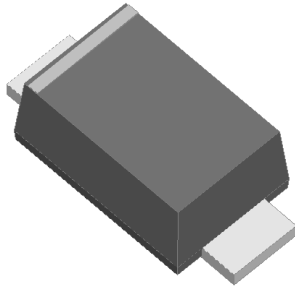


Surface Mount Zener Diodes



Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Mechanical Data

- **Package:** SOD-123FL
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end



■Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MAX
DC power dissipation at T _L = 75 °C	P _D	W	1
Maximum instantaneous forward voltage@ I _F =500mA	V _F	V	1.5
Maximum junction temperature	T _j	°C	-55 to +150
Storage temperature range	T _{stg}	°C	-55 to +150

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical) ⁽¹⁾	R _{θJ-A}	°C/W	junction to lead	60
	R _{θJ-L}	°C/W	junction to ambient	20
	R _{θJ-C}	°C/W	junction to case	18

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

Part Number	Nominal Zener voltage			Test current I _{ZT}	Maximum dynamic impedance resistance Z _{ZT} at I _{ZT}	Maximum reverse leakage current		Maximum DC Zener Current I _{ZM}
	Min V _Z ⁽¹⁾ at I _{ZT}	Typ. V _Z ⁽¹⁾ at I _{ZT}	Max V _Z ⁽¹⁾ at I _{ZT}			I _R	Test voltage V _R	
	V	V	V			μA	V	
SMFZ5.6B	5.6	5.95	6.3	40	8	20	1.5	118
SMFZ6.2B	6.2	6.6	7.0	40	6	20	3.0	116
SMFZ6.8B	6.8	7.25	7.7	40	6	20	3.5	97
SMFZ7.5B	7.5	7.95	8.4	40	4	20	4.0	88



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Part Number	Nominal Zener voltage			Test current I_{ZT}	Maximum dynamic impedance resistance Z_{ZT} at I_{ZT}	Maximum reverse leakage current		Maximum DC Zener Current I_{ZM}
	Min $V_Z^{(1)}$ at I_{ZT}	Typ. $V_Z^{(1)}$ at I_{ZT}	Max $V_Z^{(1)}$ at I_{ZT}			I_R	Test voltage V_R	
	V	V	V			μA	V	
SMFZ8.2B	8.2	8.75	9.3	40	4	20	5.0	80
SMFZ9.1B	9.1	9.65	10.2	40	6	20	6.0	73
SMFZ10B	10	10.6	11.2	40	6	10	7.0	66
SMFZ11B	11	11.65	12.3	20	8	10	8.0	60
SMFZ12B	12	12.75	13.5	20	8	10	9.0	54.9
SMFZ13B	13.3	14.15	15	20	10	10	10.0	49
SMFZ15B	14.7	15.6	16.5	20	10	10	11.0	44.9
SMFZ16B	16.2	17.25	18.3	20	12	10	12.0	40.6
SMFZ18B	18	19.15	20.3	20	12	10	13.0	36.6
SMFZ20B	20	21.2	22.4	20	14	10	15.0	33
SMFZ22B	22	23.25	24.5	10	14	10	17.0	30.1
SMFZ24B	24	25.8	27.6	10	16	10	19.0	27.1
SMFZ27B	27	28.9	30.8	10	16	10	21.0	24.2
SMFZ30B	30	32	34	10	18	10	23.0	21.9
SMFZ33B	33	34.9	37	10	18	10	25.0	20
SMFZ36B	36	38.1	40	10	20	10	27.0	18.4

Notes:

- (1) Nominal Zener voltage Range: 95% Typ. V_Z (1)at I_{ZT} ---105% Typ. V_Z (1)at I_{ZT}
- (2) Surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC method

■ Characteristics (Typical)

FIG1: Power Temperature Derating Curve

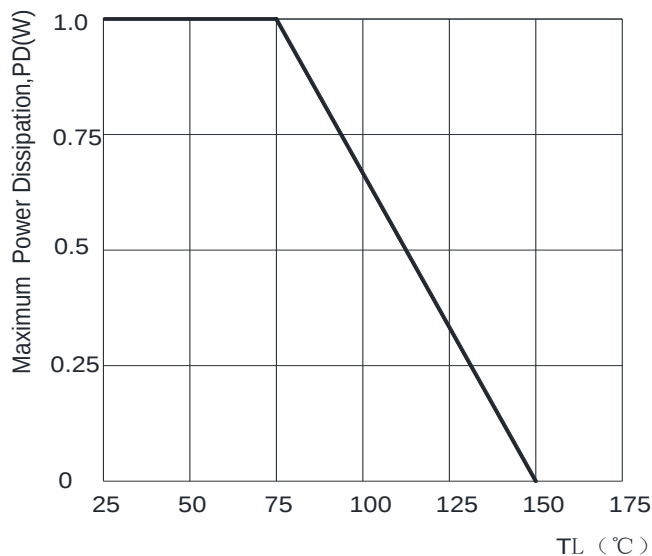
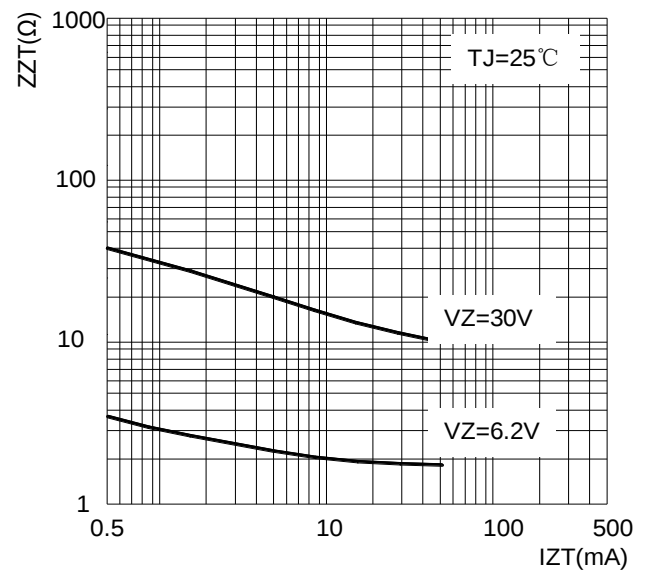


FIG2: Typical Zener Impedance





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■ Characteristics (Typical)

FIG3: Pulse Waveform

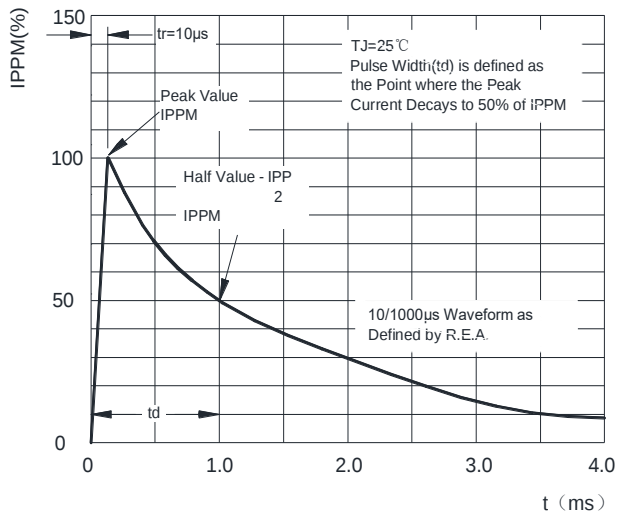


FIG4: Temperature Coefficients v.s. Zener Voltage

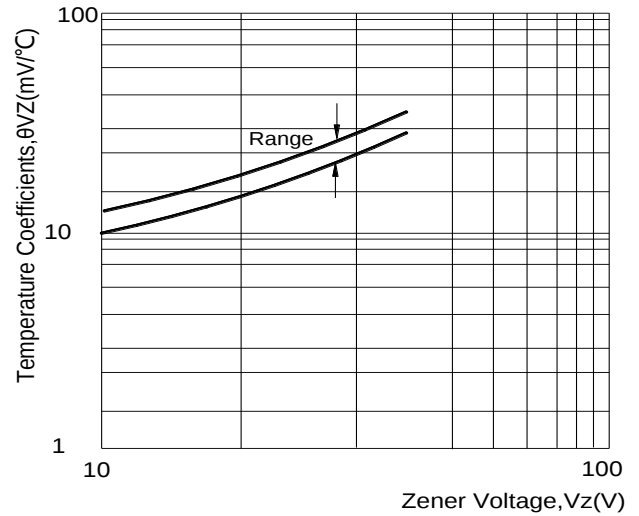
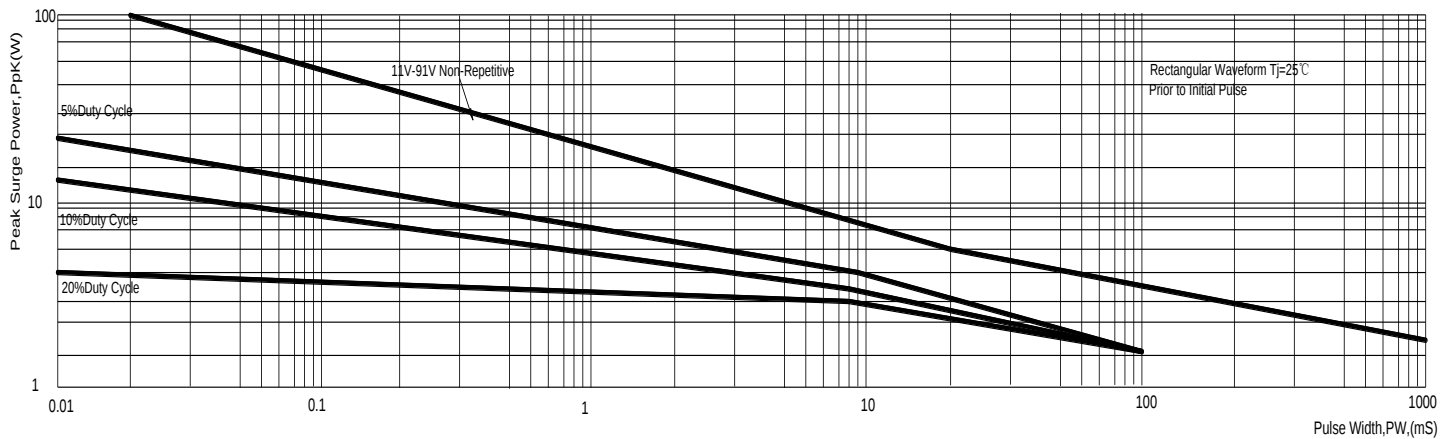


FIG5: Maximum Surge Power



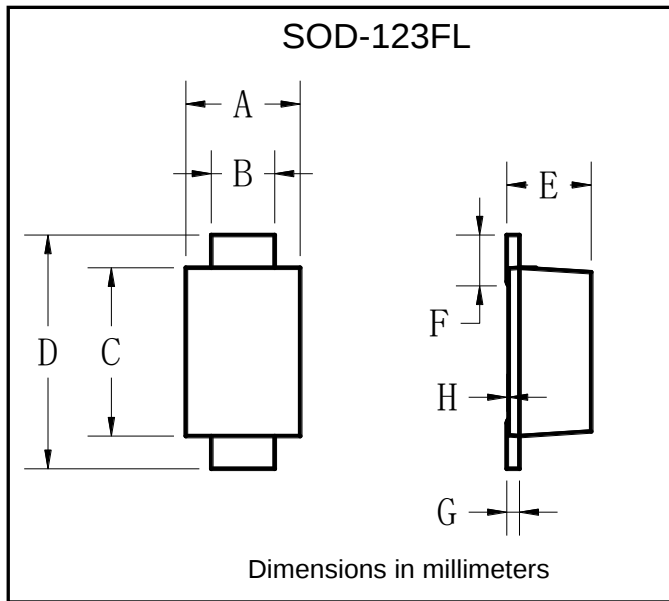
■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMFZXXB SERIES	F1	Approximate 0.0169	3000	30000	120000	7" reel



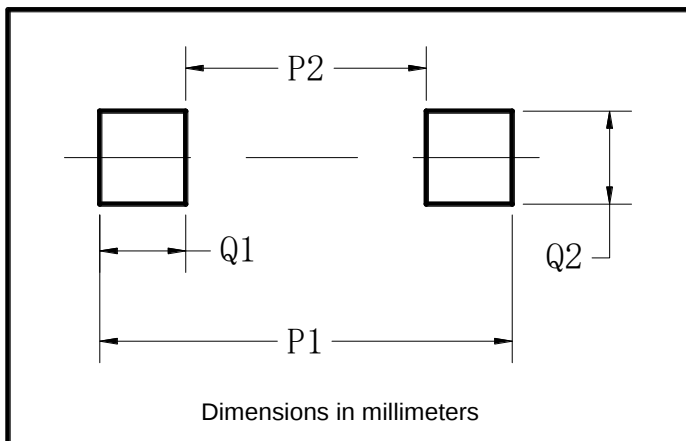
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■ Outline Dimensions



SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	0.00	0.05

■ Suggested Pad Layout



SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50



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