

Surface Mount Transient Voltage Suppressor Rectifiers

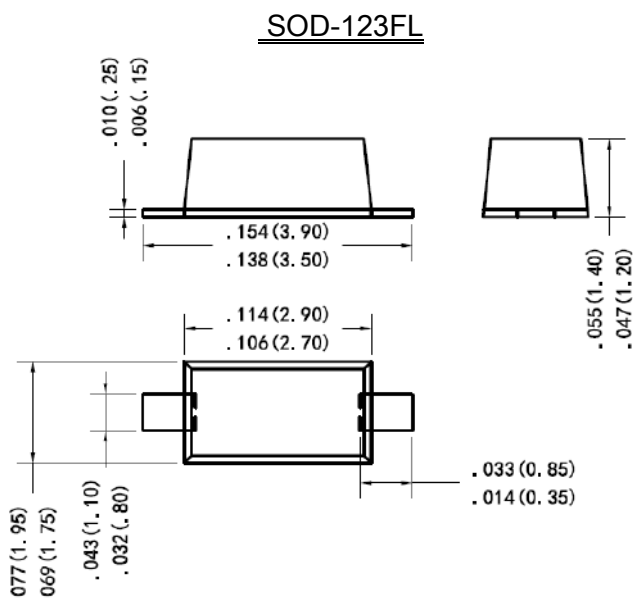
Reverse Voltage 5.0 ~ 220 V
 400 Watt Peak Pulse Power

Features

- Glass passivated chip
- 400 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

Mechanical Data

- Case:SOD123FL Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any
- System: Accreditation through IATF16949 System
- High reliability grade (AEC Q101 qualified)



Unit: inch (mm)

Maximum Ratings & Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform ⁽¹⁾	P _{PP}	400	W
Peak pulse current with a 10/1000 us waveform ⁽¹⁾	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	P _D	2.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only ⁽²⁾	I _{FSM}	40	A
Maximum instantaneous forward voltage at 10 A for unidirectional only ⁽³⁾	V _F	3.5/6.5	V
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +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 maximum ;
- 3)V_F<3.5V for devices of VBR<200V and V_F<6.5V for devices of VBR>201V.

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage $V_{BR}@ I_T$		Test Current	Max. Clamping Voltage @ I_{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V_{RWM}
UNI-POLAR	BI-POLAR	UNI	BI	$V_{RWM}(V)$	Min.(V)	Max.(V)	$I_T(mA)$	$V_{C MAX.}(V)$	$I_{PP}(A)$	$I_R(\mu A)$
TS4MF5.0A	TS4MF5.0CA	AE	WE	5.0	6.40	7.00	10	9.2	43.50	400
TS4MF6.0A	TS4MF6.0CA	AG	WG	6.0	6.67	7.37	10	10.3	38.80	400
TS4MF6.5A	TS4MF6.5CA	AK	WK	6.5	7.22	7.98	10	11.2	35.70	250
TS4MF7.0A	TS4MF7.0CA	AM	WM	7.0	7.78	8.60	10	12.0	33.30	100
TS4MF7.5A	TS4MF7.5CA	AP	WP	7.5	8.33	9.21	1	12.9	31.00	50
TS4MF8.0A	TS4MF8.0CA	AR	WR	8.0	8.89	9.83	1	13.6	29.40	25
TS4MF8.5A	TS4MF8.5CA	AT	WT	8.5	9.44	10.40	1	14.4	27.80	10
TS4MF9.0A	TS4MF9.0CA	AV	WV	9.0	10.00	11.10	1	15.4	26.00	2.5
TS4MF10A	TS4MF10CA	AX	WX	10.0	11.10	12.30	1	17.0	23.50	2.5
TS4MF11A	TS4MF11CA	AZ	WZ	11.0	12.20	13.50	1	18.2	22.00	2.5
TS4MF12A	TS4MF12CA	BE	XE	12.0	13.30	14.70	1	19.9	20.10	2.5
TS4MF13A	TS4MF13CA	BG	XG	13.0	14.40	15.90	1	21.5	18.60	1
TS4MF14A	TS4MF14CA	BK	XK	14.0	15.60	17.20	1	23.2	17.20	1
TS4MF15A	TS4MF15CA	BM	XM	15.0	16.70	18.50	1	24.4	16.40	1
TS4MF16A	TS4MF16CA	BP	XP	16.0	17.80	19.70	1	26.0	15.40	1
TS4MF17A	TS4MF17CA	BR	XR	17.0	18.90	20.90	1	27.6	14.50	1
TS4MF18A	TS4MF18CA	BT	XT	18.0	20.00	22.10	1	29.2	13.70	1
TS4MF20A	TS4MF20CA	BV	XV	20.0	22.20	24.50	1	32.4	12.30	1
TS4MF22A	TS4MF22CA	BX	XX	22.0	24.40	26.90	1	35.5	11.30	1
TS4MF24A	TS4MF24CA	BZ	XZ	24.0	26.70	29.50	1	38.9	10.30	1
TS4MF26A	TS4MF26CA	CE	YE	26.0	28.90	31.90	1	42.1	9.50	1
TS4MF28A	TS4MF28CA	CG	YG	28.0	31.10	34.40	1	45.4	8.80	1
TS4MF30A	TS4MF30CA	CK	YK	30.0	33.50	36.80	1	48.4	8.30	1
TS4MF33A	TS4MF33CA	CM	YM	33.0	36.70	40.60	1	53.3	7.50	1
TS4MF36A	TS4MF36CA	CP	YP	36.0	40.00	44.20	1	58.1	6.90	1
TS4MF40A	TS4MF40CA	CR	YR	40.0	44.40	49.10	1	64.5	6.20	1
TS4MF43A	TS4MF43CA	CT	YT	43.0	47.80	52.80	1	69.4	5.80	1
TS4MF45A	TS4MF45CA	CV	YV	45.0	50.00	55.30	1	72.7	5.50	1
TS4MF48A	TS4MF48CA	CX	YX	48.0	53.30	58.90	1	77.4	5.20	1
TS4MF51A	TS4MF51CA	CZ	YZ	51.0	56.70	62.70	1	82.4	4.90	1
TS4MF54A	TS4MF54CA	RE	ZE	54.0	60.00	66.30	1	87.1	4.60	1
TS4MF58A	TS4MF58CA	RG	ZG	58.0	64.40	71.20	1	93.6	4.30	1
TS4MF60A	TS4MF60CA	RK	ZK	60.0	66.70	73.70	1	96.8	4.10	1
TS4MF64A	TS4MF64CA	RM	ZM	64.0	71.10	78.60	1	103.0	3.90	1
TS4MF70A	TS4MF70CA	RP	ZP	70.0	77.80	86.00	1	113.0	3.50	1
TS4MF75A	TS4MF75CA	RR	ZR	75.0	83.30	92.10	1	121.0	3.30	1
TS4MF78A	TS4MF78CA	RT	ZT	78.0	86.70	95.80	1	126.0	3.20	1
TS4MF85A	TS4MF85CA	RV	ZV	85.0	94.4	104.0	1	137.0	2.90	1
TS4MF90A	TS4MF90CA	RX	ZX	90.0	100.0	111.0	1	146.0	2.70	1
TS4MF100A	TS4MF100CA	RZ	ZZ	100.0	111.0	123.0	1	162.0	2.50	1
TS4MF110A	TS4MF110CA	SE	VE	110.0	122.0	135.0	1	177.0	2.30	1
TS4MF120A	TS4MF120CA	SG	VG	120.0	133.0	147.0	1	193.0	2.10	1
TS4MF130A	TS4MF130CA	SK	VK	130.0	144.0	159.0	1	209.0	1.90	1
TS4MF150A	TS4MF150CA	SM	VM	150.0	167.0	185.0	1	243.0	1.60	1
TS4MF160A	TS4MF160CA	SP	VP	160.0	178.0	197.0	1	259.0	1.50	1
TS4MF170A	TS4MF170CA	SR	VR	170.0	189.0	209.0	1	275.0	1.50	1
TS4MF180A		ST		180.0	201.0	222.0	1	292.0	1.40	1
TS4MF190A		SU		190.0	209.0	243.0	1	308.0	1.30	1
TS4MF200A		SV		200.0	224.0	247.0	1	324.0	1.20	1
TS4MF210A		SW		210.0	231.0	268.0	1	340.0	1.20	1
TS4MF220A		GX		220.0	246.0	272.0	1	356.0	1.10	1

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)

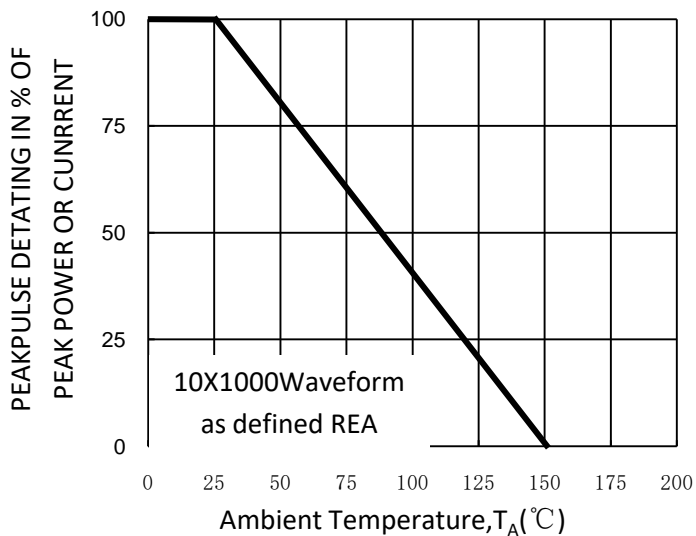


Fig. 1-Pulse Derating Curve

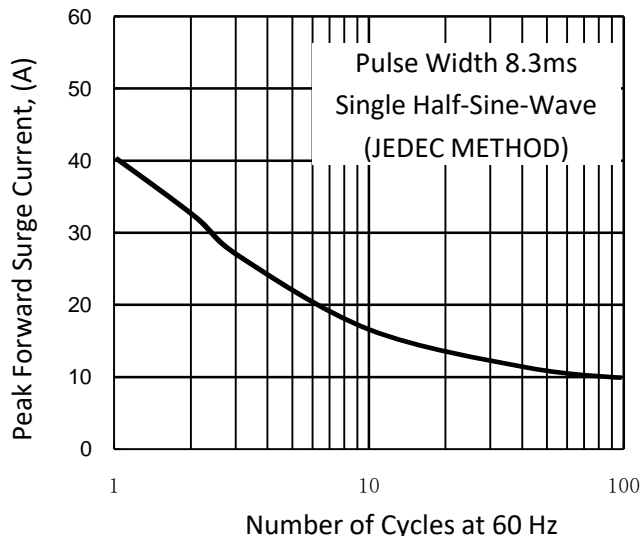


Fig. 2-Maximum Non-Repetitive Surge Current

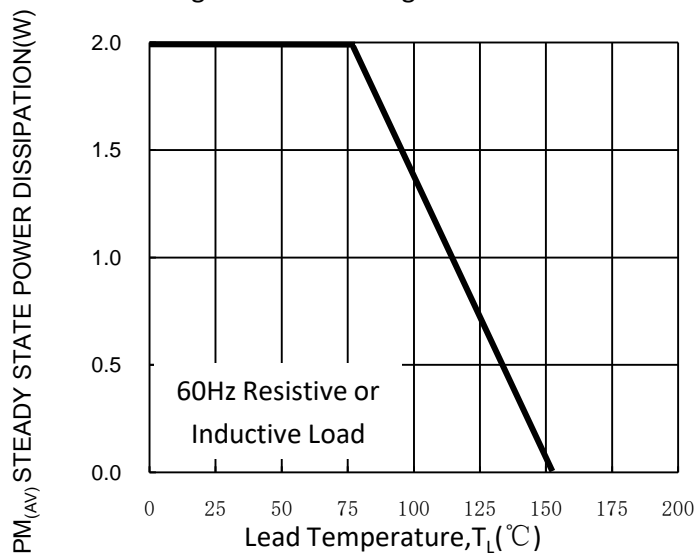


Fig. 3-Steady State Power Derating Curve

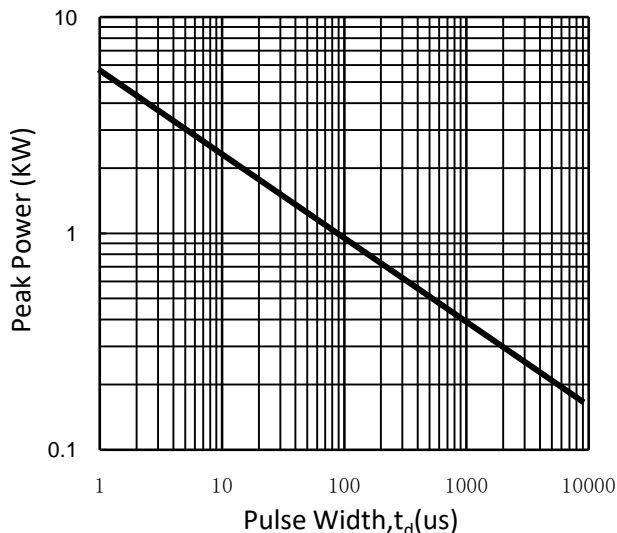


Fig. 4-Peak Pulse Power Rating Curve

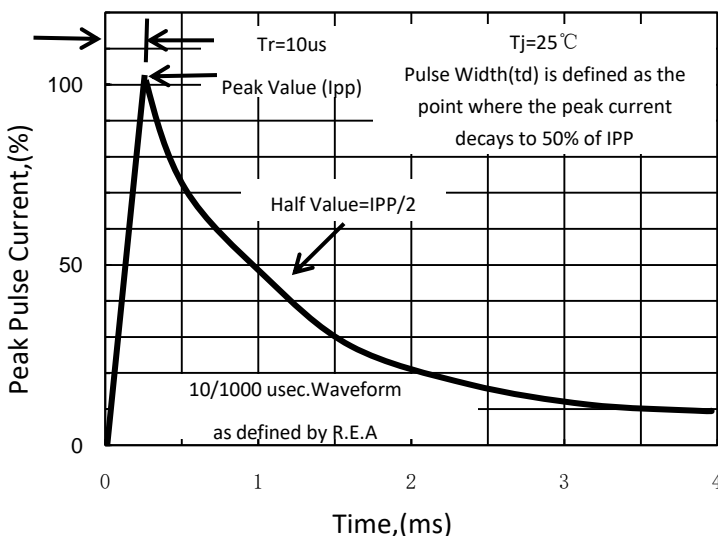


Fig. 5-Pulse Waveform

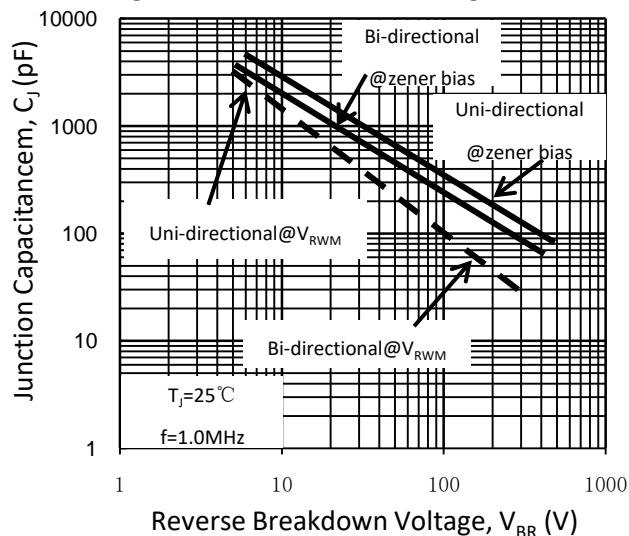


Fig. 6-Typical Junction Capacitance