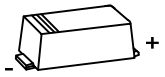
SMA6LXXA

TVS DIODE

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS



SMAF

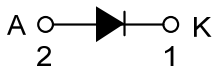
■ DESCRIPTION

The UTC **SMA6LXXA** is Transient Voltage Suppressors. it uses UTC's advanced technology to provide customers with low leakage current, ultra-low response time and perfect clamping capability, etc

■ FEATURES

* Glass passivated chip
* 600W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle) : 0.01%
* Low leakage
* Uni-directional unit
* Excellent clamping capability
* Very fast response time

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
SMA6LXXAL-SMAF-R	SMA6LXXAG-SMAF-R	SMAF	K	A	Tape Reel

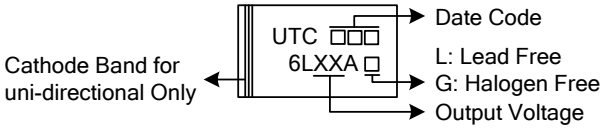
Note: Pin Assignment: K: Cathode A: Anode

SMA6LXXAG-SMAF-R

(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel
(2) SMAF: SMAF
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Peak Power Dissipation with a 10/1000μs Waveform (Note 2)	P_{PP}	600	W
Peak Pulse Current with a 10/1000μs Waveform (Note 2)	I_{RSM}	See Next Table	A
Power Dissipation on Infinite Heatsink at T_L=50°C	P_D	3.0	W
Peak Forward Surge Current (Note 3)	I_{FSM}	60	A
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only	V_F	3.5	V
Operating Junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. Non-repetitive current pulse and derated above T_A=25°C
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum

■ ELECTRICAL CHARACTERISTICS (T_A =25°C, unless otherwise specified)

PART NUMBER (UNI)	BREAKDOWN VOLTAGE V_{BR} @ I_T			MAXIMUM REVERSE LEAKAGE I_R @ V_{RWM} (μA)	WORKING PEAK REVERSE VOLTAGE V_{RWM} (V)	MAXIMUM REVERSE SURGE CURRENT V_{RSM} (A)	MAXIMUM CLAMPING VOLTAGE V_C @ I_{RSM} (V)
	MIN (V)	MAX (V)	I_T (mA)				
SMA6L5.0A	6.40	7.00	10	800	5.0	65.3	9.2
SMA6L6.0A	6.67	7.37	10	800	6.0	58.3	10.3
SMA6L6.5A	7.22	7.98	10	500	6.5	53.6	11.2
SMA6L7.0A	7.78	8.60	10	200	7.0	50.0	12.0
SMA6L7.5A	8.33	9.21	1	100	7.5	46.6	12.9
SMA6L8.0A	8.89	9.83	1	50	8.0	44.2	13.6
SMA6L8.5A	9.44	10.40	1	20	8.5	41.7	14.4
SMA6L9.0A	10.00	11.10	1	10	9.0	39.0	15.4
SMA6L10A	11.10	12.30	1	5	10.0	35.3	17.0
SMA6L11A	12.20	13.50	1	1	11.0	33.0	18.2
SMA6L12A	13.30	14.70	1	1	12.0	30.2	19.9
SMA6L13A	14.40	15.90	1	1	13.0	28.0	21.5
SMA6L14A	15.60	17.20	1	1	14.0	25.9	23.2
SMA6L15A	16.70	18.50	1	1	15.0	24.6	24.4
SMA6L16A	17.80	19.70	1	1	16.0	23.1	26.0
SMA6L17A	18.90	20.90	1	1	17.0	21.8	27.6
SMA6L18A	20.00	22.10	1	1	18.0	20.6	29.2
SMA6L20A	22.20	24.50	1	1	20.0	18.6	32.4
SMA6L22A	24.40	26.90	1	1	22.0	16.9	35.5
SMA6L24A	26.70	29.50	1	1	24.0	15.5	38.9
SMA6L26A	28.90	31.90	1	1	26.0	14.3	42.1
SMA6L28A	31.10	34.40	1	1	28.0	13.3	45.4
SMA6L30A	33.30	36.80	1	1	30.0	12.4	48.4
SMA6L33A	36.70	40.60	1	1	33.0	11.3	53.3
SMA6L36A	40.00	44.20	1	1	36.0	10.4	58.1
SMA6L40A	44.40	49.10	1	1	40.0	9.3	64.5
SMA6L43A	47.80	52.80	1	1	43.0	8.7	69.4
SMA6L45A	50.00	55.30	1	1	45.0	8.3	72.7
SMA6L48A	53.30	58.90	1	1	48.0	7.8	77.4
SMA6L51A	56.70	62.70	1	1	51.0	7.3	82.4

■ ELECTRICAL CHARACTERISTICS (Cont.)

PART NUMBER (UNI)	BREAKDOWN VOLTAGE V_{BR} @ I_T			MAXIMUM REVERSE LEAKAGE I_R @ V_{RWM} (μA)	WORKING PEAK REVERSE VOLTAGE V_{RWM} (V)	MAXIMUM REVERSE SURGE CURRENT V_{RSM} (A)	MAXIMUM CLAMPING VOLTAGE V_C @ I_{RSM} (V)
	MIN (V)	MAX (V)	I_T (mA)				
SMA6L54A	60.00	66.30	1	1	54.0	6.9	87.1
SMA6L58A	64.40	71.20	1	1	58.0	6.5	93.6
SMA6L60A	66.70	73.70	1	1	60.0	6.2	96.8
SMA6L64A	71.10	78.60	1	1	54.0	5.9	103.0
SMA6L70A	77.80	86.00	1	1	70.0	5.3	113.0
SMA6L75A	83.30	92.10	1	1	75.0	5.0	121.0
SMA6L78A	86.70	95.80	1	1	78.0	4.8	126.0
SMA6L85A	94.4	104.00	1	1	85.0	4.4	137.0

TYPICAL CHARACTERISTICS

Fig 1. Pulse Derating Curve

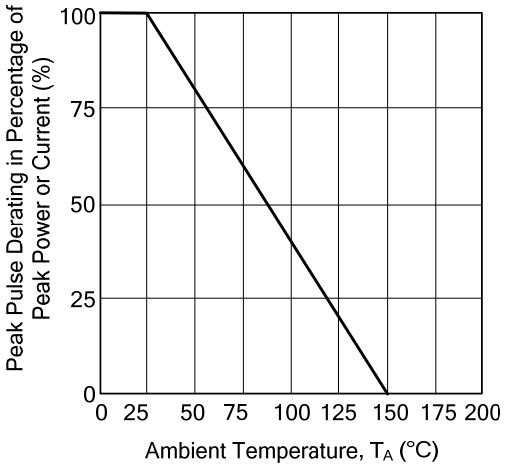


Fig 2. Maximum Non-Repetitive Surge Current

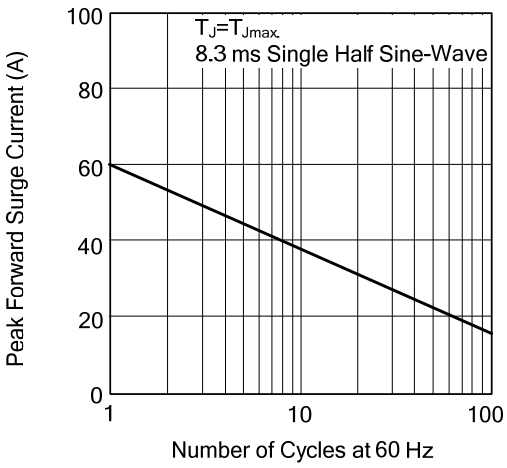


Fig 3. Steady State Power Derating Curve

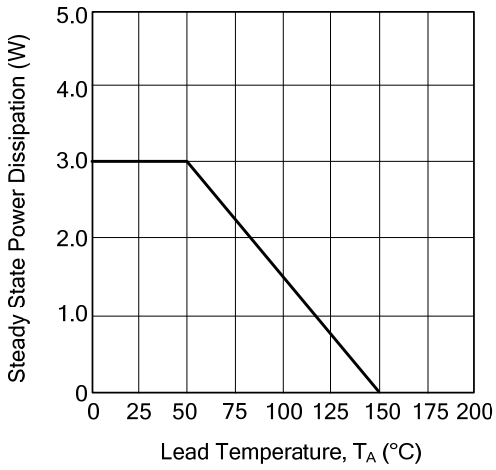


Fig 4. Peak Pulse Power Rating Curve

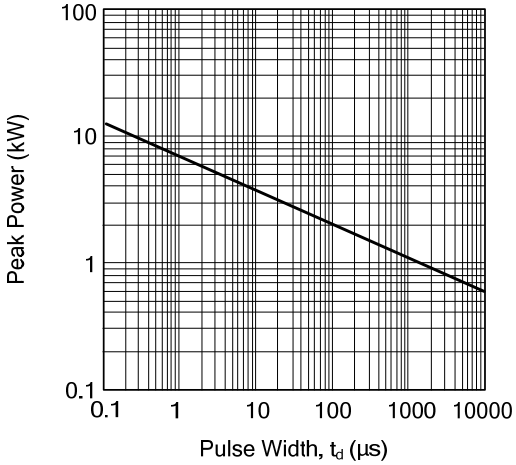


Fig 5. Pulse Waveform

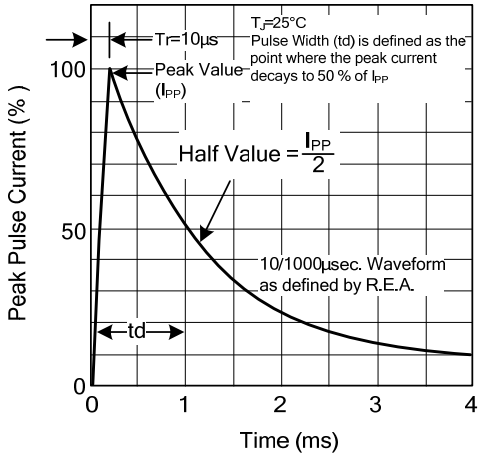


Fig 6. Typical Junction Capacitance