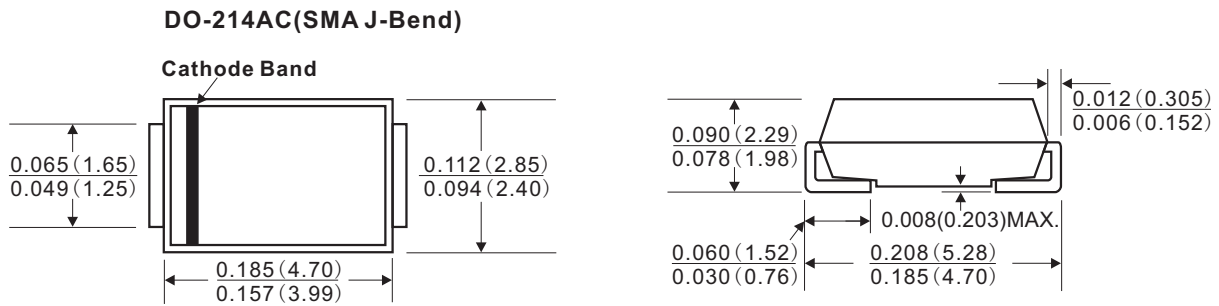


Dimensions (DO-214AC)



Dimensions in inches and (millimeters)

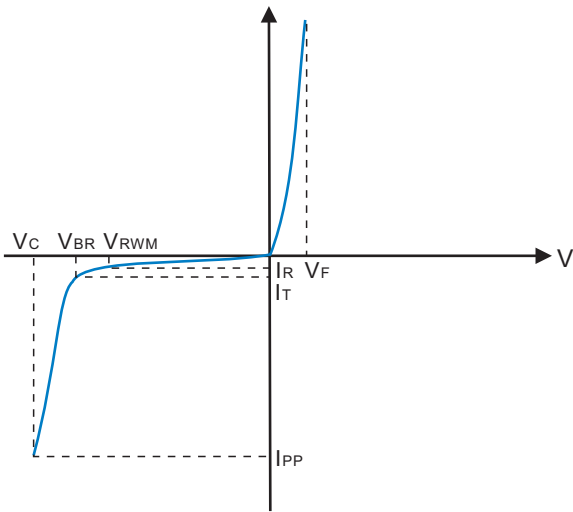
Electrical Characteristics

TSB Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @IT		Test Current	Maximum Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage @VRWM
UNI-Polar	BI-Polar	UNI	BI	VRWM(V)	VBR(V)Min.	VBR(V)Max.	IT(mA)	Vc(V)	IPP(A)	IR(μA)
TSB5.0U	TSB5.0B	AE	WE	5.0	6.40	7.00	10	9.0	52.1	500
TSB6.0U	TSB6.0B	AG	WG	6.0	6.67	7.37	10	10.3	46.6	100
TSB6.5U	TSB6.5B	AK	WK	6.5	7.22	7.98	10	11.2	42.8	100
TSB8.0U	TSB8.0B	AR	WR	8.0	8.89	9.83	1	13.6	35.3	50
TSB8.5U	TSB8.5B	AT	WT	8.5	9.44	10.40	1	14.4	33.4	20
TSB12U	TSB12B	BE	XE	12.0	13.30	14.70	1	19.9	24.1	1
TSB13U	TSB13B	BG	XG	13.0	14.40	15.90	1	21.5	22.3	1
TSB15U	TSB15B	BM	XM	15.0	16.70	18.50	1	24.4	19.7	1
TSB16U	TSB16B	BP	XP	16.0	17.80	19.70	1	26.0	18.5	1
TSB18U	TSB18B	BT	XT	18.0	20.00	22.10	1	29.2	16.4	1
TSB20U	TSB20B	BV	XV	20.0	22.20	24.50	1	32.4	14.8	1
TSB22U	TSB22B	BX	XY	22.0	24.40	26.90	1	35.5	13.5	1
TSB24U	TSB24B	BZ	XZ	24.0	26.70	29.50	1	38.9	12.3	1
TSB26U	TSB26B	CE	YE	26.0	28.90	31.90	1	42.1	11.4	1
TSB28U	TSB28B	CG	YG	28.0	31.10	34.40	1	45.4	10.6	1
TSB30U	TSB30B	CK	YK	30.0	33.30	36.80	1	48.4	9.9	1
TSB33U	TSB33B	CM	YM	33.0	36.70	40.60	1	53.3	9.0	1
TSB36U	TSB36B	CP	YP	36.0	40.00	44.20	1	58.1	8.3	1
TSB40U	TSB40B	CR	YR	40.0	44.40	49.10	1	64.5	7.4	1
TSB51U	TSB51B	CZ	YZ	51.0	56.70	62.70	1	82.4	5.8	1
TSB58U	TSB58B	RG	ZG	58.0	64.40	71.20	1	93.6	5.1	1
TSB60U	TSB60B	RK	ZK	60.0	66.70	73.70	1	96.8	5.0	1
TSB150U	TSB150B	SM	VM	150.0	167.00	185.00	1	243.0	2.0	1
TSB170U	TSB170B	SR	VR	170.0	189.00	209.00	1	275.0	1.7	1
TSB400U	TSB400B	TK	UK	400.0	447.00	494.00	1	648.0	0.7	1
TSB440U	TSB440B	TM	UM	440.0	492.00	534.00	1	713.0	0.7	1

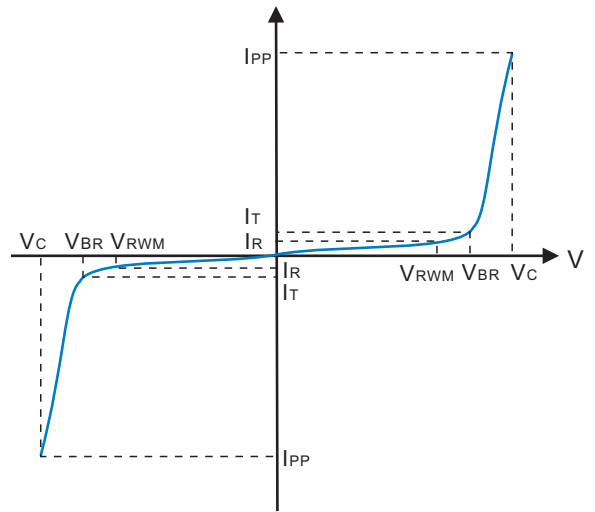
For bidirectional type having VRWM of 10 volts and less, the IR limit is double.

I-V Curve Characteristics

Uni-directional



Bi-directional



Ratings And Characteristic Curves ($T_A=25^\circ\text{C}$ Unless otherwise noted)

Fig.1 Peak Pulse Power Rating

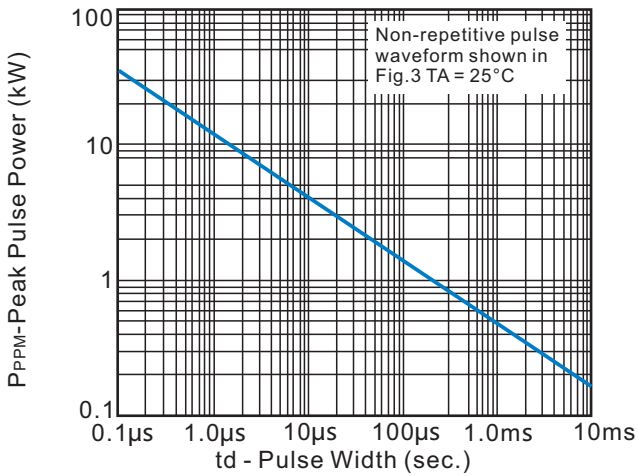


Fig.2 Pulse Derating Curve

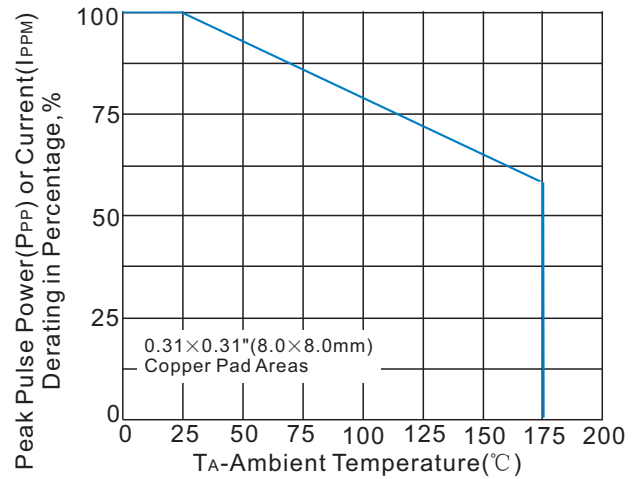


Fig.3 Pulse Waveform

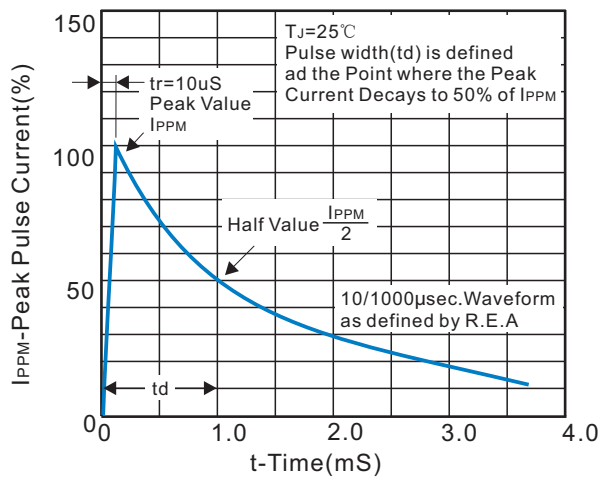
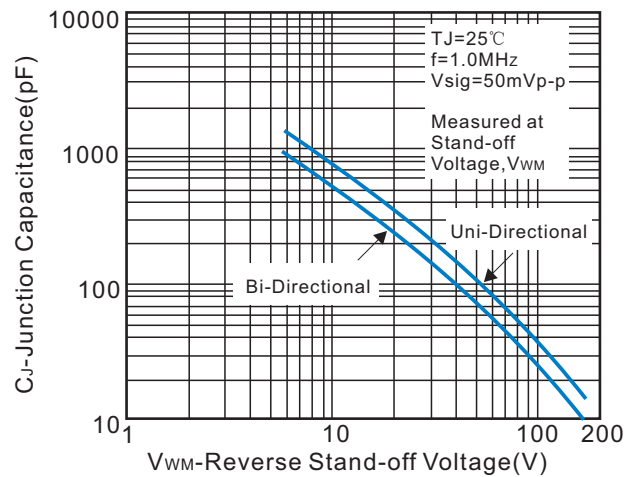


Fig.4 Typical Junction Capacitance



Ratings And Characteristic Curves($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Fig.5 Typ. Transient Thermal Impedance

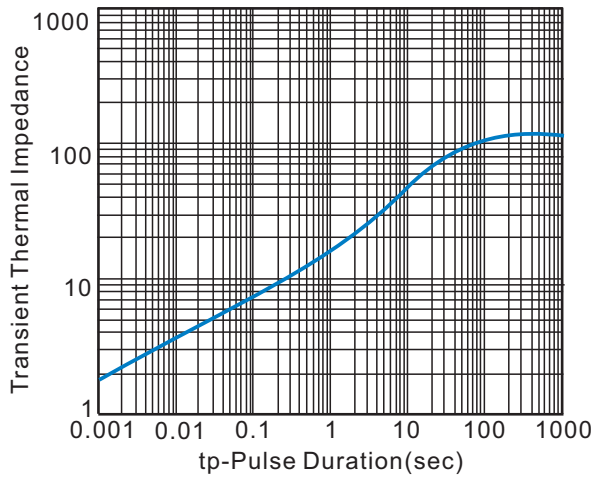
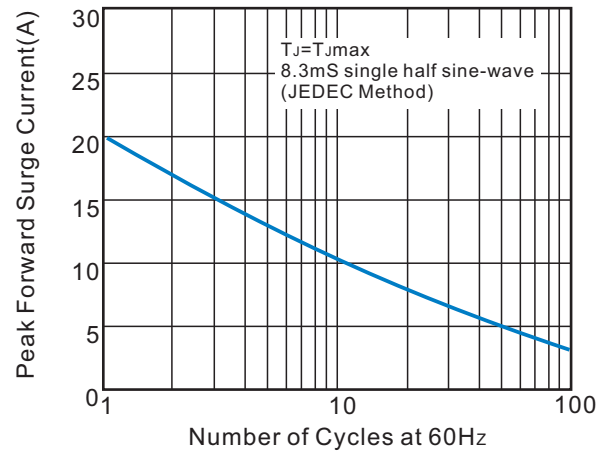


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

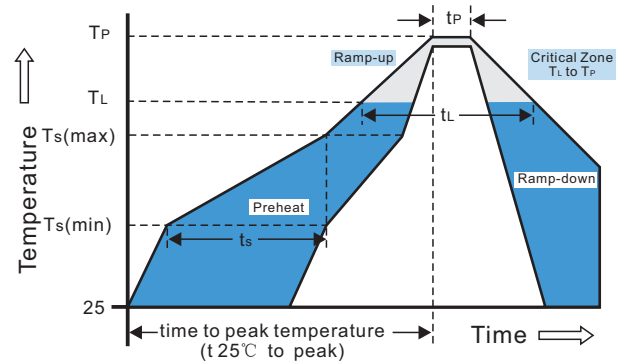


Recommended Soldering Conditions

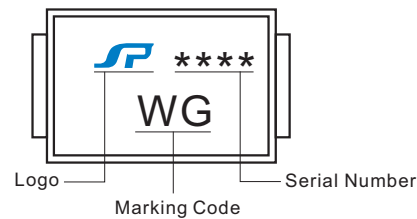
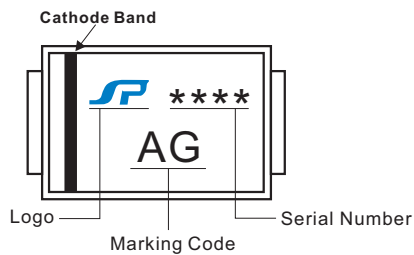
Recommended Conditions

Reflow Condition		Pb-Free assembly (see Fig.1)
Pre Heat	-Temperature Min($T_{s(min)}$)	+150 $^{\circ}\text{C}$
	-Temperature Max($T_{s(max)}$)	+200 $^{\circ}\text{C}$
	-Time(Min to Max)(t_s)	60-180secs
Average ramp up rate (Liquidus Temp(T_L) to peak)		3 $^{\circ}\text{C}/\text{sec. Max.}$
$T_{s(max)}$ to T_L -Ramp-up Rate		3 $^{\circ}\text{C}/\text{sec. Max.}$
Reflow	-Temperature(T_L)(Liquidus)	+217 $^{\circ}\text{C}$
	-Temperature(t_L)	60-150secs
Peak Temp(T_P)		+260(+0/-5) $^{\circ}\text{C}$
Time within 5 $^{\circ}\text{C}$ of actual Peak Temp(t_P)		30 secs. Max.
Ramp-down Rate		6 $^{\circ}\text{C}/\text{sec. Max.}$
Time 25 $^{\circ}\text{C}$ to Peak Temp(T_P)		8 min. Max.
Do not exceed		+260 $^{\circ}\text{C}$

Reflow Soldering



Marking Code



Packing Options And Reel Specification-DO-214AC

Symbol	Ea Per Reel	REEL DIA (mm)	Industry Standard
TSB***	5000	330	EIARS-481

