SPECIFICATION SHEET

SMD TRANSIENT VOLTAGE SUPPRESSORS DIODES SMF SERIES

SPECIFICATION SHEET NO.	S0318- SMF075AL00S0FP	
ORIGINAL MFG/PART NO.	LGE Diodes/SMF7.5A-L	
NEXTGEN PART CODE	SMF075AL00S0FP	Indicate This Code For RFQ /Order
DATE	Mar. 18, 2025	
REVISION	A1	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	SMD Transient Voltage Suppressor (TVs) Diodes, SMF Series Case SMF/SOD-123FL, 2 Pads, Unidirectional Type, Stand-off Voltage 7.5V, Peak Pulse Power: 200 Watts, Reverse Surge Current: 15.50A Max. Operating Temp. Range -55°C ~+150°C Package in Tape/Reel, 3000pcs/Reel REACH/RoHS/RoHS III/ Compliant and Halogen Free (HF)	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE
Issued/Checked/Approved Mandy Xu Ruby Zhang Jack Zhang
Effective Date: Mar. 18, 2025

CUSTOMER APPROVE
Date:

MAIN FEATURE

Image shown is a representation only. Exact specifications should be obtained from the product dimension.

- Glass Passivated Chip
- 200W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- Uni-Directional and Bi-directional Polarity Option
- Low Leakage
- Excellent Clamping Capability
- Very Fast Response Time: Typically Less Than 1.0ns
- Thermal Resistance Junction- To Ambient: 220 °C/W
- Thermal Resistance Junction- To Lead: 100 °C/W
- ESD Protection Level (Air & Contact) Base On IEC 61000-4-2
- EFT Protection Level Base On IEC 61000-4-4
- Short Lead time
- Cross Competitors Parts and More.
- REACH/RoHS/RoHS III/ Compliant and Halogen Free (HF)

APPLICATION

- For SMD application

ELECTRICAL CHARACTERISTICS

- See Page 5 ~Page 11 For Different Part Code
- All Parameters are Subject To NextGen Components' Final Confirmation

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code SMF075AL00S0FP For RFQ and Order.

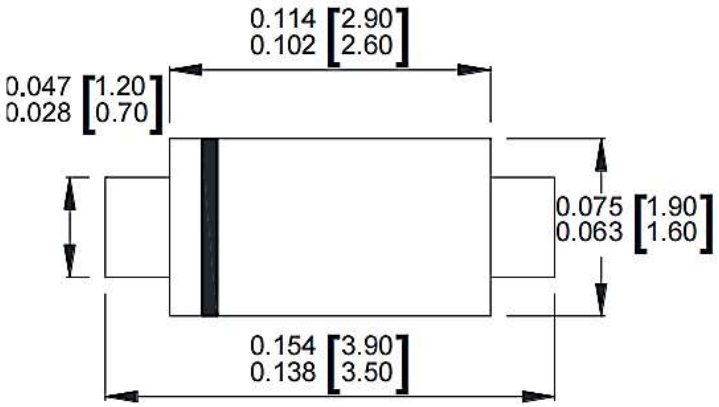
PART CODE GUIDE

RFQ
Request For Quotation

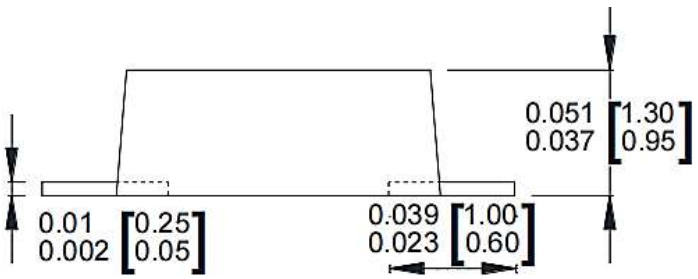
CODE	NAME	KEY SPECIFICATION OPTION
SMF	Product Series Code	SMD Transient Voltage Suppressors (TVs) Diodes, Case SMF/SOD-123FL, 2 Pads
075A	Mode code	075A: Working Peak Reverse Voltage 7.5V, Unidirectional Polarity Type
L00S	Internal Control Code	Letter or Digits (A~Z, a~z or 1~9)
0FP	Marking Code	Marking “FP”
XX	Special/Custom Parameters Code	Letter or Digits (A~Z, a~z or 1~9) for Special Parametric; Blank: N/A

DIMENSION- Unit: Inch [mm], Case SMF/SOD-123FL Outline

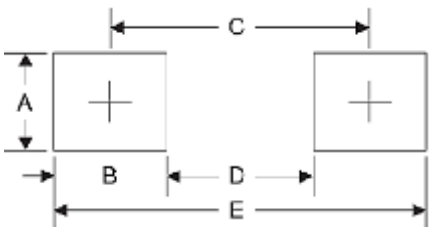
Top View



Side View



Recommend Pad Layout



SYMBOL	A	B	C	D	E
Unit (Inch)	0.047	0.047	0.126	0.079	0.173
Unit (mm)	1.20	1.20	3.20	2.00	4.40

MECHANICAL DATA

CASE	EXPOXY	LEAD	POLARITY	MOUNTING POSITION	MARKING
JEDEC SMF/SOD-123FL Molded Plastic Body	UL 94V-0 Rate Flame Retardant	Solderable per MIL-STD 750, Method 2026	Color Band Denotes Cathode End Except Bipolar	Any	See Marking Code List

MAX. RATING & CHARACTERISTICS - Ratings at 25℃ ambient temperature unless otherwise specified.

PARAMETER	SYMBOLS	VALUE	UNITS
Peak Power Dissipation with 10/1000μs Waveform See Note 1	P_{pp}	200	W
Peak Power Dissipation with 8/20μs waveform See Note 1	P_{pp}	1000	W
Peak Pulse Current with a 10/1000μs waveform See Note 1	I_{pp}	See Page 6~ Page 11	A
Power Dissipation On Infinite Heatsink at TL = 75 °C	P_D	0.4	W
Peak Forward Surge Current 8.3ms Single Half Sine- Wave Unidirectional Type Only	I_{FSM}	20	A
Maximum instantaneous forward voltage at 25A Unidirectional Type Only	V_F	3.5	V
Operating Junction And Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	°C

Note

1. Non-repetitive Current Pulse Per Fig.5 And Derated Above TA= 25 °C Per Fig.1
2. Measured On 8.3 Ms Single Half Sine-wave Or Equivalent Square Wave, Duty Cycle = 4 Pulses Per Minute Max.

UNIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25℃

Part Code	Working Peak Reverse Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage	Max. Reverse Surge Current	Max. Clamping Voltage	Marking Code
		V_{BR} @ I_T						
	V_{RWM}	Min.	Max.	I_T	I_R @ V_{RWM}	I_{PP}	V_C @ I_{PP}	
	V	V	V	mA	µA	A	V	
SMF033AL00S0FD	3.3	4.22	6.58	10	500	22.7	8.8	FD
SMF050AL00S0FE	5	6.4	7	10	400	21.74	9.2	FE
SMF060AL00S0FG	6	6.67	7.37	10	400	19.42	10.3	FG
SMF065AL00S0FK	6.5	7.22	7.98	10	250	17.86	11.2	FK
SMF070AL00S0FM	7	7.78	8.6	10	100	16.67	12	FM
SMF075AL00S0FP	7.5	8.33	9.21	1	50	15.5	12.9	FP
SMF080AL00S0FR	8	8.89	9.83	1	25	14.71	13.6	FR
SMF085AL00S0FT	8.5	9.44	10.4	1	10	13.89	14.4	FT
SMF090AL00S0FV	9	10	11.1	1	5	12.99	15.4	FV
SMF10AL000S0FX	10	11.1	12.3	1	2.5	11.76	17	FX
SMF11AL000S0FZ	11	12.2	13.5	1	2.5	10.99	18.2	FZ
SMF12AL000S0HE	12	13.3	14.7	1	2.5	10.05	19.9	HE
SMF13AL000S0HG	13	14.4	15.9	1	1	9.3	21.5	HG
SMF14AL000S0HK	14	15.6	17.2	1	1	8.62	23.2	HK
SMF15AL000S0HM	15	16.7	18.5	1	1	8.2	24.4	HM
SMF16AL000S0HP	16	17.8	19.7	1	1	7.69	26	HP
SMF17AL000S0HR	17	18.9	20.9	1	1	7.25	27.6	HR
SMF18AL000S0HT	18	20	22.1	1	1	6.85	29.2	HT
SMF19AL000S0HB	19	21.1	23.3	1	1	6.54	30.6	HB
SMF20AL000S0HV	20	22.2	24.5	1	1	6.17	32.4	HV

UNIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25℃

Part Code	Working Peak Reverse Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage	Max. Reverse Surge Current	Max. Clamping Voltage	Marking Code
		V_{BR} @ I_T						
	V_{RWM}	Min.	Max.	I_T	I_R @ V_{RWM}	I_{PP}	V_C @ I_{PP}	
	V	V	V	mA	µA	A	V	
SMF22AL000S0HX	22	24.4	26.9	1	1	5.63	35.5	HX
SMF24AL000S0HZ	24	26.7	29.5	1	1	5.14	38.9	HZ
SMF26AL000S0JE	26	28.9	31.9	1	1	4.75	42.1	JE
SMF28AL000S0JG	28	31.1	34.4	1	1	4.41	45.4	JG
SMF30AL000S0JK	30	33.3	36.8	1	1	4.13	48.4	JK
SMF33AL000S0JM	33	36.7	40.6	1	1	3.75	53.3	JM
SMF36AL000S0JP	36	40	44.2	1	1	3.44	58.1	JP
SMF40AL000S0JR	40	44.4	49.1	1	1	3.1	64.5	JR
SMF43AL000S0JT	43	47.8	52.8	1	1	2.88	69.4	JT
SMF45AL000S0JV	45	50	55.3	1	1	2.75	72.7	JV
SMF48AL000S0JX	48	53.3	58.9	1	1	2.58	77.4	JX
SMF51AL000S0JZ	51	56.7	62.7	1	1	2.43	82.4	JZ
SMF54AL000S0XE	54	60	66.3	1	1	2.3	87.1	XE
SMF58AL000S0XG	58	64.4	71.2	1	1	2.14	93.6	XG
SMF60AL000S0XK	60	66.7	73.7	1	1	2.07	96.8	XK
SMF64AL0000XM	64	71.1	78.6	1	1	1.94	103	XM
SMF70AL000S0XP	70	77.8	86	1	1	1.77	113	XP
SMF75AL000S0XR	75	83.3	92.1	1	1	1.65	121	XR
SMF78AL000S0XT	78	86.7	95.8	1	1	1.59	126	XT
SMF80AL000S0XB	80	88.8	97.6	1	1	1.55	129	XB

UNIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25℃

Part Code	Working Peak Reverse Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage	Max. Reverse Surge Current	Max. Clamping Voltage	Marking Code
		V_{BR} @ I_T						
	V_{RWM}	Min.	Max.	I_T	I_R @ V_{RWM}	I_{PP}	V_C @ I_{PP}	
	V	V	V	mA	µA	A	V	
SMF85AL000S0XV	85	94.4	104	1	1	1.46	137	XV
SMF90AL000SXX	90	100	111	1	1	1.37	146	XX
SMF100AL00S0XZ	100	111	123	1	1	1.23	162	XZ
SMF110AL00S0TE	110	122	135	1	1	1.13	177	TE
SMF120AL00S0TG	120	133	147	1	1	1.04	193	TG
SMF130AL00S0TK	130	144	159	1	1	0.96	209	TK
SMF140AL00S0TB	140	155	171	1	1	0.89	224	TB
SMF150AL00S0TM	150	167	185	1	1	0.82	243	TM
SMF160AL00S0TP	160	178	197	1	1	0.77	259	TP
SMF170AL00S0TR	170	189	209	1	1	0.73	275	TR
SMF180AL00S0TT	180	200	220	1	1	0.68	292	TT
SMF190AL00S0TV	190	211	232	1	1	0.65	308	TV
SMF200AL00S0TX	200	224	247	1	1	0.62	324	TX
SMF220AL00S0TZ	220	246	272	1	1	0.56	356	TZ

BIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25℃

Part Code	Working Peak Reverse Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage	Max. Reverse Surge Current	Max. Clamping Voltage	Marking Code
		V_{BR} @ I_T						
	V_{RWM}	Min.	Max.	I_T	I_R @ V_{RWM}	I_{PP}	V_C @ I_{PP}	
	V	V	V	mA	µA	A	V	
SMF033CAL0S0KD	3.3	4.22	6.58	10	500	22.7	8.8	KD
SMF050CAL0S0KE	5	6.4	7	10	400	21.74	9.2	KE
SMF060CAL0S0KG	6	6.67	7.37	10	400	19.42	10.3	KG
SMF065CAL0S0KK	6.5	7.22	7.98	10	250	17.86	11.2	KK
SMF070CAL0S0KM	7	7.78	8.6	10	100	16.67	12	KM
SMF075CAL0S0KP	7.5	8.33	9.21	1	50	15.5	12.9	KP
SMF080CAL0S0KR	8	8.89	9.83	1	25	14.71	13.6	KR
SMF085CAL0S0KT	8.5	9.44	10.4	1	10	13.89	14.4	KT
SMF090CAL0S0KV	9	10	11.1	1	5	12.99	15.4	KV
SMF10CAL00S0KX	10	11.1	12.3	1	2.5	11.76	17	KX
SMF11CAL00S0KZ	11	12.2	13.5	1	2.5	10.99	18.2	KZ
SMF12CAL00S0LE	12	13.3	14.7	1	2.5	10.05	19.9	LE
SMF13CAL00S0LG	13	14.4	15.9	1	1	9.3	21.5	LG
SMF14CAL00S0LK	14	15.6	17.2	1	1	8.62	23.2	LK
SMF15CAL00S0LM	15	16.7	18.5	1	1	8.2	24.4	LM
SMF16CAL00S0LP	16	17.8	19.7	1	1	7.69	26	LP
SMF17CAL00S0LR	17	18.9	20.9	1	1	7.25	27.6	LR
SMF18CAL00S0LT	18	20	22.1	1	1	6.85	29.2	LT
SMF19CAL00S0LB	19	21.1	23.3	1	1	6.54	30.6	LB
SMF20CAL00S0LV	20	22.2	24.5	1	1	6.17	32.4	LV

BIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25℃

Part Code	Working Peak Reverse Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage	Max. Reverse Surge Current	Max. Clamping Voltage	Marking Code
		V_{BR} @ I_T						
	V_{RWM}	Min.	Max.	I_T	I_R @ V_{RWM}	I_{PP}	V_C @ I_{PP}	
	V	V	V	mA	µA	A	V	
SMF22CAL00S0LX	22	24.4	26.9	1	1	5.63	35.5	LX
SMF24CAL00S0LZ	24	26.7	29.5	1	1	5.14	38.9	LZ
SMF26CAL00S0ME	26	28.9	31.9	1	1	4.75	42.1	ME
SMF28CAL00S0MG	28	31.1	34.4	1	1	4.41	45.4	MG
SMF30CAL00S0MK	30	33.3	36.8	1	1	4.13	48.4	MK
SMF33CAL00S0MM	33	36.7	40.6	1	1	3.75	53.3	MM
SMF36CAL00S0MP	36	40	44.2	1	1	3.44	58.1	MP
SMF40CAL00S0MR	40	44.4	49.1	1	1	3.1	64.5	MR
SMF43CAL00S0MT	43	47.8	52.8	1	1	2.88	69.4	MT
SMF45CAL00S0MV	45	50	55.3	1	1	2.75	72.7	MV
SMF48CAL00S0MX	48	53.3	58.9	1	1	2.58	77.4	MX
SMF51CAL00S0MZ	51	56.7	62.7	1	1	2.43	82.4	MZ
SMF54CAL00S0NE	54	60	66.3	1	1	2.3	87.1	NE
SMF58CAL00S0NG	58	64.4	71.2	1	1	2.14	93.6	NG
SMF60CAL00S0NK	60	66.7	73.7	1	1	2.07	96.8	NK
SMF64CAL00S0NM	64	71.1	78.6	1	1	1.94	103	NM
SMF70CAL00S0NP	70	77.8	86	1	1	1.77	113	NP
SMF75CAL00S0NR	75	83.3	92.1	1	1	1.65	121	NR
SMF78CAL00S0NT	78	86.7	95.8	1	1	1.59	126	NT
SMF80CAL00S0NB	80	88.8	97.6	1	1	1.55	129	NB

BIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25℃

Part Code	Working Peak Reverse Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage	Max. Reverse Surge Current	Max. Clamping Voltage	Marking Code
		V_{BR} @ I_T						
	V_{RWM}	Min.	Max.	I_T	I_R @ V_{RWM}	I_{PP}	V_C @ I_{PP}	
	V	V	V	mA	μA	A	V	
SMF85CAL00S0NV	85	94.4	104	1	1	1.46	137	NV
SMF90CAL00S0NX	90	100	111	1	1	1.37	146	NX
SMF100CAL0S0NZ	100	111	123	1	1	1.23	162	NZ
SMF110CAL0S0PE	110	122	135	1	1	1.13	177	PE
SMF120CAL0S0PG	120	133	147	1	1	1.04	193	PG
SMF130CAL0S0PK	130	144	159	1	1	0.96	209	PK
SMF140CAL0S0PB	140	155	171	1	1	0.89	224	PB
SMF150CAL0S0PM	150	167	185	1	1	0.82	243	PM
SMF160CAL0S0PP	160	178	197	1	1	0.77	259	PP
SMF170CAL0S0PR	170	189	209	1	1	0.73	275	PR
SMF180CAL0S0PT	180	200	220	1	1	0.68	292	PT
SMF190CAL0S0PV	190	211	232	1	1	0.65	308	PV
SMF200CAL0S0PX	200	224	247	1	1	0.62	324	PX
SMF220CAL0S0PZ	220	246	272	1	1	0.56	356	PZ

Note:

- The available parts are "A" type only, the parts without A(V_{BR} is ±10%) is not available
- For Bi-Directional devices having V_R of 10 Volts and under, the I_R limit is double

RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

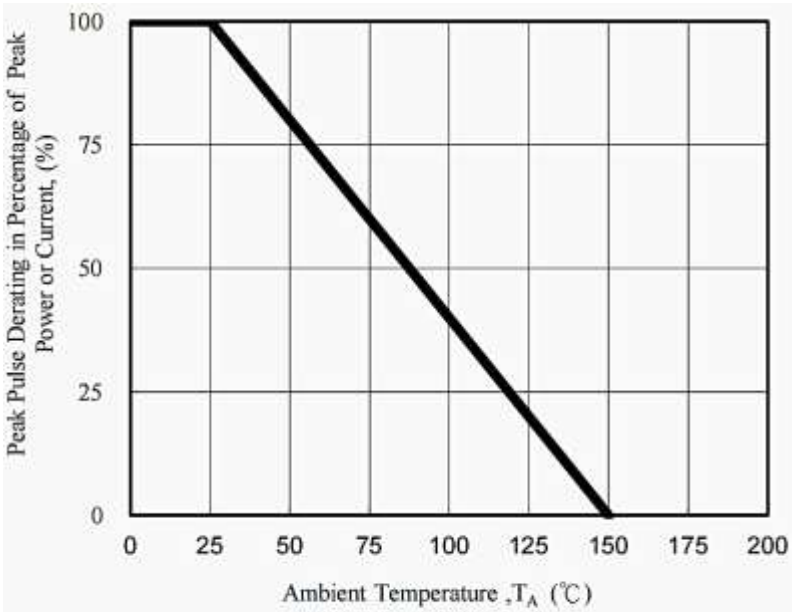


Fig. 1 - Pulse Derating Curve

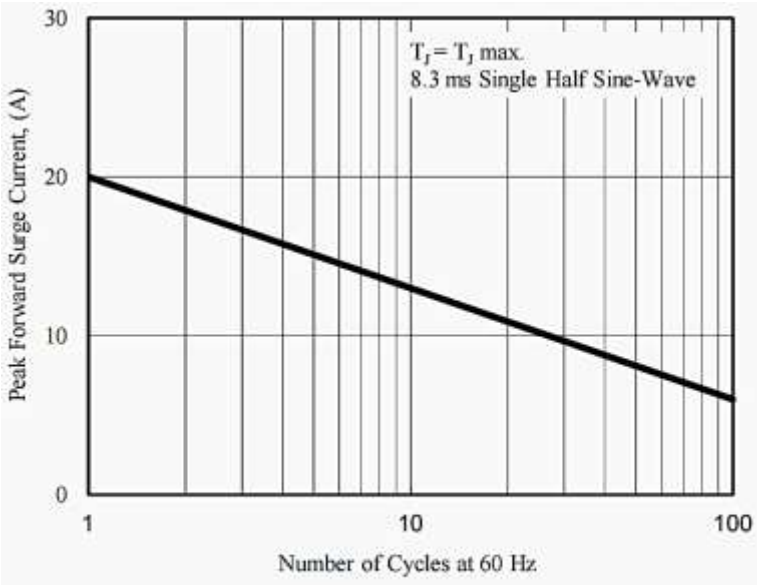


Fig. 2 - Maximum Non-Repetitive Surge Current

RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25℃ Unless Otherwise Specified.

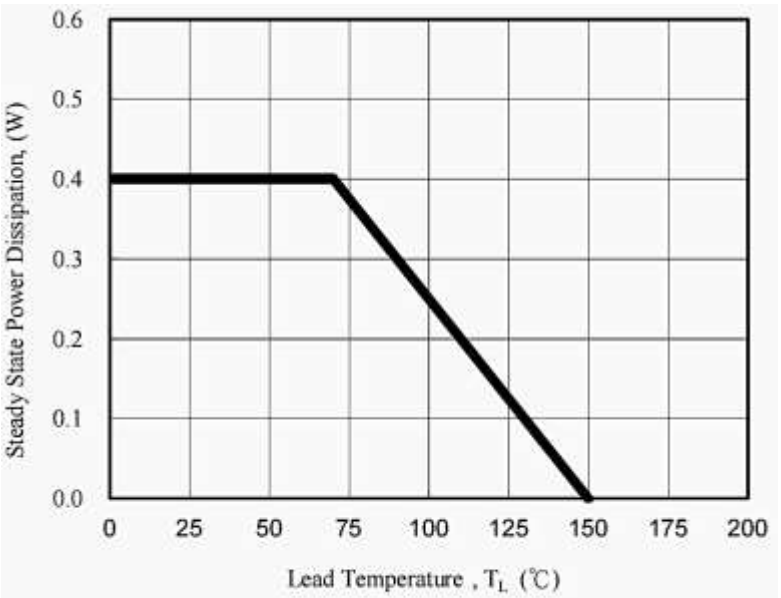


Fig. 3 - Steady State Power Derating Curve

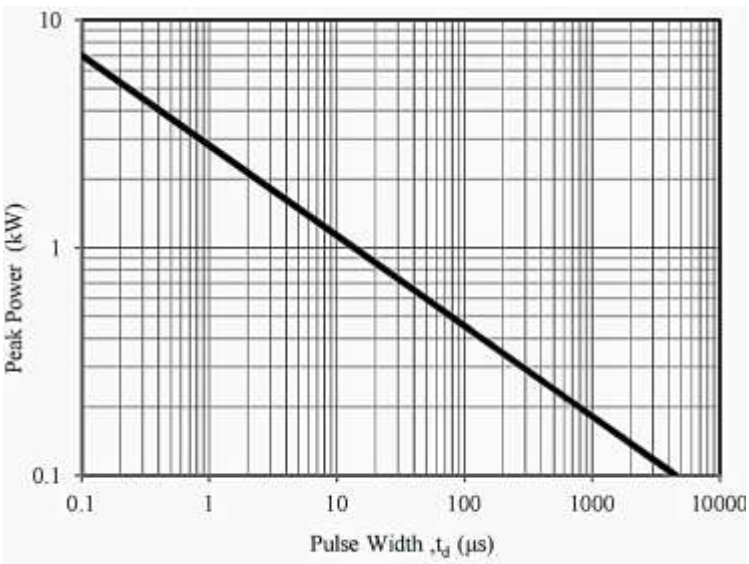


Fig. 4 - Peak Pulse Power Rating Curve

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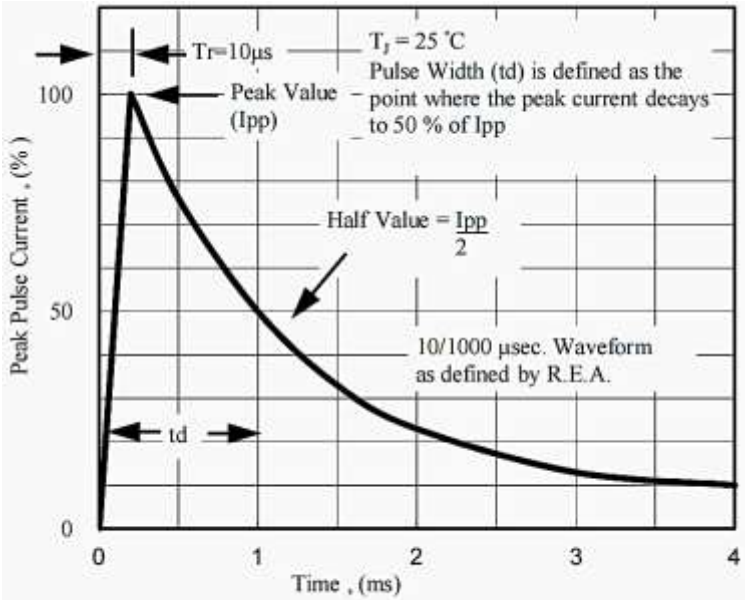


Fig. 5 - Pulse Waveform

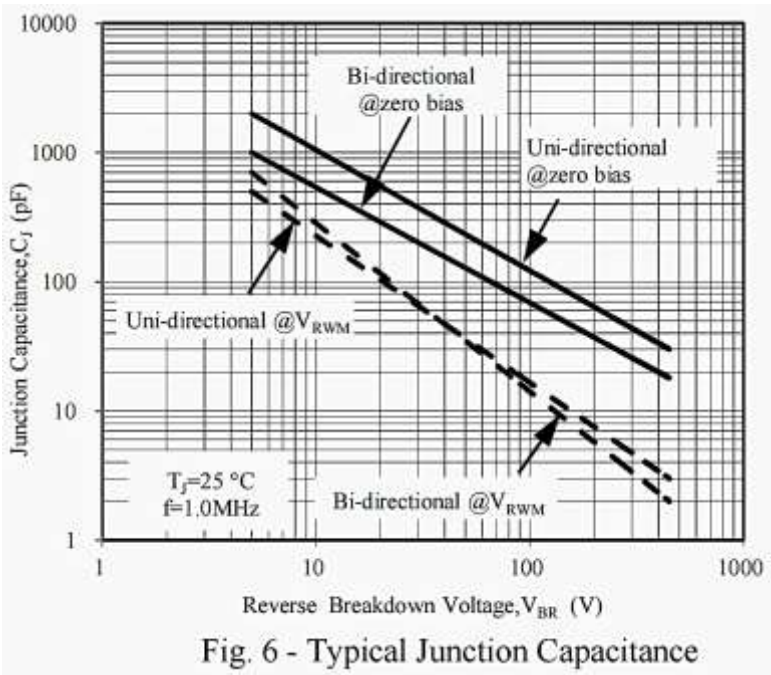
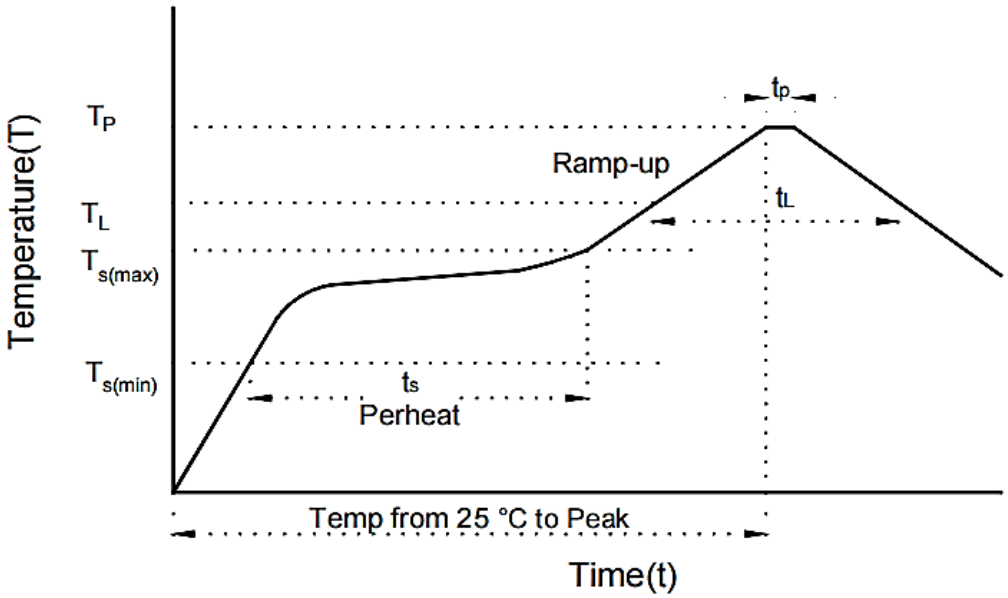


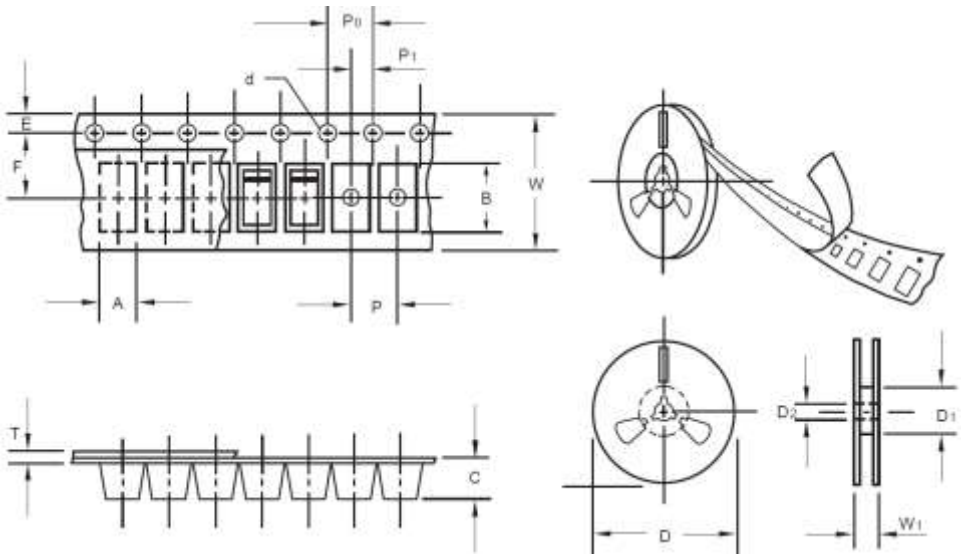
Fig. 6 - Typical Junction Capacitance

RECOMMENDED SOLDERING PARAMETERS – FOR REFERENCE ONLY



PROFILE FEATURE		PB-FREE ASSEMBLY
Average Ramp-up Rate (Ts Max to Tp)		3°C/second Max
Preheat	Temperature Min (Ts Min.)	150°C
	Temperature Max (Ts Max.)	200°C
	Time (ts Min. to ts Max.)	60 ~ 180 seconds
Time maintained above	Temperature (T_L)	220°C
	Time (t_L)	60 ~ 150 seconds
Peak/Classification Temperature (Tp)		245 °C
Time within 5°C of actual Peak Temperature (tp)		10 ~ 30 seconds
Ramp-down Rate		5 °C /Second Max.
Time 25 °C to Peak Temperature		6 Minutes Max.
Suggest reflow times		3 Times Max.

TAPE/REEL - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-A and specifications



Item	Symbol	Tolerance	SMF/SOD-123FL
Carrier width	A	0.1	2.10
Carrier Length	B	0.1	4.00
Carrier Depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
7”Reel outside diameter	D	2.0	178.00
7”Reel inner diameter	D1	Min.	50.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.15
Reel width	W1	1.0	10.50
Qty. Per Reel (pcs)	3000		

IMPORTANT NOTES AND DISCLAIMER

1. ROHS COMPLIANCE: The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.
2. REACH COMPLIANCE: REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
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