMLG110A	SMLJ110A	110	122	135	177	16.8	2
SMLG120A	SMLJ120A	120	133	147	193	15.6	2
SMLG130A	SMLJ130A	130	144	159	209	14.4	2
SMLG150A	SMLJ150A	150	167	185	243	12.4	2
SMLG160A	SMLJ160A	160	178	197	259	11.6	2
SMLG170A	SMLJ170A	170	189	209	275	11.0	2

NOTE 1: Bidirectional capacitance is half that shown in figure 4 at zero volts.

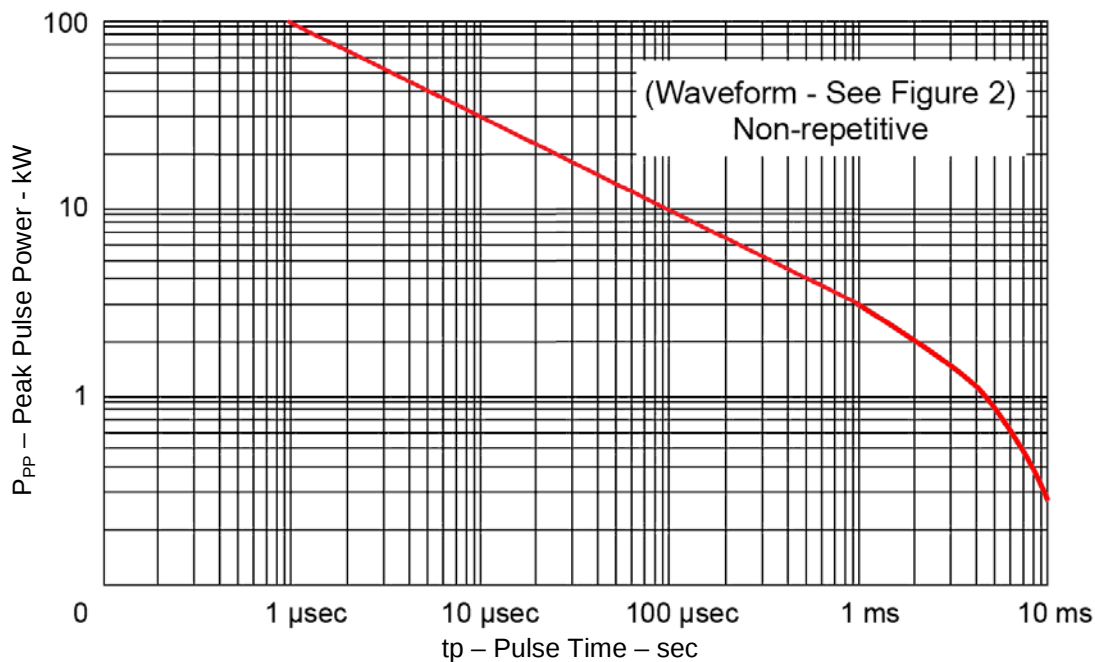
GRAPHS


FIGURE 1
Peak Pulse Power vs. Pulse Time

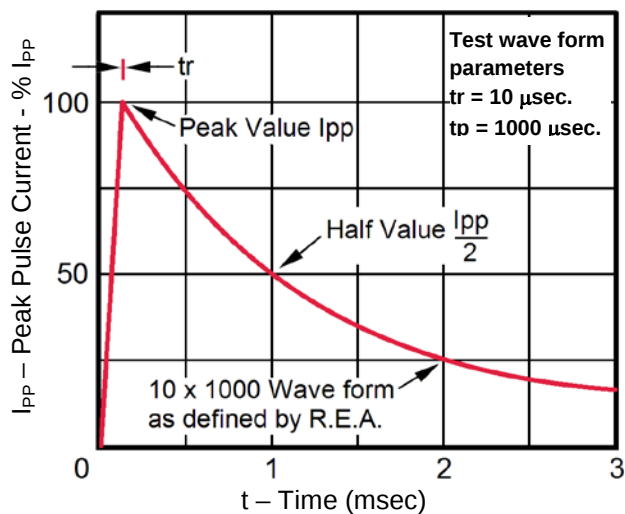


FIGURE 2
Pulse Waveform

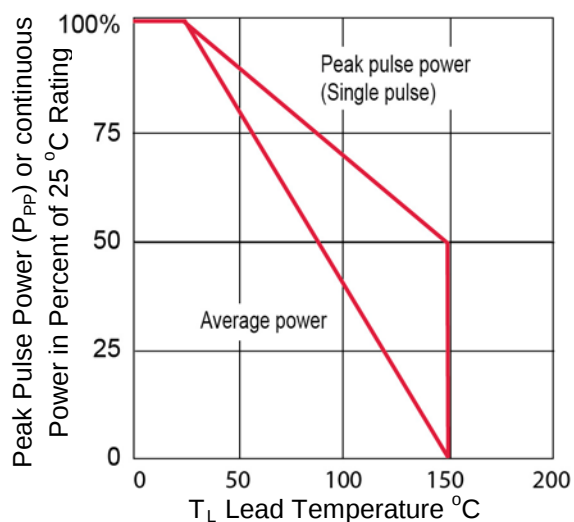
GRAPHS (continued)


FIGURE 3
Derating Curve

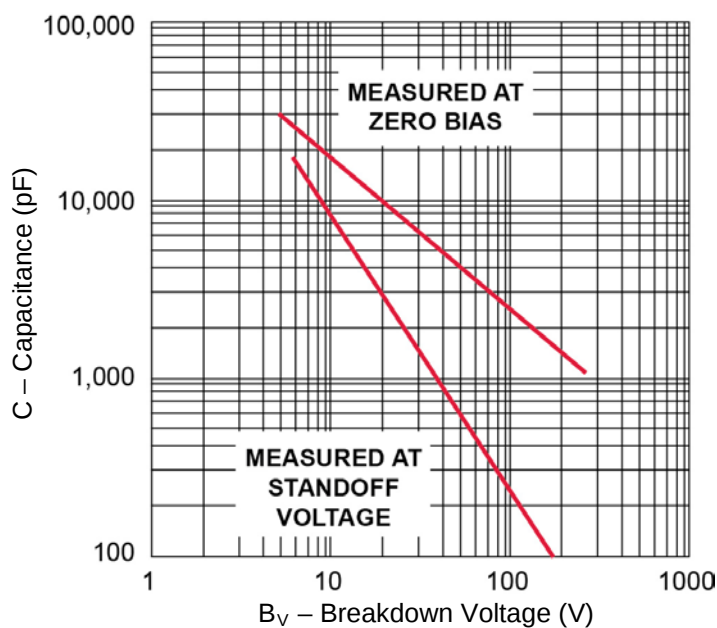
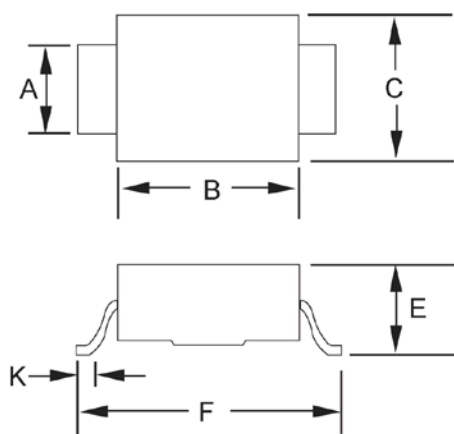
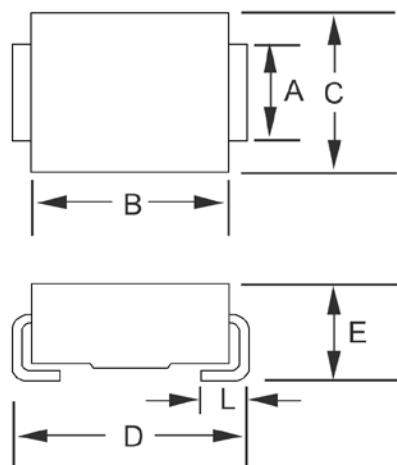


FIGURE 4
Typical Capacitance vs.
Breakdown Voltage (unidirectional configuration)
NOTE: Bidirectional capacitance is half that shown at zero volts.

PACKAGE DIMENSIONS

SMLG (DO-215AB)

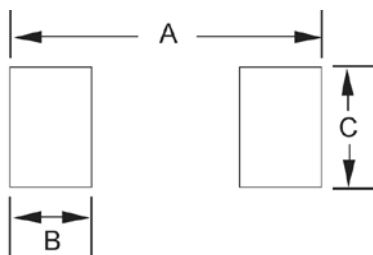
Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
A	0.115	0.121	2.92	3.07
B	0.260	0.280	6.60	7.11
C	0.220	0.245	5.59	6.22
E	0.077	0.110	1.95	2.80
F	0.380	0.400	9.65	10.16
K	0.025	0.040	0.635	1.016

NOTES: Dimension "E" exceeds the JEDEC outline as shown.
Typical Standoff Height: 0.004" – 0.008" (0.1 mm – 0.2 mm).


SMLJ (DO-214AB)

Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
A	0.115	0.121	2.92	3.07
B	0.260	0.280	6.60	7.11
C	0.220	0.245	5.59	6.22
D	0.305	0.320	7.75	8.13
E	0.077	0.110	1.95	2.80
L	0.030	0.060	0.760	1.52

NOTES: Dimension "E" exceeds the JEDEC outline in height as shown.
Typical Standoff Height: 0.004" – 0.008" (0.1 mm – 0.2 mm).

PAD LAYOUT


SMLG (DO-215AB)		
Ltr	Inch	Millimeters
A	0.510	12.95
B	0.110	2.79
C	0.150	3.81

SMLJ (DO-214AB)		
Ltr	Inch	Millimeters
A	0.390	9.90
B	0.110	2.79
C	0.150	3.81