



Micro Commercial Components
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SMLJ5.0 THRU SMLJ170CA

Features

- For surface mount application in order to optimize board space
- Low inductance
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Repetition Rate(duty cycle): 0.5%
- Fast response time: typical less than 1ps from 0V to BV min
- Typical I_b less than 1uA above 10V
- High temperature soldering: 250°C/10 seconds at terminals
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0

Transient Voltage Suppressor 5.0 to 170 Volts 3000 Watt

Mechanical Data

- CASE: JEDEC DO-214AB molded plastic body over passivated junction
- Terminals: solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes positive end(cathode) except Bi-directional types.
- Standard packaging: 16mm tape per (EIA 481).
- Weight: 0.007 ounce, 0.21 gram

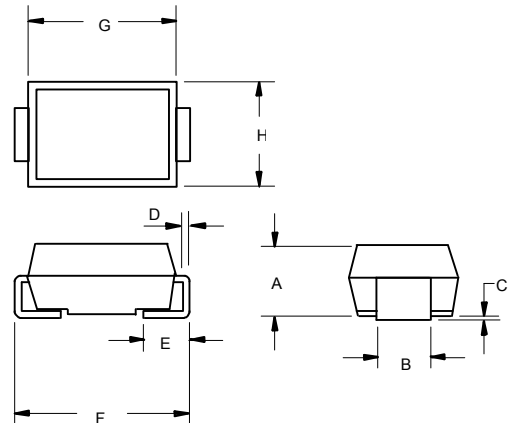
Maximum Ratings @ 25°C Unless Otherwise Specified

Peak Pulse Current on 10/1000us waveform(Note1, Fig3)	I_{PPM}	See Table 1	Amps
Peak Pulse Power Dissipation on 10/1000us waveform(Note1,2, Fig1)	P_{PPM}	Minimum 3000	Watts
Peak forward surge current (JEDEC Method) (Note 2,3)	I_{FSM}	200.0	Amps
Operation And Storage Temperature Range	T_J, T_{STG}	-55°C to +150°C	

NOTES:

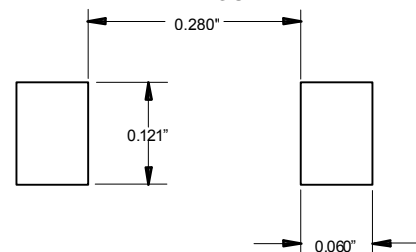
1. Non-repetitive current pulse per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.
2. Mounted on 8.0mm² copper pads to each terminal.
3. 8.3ms, single half sine-wave or equivalent square wave, duty cycle=4 pulses per. Minutes maximum.

DO-214AB (SMLJ) (LEAD FRAME)



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.079	.103	2.00	2.62	
B	.115	.121	2.92	3.07	
C	.002	.008	0.051	0.203	
D	.006	.012	0.152	0.305	
E	.030	.050	0.76	1.27	
F	.305	.320	7.75	8.13	
G	.260	.280	6.60	7.11	
H	.220	.245	5.59	6.22	

SUGGESTED SOLDER PAD LAYOUT



SMLJ5.0 thru SMLJ170CA

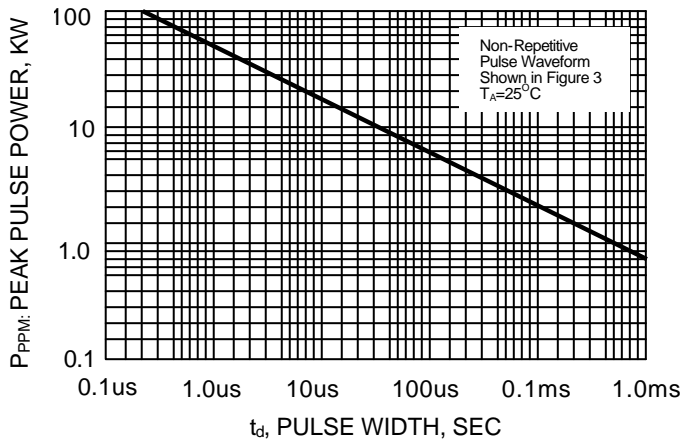


Fig. 1- PEAL PULSE POWER VS PULSE.TIME

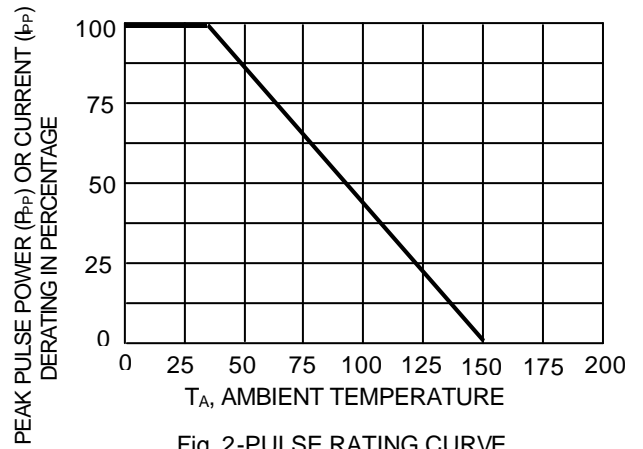


Fig. 2-PULSE RATING CURVE

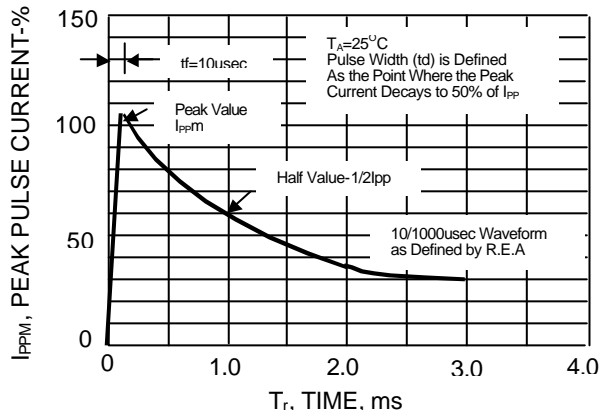


Fig. 3-PULSE WAVEFORM

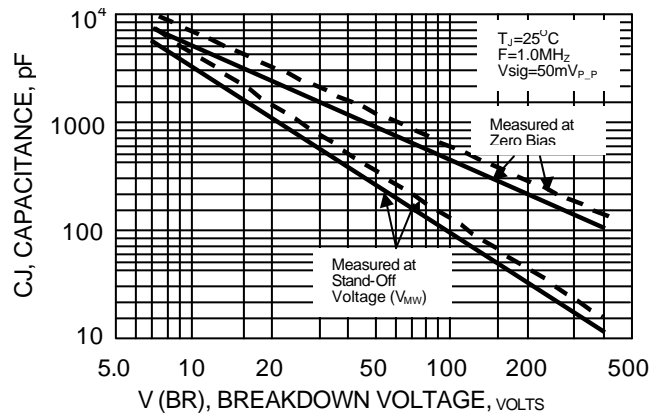


Fig. 4-TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE

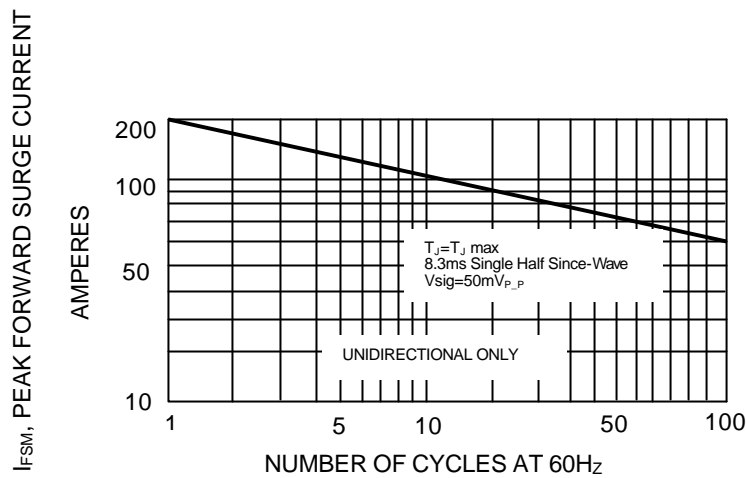


Fig-5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CUTTENT

SMLJ5.0 THRU SMLJ170CA

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE			MAXIMUM CLAMPING VOLTAGE@ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @ V_{WM} I_b	MARKING CODE
	V_{WM}	$V_{(BR)}$ @ I_T (VOLTS)		I_T (mA)				
	VOLTS	MIN	MAX					
SMLJ5.0	5.0	6.40	7.30	10	9.6	312.5	1000	HDD
SMLJ5.0A	5.0	6.40	7.00	10	9.2	326.0	1000	HDE
SMLJ6.0	6.0	6.67	8.15	10	11.4	263.2	1000	HDF
SMLJ6.0A	6.0	6.67	7.37	10	10.3	291.3	1000	HDG
SMLJ6.5	6.5	7.22	8.82	10	12.3	243.9	500	HDH
SMLJ6.5A	6.5	7.22	7.98	10	11.2	267.9	500	HDK
SMLJ7.0	7.0	7.78	9.51	10	13.3	225.6	200	HDL
SMLJ7.0A	7.0	7.78	8.60	10	12.0	250.0	200	HDM
SMLJ7.5	7.5	8.33	10.2	1	14.3	209.8	100	HDN
SMLJ7.5A	7.5	8.33	9.21	1	12.9	232.6	100	HDP
SMLJ8.0	8.0	8.89	10.9	1	15.0	200.0	50	HDQ
SMLJ8.0A	8.0	8.89	9.83	1	13.6	220.6	50	HDR
SMLJ8.5	8.5	9.44	11.5	1	15.9	118.8	25	HDS
SMLJ8.5A	8.5	9.44	10.4	1	14.4	208.4	25	HDT
SMLJ9.0	9.0	10.0	12.2	1	16.9	177.4	10	HDU
SMLJ9.0A	9.0	10.0	11.1	1	15.4	194.8	10	HDV
SMLJ10	10	11.1	13.6	1	18.8	159.6	5	HDW
SMLJ10A	10	11.1	12.3	1	17.0	176.4	5	HDX
SMLJ11	11	12.2	14.9	1	20.1	149.2	5	HDY
SMLJ11A	11	12.2	13.5	1	18.2	164.8	5	HDZ
SMLJ12	12	13.3	16.3	1	22.0	136.4	5	HED
SMLJ12A	12	13.3	14.7	1	19.9	150.6	5	HEE
SMLJ13	13	14.4	17.6	1	23.8	126.0	5	HEF
SMLJ13A	13	14.4	15.5	1	21.5	139.4	5	HEG
SMLJ14	14	15.6	19.1	1	25.8	116.2	5	HEH
SMLJ14A	14	15.6	17.2	1	23.2	129.4	5	HEK
SMLJ15	15	16.7	20.4	1	26.9	111.6	5	HEL
SMLJ15A	15	16.7	18.5	1	24.4	123.0	5	HEM
SMLJ16	16	17.8	21.8	1	28.8	104.2	5	HEN
SMLJ16A	16	17.8	19.7	1	26.0	115.4	5	HEP
SMLJ17	17	18.9	23.1	1	30.5	98.4	5	HEQ
SMLJ17A	17	18.9	20.9	1	27.6	106.6	5	HER
SMLJ18	18	20.0	24.4	1	32.2	93.2	5	HES
SMLJ18A	18	20.0	22.1	1	29.2	102.8	5	HET
SMLJ20	20	22.2	27.1	1	35.8	83.8	5	HEU
SMLJ20A	20	22.2	24.5	1	32.4	92.6	5	HEV
SMLJ22	22	24.4	29.8	1	39.4	76.2	5	HEW
SMLJ22A	22	24.4	26.9	1	35.5	84.4	5	HEX
SMLJ24	24	26.7	32.6	1	43.0	69.8	5	HEY
SMLJ24A	24	26.7	29.5	1	38.9	77.2	5	HEZ
SMLJ26	26	28.9	35.3	1	46.6	64.4	5	HFD
SMLJ26A	26	28.9	31.9	1	42.1	71.2	5	HFE

SMLJ5.0 THRU SMLJ170CA

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE			MAXIMUM CLAMPING VOLTAGE@ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @ V_{WM}	MARKING CODE
	V_{WM}	$V_{(BR)}$ @ I_T		I_T (mA)				
	VOLTS	MIN	MAX					
SMLJ28	28	31.1	38.0	1	50.0	60.0	5	HFF
SMLJ28A	28	31.1	34.4	1	45.4	66.0	5	HFG
SMLJ30	30	33.3	40.7	1	53.5	56.0	5	HFH
SMLJ30A	30	33.3	36.8	1	48.4	62.0	5	HFK
SMLJ33	33	36.7	44.9	1	59.0	50.4	5	HFL
SMLJ33A	33	36.7	40.6	1	53.3	56.2	5	HFM
SMLJ36	36	40.0	48.9	1	64.3	46.6	5	HFN
SMLJ36A	36	40.0	44.2	1	58.1	51.6	5	HFP
SMLJ40	40	44.4	54.3	1	71.4	42.0	5	HFQ
SMLJ40A	40	44.4	49.1	1	64.5	46.4	5	HFR
SMLJ43	43	47.8	58.4	1	76.7	39.2	5	HFS
SMLJ43A	43	47.8	52.8	1	69.4	43.2	5	HFT
SMLJ45	45	50.0	61.1	1	80.3	37.4	5	HFU
SMLJ45A	45	50.0	55.3	1	72.7	41.2	5	HFV
SMLJ48	48	53.3	65.1	1	85.5	35.0	5	HFW
SMLJ48A	48	53.3	58.9	1	77.4	38.8	5	HFX
SMLJ51	51	56.7	69.3	1	91.1	37.0	5	HFY
SMLJ51A	51	56.7	62.7	1	82.4	36.4	5	HFZ
SMLJ54	54	60.0	73.3	1	96.3	31.2	5	HGD
SMLJ54A	54	60.0	66.3	1	87.1	34.4	5	HGE
SMLJ58	58	64.4	78.7	1	103	39.2	5	HGF
SMLJ58A	58	64.4	71.2	1	93.6	32.0	5	HGG
SMLJ60	60	66.7	81.5	1	107	28.0	5	HGH
SMLJ60A	60	66.7	73.7	1	96.8	31.0	5	HGK
SMLJ64	64	71.1	86.9	1	114	26.4	5	HGL
SMLJ64A	64	71.1	78.6	1	103	29.2	5	HGM
SMLJ70	70	77.8	95.1	1	125	24.0	5	HGN
SMLJ70A	70	77.8	86.0	1	113	26.6	5	HGP
SMLJ75	75	83.3	102.0	1	134	22.4	5	HGQ
SMLJ75A	75	83.3	92.1	1	121	24.8	5	HGR
SMLJ78	78	86.7	106.0	1	139	21.6	5	HGS
SMLJ78A	78	86.7	95.8	1	126	22.8	5	HGT
SMLJ85	85	94.4	115.0	1	151	19.8	5	HGU
SMLJ85A	85	94.4	104.0	1	137	20.8	5	HGV
SMLJ90	90	100	122.0	1	160	18.8	5	HGW
SMLJ90A	90	100	111.0	1	146	20.6	5	HGX
SMLJ100	100	111	136	1	179	16.8	5	HGY
SMLJ100A	100	111	123	1	162	18.6	5	HGZ
SMLJ110	110	122	149.0	1	196	15.4	5	HHD
SMLJ110A	110	122	135.0	1	177	16.8	5	HHE
SMLJ120	120	133	163	1	214	14.0	5	HHF
SMLJ120A	120	133	147	1	193	15.6	5	HHG

SMLJ5.0 THRU SMLJ170CA

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}@I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE@ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @ V_{WM} I_b	MARKING CODE
	VOLTS	MIN	MAX	I_T (mA)	VOLTS	(AMPS)	(μ A)	
SMLJ130	130	144	176.0	1	231	13.0	5	HHH
SMLJ130A	130	144	159.0	1	209	14.4	5	HHK
SMLJ150	150	167	204.0	1	268	11.2	5	HHL
SMLJ150A	150	167	185.0	1	243	12.4	5	HHM
SMLJ160	160	178	218.0	1	287	10.4	5	HHN
SMLJ160A	160	178	197.0	1	259	11.6	5	HHP
SMLJ170	170	189	231.0	1	304	9.8	5	HHO
SMLJ170A	170	189	209.0	1	275	11.0	5	HHR

SMLJ5.0 THRU SMLJ170CA

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE			MAXIMUM CLAMPING VOLTAGE@ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @ V_{WM}	MARKING CODE		
	V_{WM}	$V_{(BR)}$ @ I_T (VOLTS)		I_T (mA)					VOLTS	I_b
	VOLTS	MIN	MAX							
SMLJ5.0 C	5.0	6.40	7.30	10	9.6	312.5	2000	IDD		
SMLJ5.0 CA	5.0	6.40	7.00	10	9.2	326.0	2000	IDE		
SMLJ6.0 C	6.0	6.67	8.15	10	11.4	263.2	2000	IDF		
SMLJ6.0 CA	6.0	6.67	7.37	10	10.3	291.3	2000	IDG		
SMLJ6.5 C	6.5	7.22	8.82	10	12.3	243.9	1000	IDH		
SMLJ6.5 CA	6.5	7.22	7.98	10	11.2	267.9	1000	IDK		
SMLJ7.0 C	7.0	7.78	9.51	10	13.3	225.6	400	IDL		
SMLJ7.0 CA	7.0	7.78	8.60	10	12.0	250.0	400	IDM		
SMLJ7.5 C	7.5	8.33	10.20	1	14.3	209.8	200	IDN		
SMLJ7.5 CA	7.5	8.33	9.21	1	12.9	232.6	200	IDP		
SMLJ8.0 C	8.0	8.89	10.9	1	15.0	200.0	100	IDQ		
SMLJ8.0 CA	8.0	8.89	9.83	1	13.6	220.6	100	IDR		
SMLJ8.5 C	8.5	9.44	11.50	1	15.9	168.8	50	IDS		
SMLJ8.5 CA	8.5	9.44	10.40	1	14.4	208.4	50	IDT		
SMLJ9.0 C	9.0	10.0	12.2	1	16.9	177.4	20	IDU		
SMLJ9.0 CA	9.0	10.0	11.1	1	15.4	194.8	20	IDV		
SMLJ10 C	10	11.1	13.6	1	18.8	159.6	5	IDW		
SMLJ10 CA	10	11.1	12.3	1	17.0	176.4	5	IDX		
SMLJ11 C	11	12.2	14.9	1	20.1	149.2	5	IDY		
SMLJ11 CA	11	12.2	13.5	1	18.2	184.8	5	IDZ		
SMLJ12 C	12	13.3	16.3	1	22.0	136.4	5	IED		
SMLJ12 CA	12	13.3	14.7	1	19.9	150.6	5	IEE		
SMLJ13 C	13	14.4	17.6	1	23.8	126.0	5	IEF		
SMLJ13 CA	13	14.4	15.9	1	21.5	139.4	5	IEG		
SMLJ14 C	14	15.6	19.1	1	25.8	116.2	5	IEH		
SMLJ14 CA	14	15.6	17.2	1	23.2	129.4	5	IEK		
SMLJ15 C	15	16.7	20.4	1	26.9	111.6	5	IEL		
SMLJ15 CA	15	16.7	18.5	1	24.4	123.0	5	IEM		
SMLJ16 C	16	17.8	21.8	1	28.8	104.2	5	IEN		
SMLJ16 CA	16	17.8	19.7	1	26.0	115.4	5	IEP		
SMLJ17 C	17	18.9	23.1	1	30.5	98.4	5	IEQ		
SMLJ17 CA	17	18.9	20.9	1	27.6	106.6	5	IER		
SMLJ18 C	18	20.0	24.4	1	32.2	93.2	5	IES		
SMLJ18 CA	18	20.0	22.1	1	29.2	102.8	5	IET		
SMLJ20 C	20	22.2	27.1	1	35.8	83.8	5	IEU		
SMLJ20 CA	20	22.2	24.1	1	32.4	92.6	5	IEV		
SMLJ22 C	22	24.4	29.8	1	39.4	76.2	5	IEW		
SMLJ22 CA	22	24.4	26.9	1	35.5	84.4	5	IEX		
SMLJ24 C	24	26.7	32.6	1	43.0	69.8	5	IEY		
SMLJ24 CA	24	26.7	29.5	1	38.9	77.2	5	IEZ		
SMLJ26 C	26	28.9	35.3	1	46.6	64.4	5	IFD		
SMLJ26 CA	26	28.9	31.9	1	42.1	71.2	5	IFE		

SMLJ5.0 THRU SMLJ170CA

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MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE			MAXIMUM CLAMPING VOLTAGE@ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @ V_{WM}	MARKING CODE		
	V_{WM}	$V_{(BR)}$ @ I_T (VOLTS)		I_T (mA)					VOLTS	I_b
	VOLTS	MIN	MAX							
SMLJ28C	28	31.1	38.0	1	50.0	60.0	5	IFF		
SMLJ28CA	28	31.1	34.4	1	45.4	66.0	5	IFG		
SMLJ30C	30	33.3	40.7	1	53.5	56.0	5	IFH		
SMLJ30CA	30	33.3	36.8	1	48.4	62.0	5	IFK		
SMLJ33C	33	36.7	44.9	1	59.0	50.4	5	IFL		
SMLJ33CA	33	36.7	40.6	1	53.3	56.2	5	IFM		
SMLJ36C	36	40.0	48.9	1	64.3	46.6	5	IFN		
SMLJ36CA	36	40.0	44.2	1	58.1	51.6	5	IFP		
SMLJ40C	40	44.4	54.3	1	71.4	42.0	5	IFQ		
SMLJ40CA	40	44.4	49.1	1	64.5	46.4	5	IFR		
SMLJ43C	43	47.8	58.4	1	76.7	39.2	5	IFS		
SMLJ43CA	43	47.8	52.8	1	69.4	43.2	5	IFT		
SMLJ45C	45	50.0	61.1	1	80.3	37.4	5	IFU		
SMLJ45CA	45	50.0	55.3	1	72.7	41.2	5	IFV		
SMLJ48C	48	53.3	65.1	1	85.5	35.0	5	IFW		
SMLJ48CA	48	53.3	58.9	1	77.4	38.8	5	IFX		
SMLJ51C	51	56.7	69.3	1	91.1	37.0	5	IFY		
SMLJ51CA	51	56.7	62.7	1	82.4	36.4	5	IFZ		
SMLJ54C	54	60.0	73.3	1	96.3	31.2	5	IGD		
SMLJ54CA	54	60.0	66.3	1	87.1	34.4	5	IGE		
SMLJ58C	58	64.4	78.7	1	103	39.2	5	IGF		
SMLJ58CA	58	64.4	71.2	1	93.6	32.0	5	IGG		
SMLJ60C	60	66.7	81.5	1	107	28.0	5	IGH		
SMLJ60CA	60	66.7	73.7	1	96.8	31.0	5	IGK		
SMLJ64C	64	71.1	86.9	1	114	26.4	5	IGL		
SMLJ64CA	64	71.1	78.6	1	103	29.2	5	IGM		
SMLJ70C	70	77.8	95.1	1	125	24.0	5	IGN		
SMLJ70CA	70	77.8	86.0	1	113	26.6	5	IGP		
SMLJ75C	75	83.3	102.0	1	134	22.4	5	IGQ		
SMLJ75CA	75	83.3	92.1	1	121	24.8	5	IGR		
SMLJ78C	78	86.7	106.0	1	139	21.6	5	IGS		
SMLJ78CA	78	86.7	95.8	1	126	22.8	5	IGT		
SMLJ85C	85	94.4	115.0	1	151	19.8	5	IGU		
SMLJ85CA	85	94.4	104.0	1	137	20.8	5	IGV		
SMLJ90C	90	100	122.0	1	160	18.8	5	IGW		
SMLJ90CA	90	100	111.0	1	146	20.6	5	IGX		
SMLJ100C	100	111	136	1	179	16.8	5	IGY		
SMLJ100CA	100	111	123	1	162	18.6	5	IGZ		
SMLJ110C	110	122	149.0	1	196	15.4	5	IHD		
SMLJ110CA	110	122	135.0	1	177	16.8	5	IHE		
SMLJ120C	120	133	163	1	214	14.0	5	IHF		
SMLJ120CA	120	133	147	1	193	15.6	5	IHG		

SMCL5.0 THRU SMCL170CA

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}@I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE@ I_{PP}	PEAK PULSE CURRENT I_{PP}	MAXIMUM REVERSE LEAKAGE @ V_{WM} I_b	MARKING CODE
	VOLTS	MIN	MAX	I_T (mA)	VOLTS	(AMPS)	(μ A)	
SMLJ130C	130	144	176.0	1	231	13.0	5	IHH
SMLJ130CA	130	144	159.0	1	209	14.4	5	IHK
SMLJ150C	150	167	204.0	1	268	11.2	5	IHL
SMLJ150CA	150	167	185.0	1	243	12.4	5	IHM
SMLJ160C	160	178	218.0	1	287	10.4	5	IHN
SMLJ160CA	160	178	197.0	1	259	11.6	5	IHP
SMLJ170C	170	189	231.0	1	304	9.8	5	IHO
SMLJ170CA	170	189	209.0	1	275	11.0	5	IHR