



Micro Commercial Components
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SMLJ5.0 THRU SMLJ170CA

Transient Voltage Suppressor 5.0 to 170 Volts 3000 Watt

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-O

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

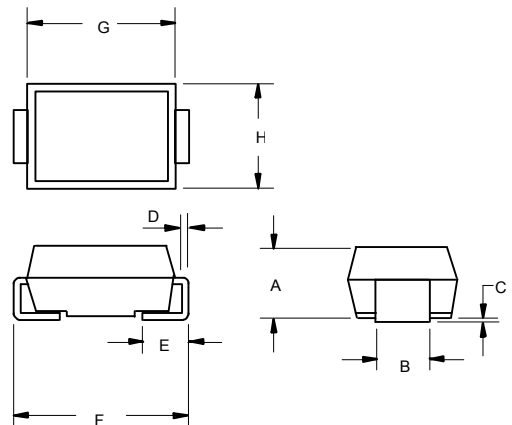
Maximum Ratings @ 25°C Unless Otherwise Specified

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:

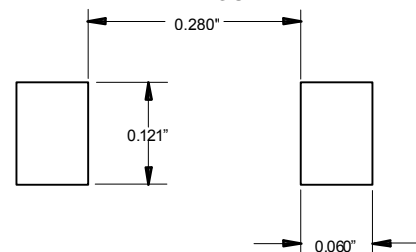
1. Non-repetitive current pulse per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.
2. Mounted on 8.0mm² copper pads to each terminal.
3. 8.3ms, single half sine-wave or equivalent square wave, duty cycle=4 pulses per. Minutes maximum.

DO-214AB (SMLJ) (LEAD FRAME)



DIM	DIMENSIONS				NOTE
	INCHES		MM		
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

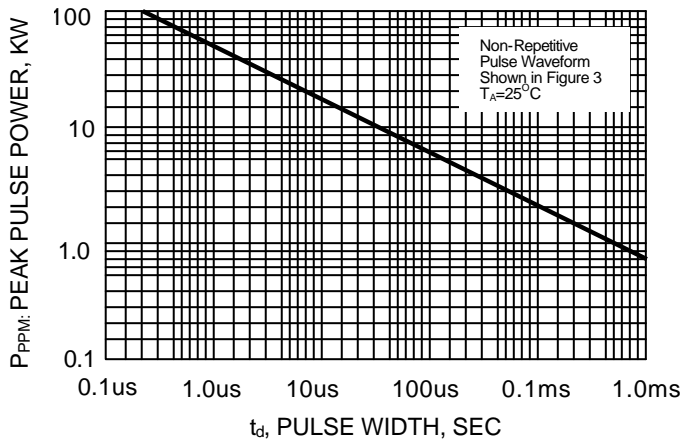


Fig. 1- PEAL PULSE POWER VS PULSE.TIME

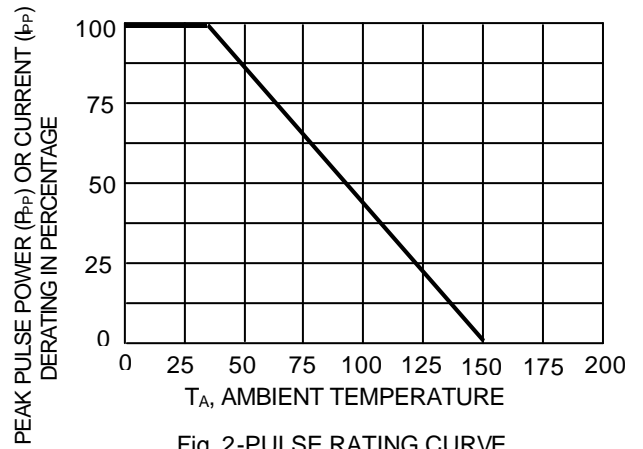


Fig. 2-PULSE RATING CURVE

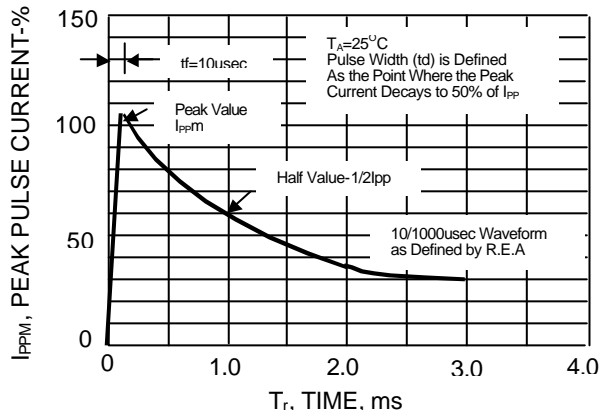


Fig. 3-PULSE WAVEFORM

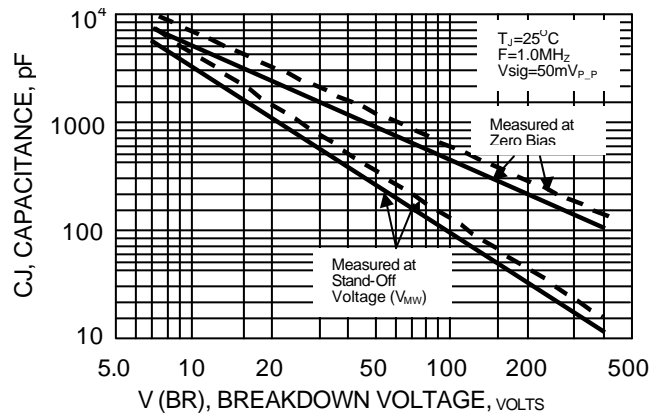


Fig. 4-TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE

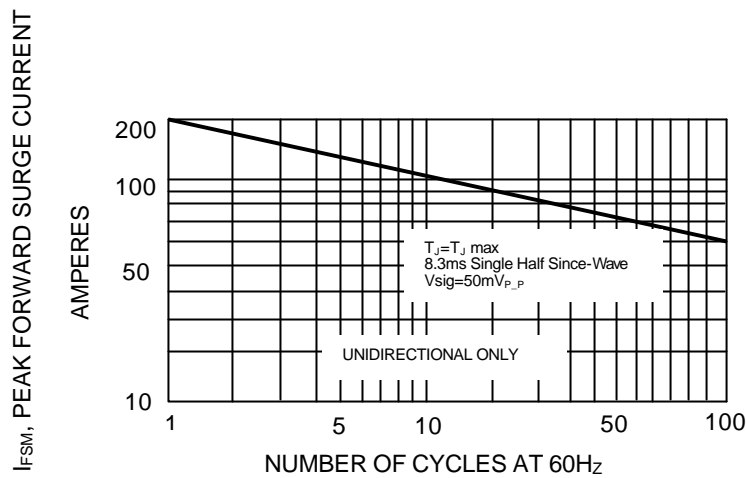


Fig-5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CUTTENT

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

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	V_{WM}	$V_{(BR)}$ @ I_T		I_T (mA)					VOLTS	I_b
	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		

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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

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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		I_T (mA)					VOLTS	(AMPS)	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			
SMLJ13C	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			
SMLJ16C	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			

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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)					I_{PP}	I_{PP}	I_{PP}
	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

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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