

SURFACE MOUNT ULTRAFAST RECOVERY RECTIFIER

Reverse Voltage - 50V~1000V

Forward Current - 1 A

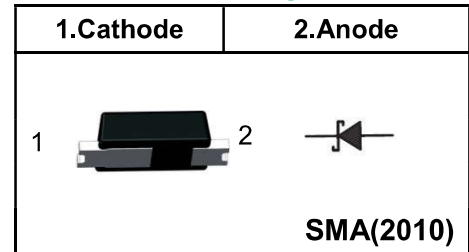
FEATURES

- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Glass Passivated Chip Junction
- ◆ Easy to pick and place
- ◆ High efficiency
- ◆ Leadfree in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- ◆ Case: SMA(2010)
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 30mg / 0.0010oz

Pinning



Marking Code

US1A	US1A
US1B	US1B
US1D	US1D
US1G	US1G
US1J	US1J
US1K	US1K
US1M	US1M

Absolute Maximum Ratings and Electrical characteristics

Ratings at 25 ° ambient temperature unless otherwise specified. Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

Parameter	Symbols	US1A	US1B	US1D	US1G	US1J	US1K	US1M	Units	
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V	
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V	
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V	
Maximum Average Forward Rectified Current at $T_C = 125^\circ C$	$I_{F(AV)}$	1							A	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load	I_{FSM}	30							A	
Maximum Instantaneous Forward Voltage at 1 A	V_F	1.0			1.3	1.65			V	
Maximum DC Reverse Current $T_A = 25^\circ C$ at Rated DC Blocking Voltage $T_A = 125^\circ C$	I_R	5				100				μA
Maximum Reverse Recovery Time ⁽¹⁾	t_{rr}	50				75				nS
Typical Junction Capacitance ⁽²⁾	C_j	15							pF	
Typical Thermal Resistance ⁽³⁾	$R_{\theta ja}$	80							$^\circ C/W$	
Operating and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150							$^\circ C$	

(1) Measured with $I_F = 0.5 A$, $I_R = 1 A$, $I_{rr} = 0.25 A$

(2) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(3) P.C.B. mounted with 2.0 X 2.0" (5 X 5cm) copper pad areas.

Fig.1 Forward Current Derating Curve

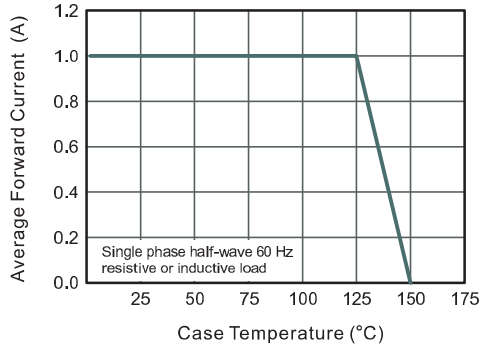


Fig.2 Typical Reverse Characteristics

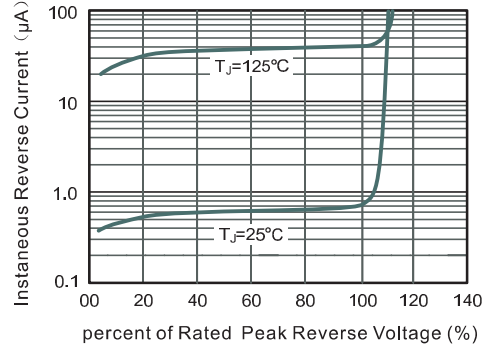


Fig.3 Typical Forward Characteristics

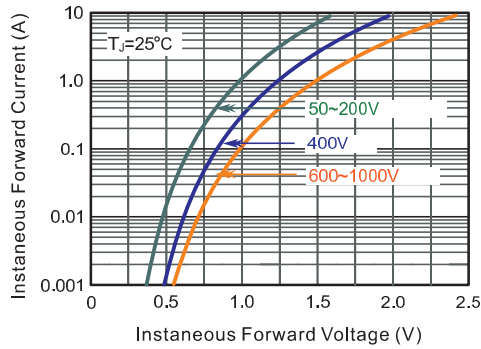


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

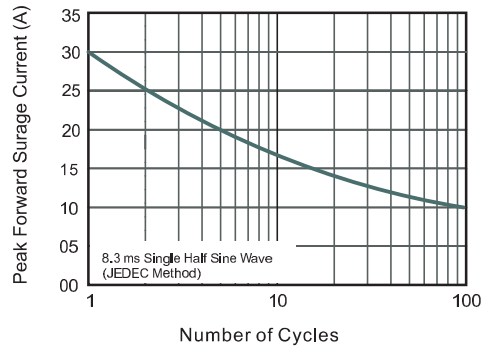


Fig.5 Typical Junction Capacitance

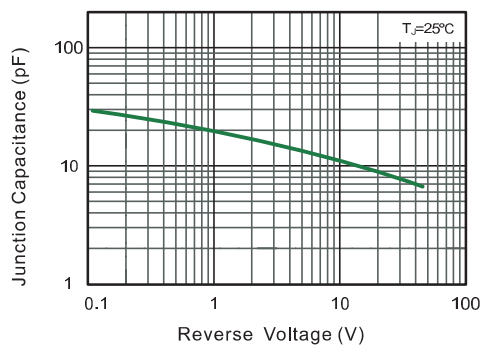
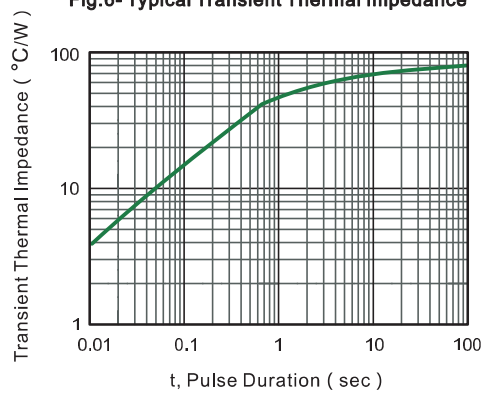
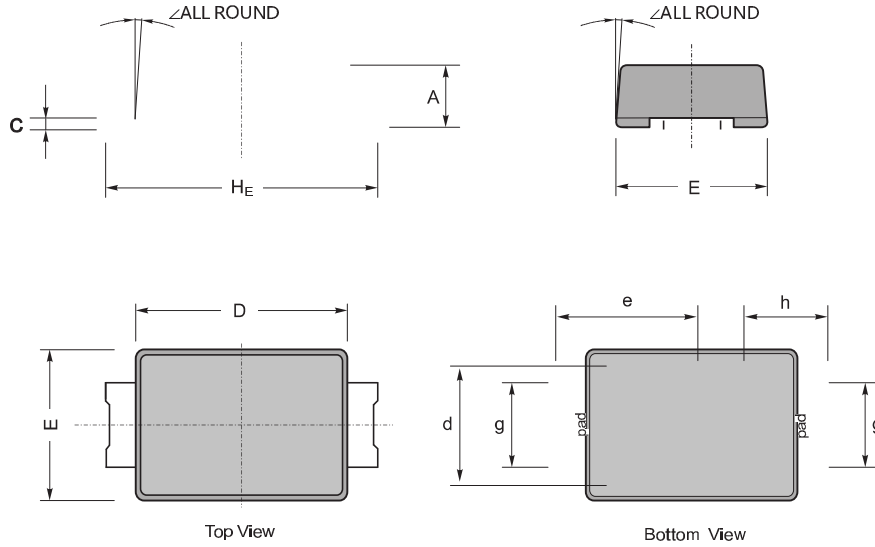


Fig.6- Typical Transient Thermal Impedance



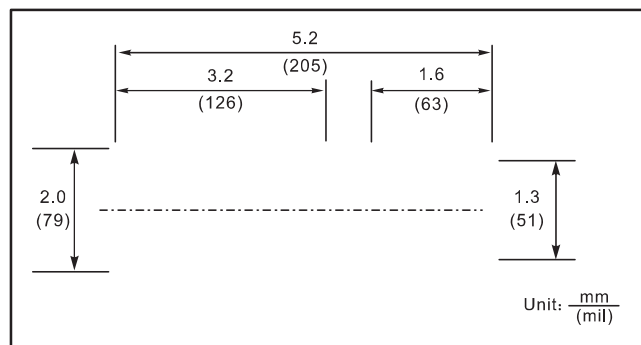
Package Outline SMA(2010)

Plastic surface mounted package; 2 leads



UNIT		A	C	D	E	H _E	d	e	g	h	∠
mm	max	1.20	0.35	4.10	2.70	5.20	1.90	3.05	1.50	1.2	12°
	min	0.90	0.20	3.70	2.30	4.80	1.70	2.85	1.30	1.0	
mil	max	47	13.8	161	106	205	75	120	59	47	
	min	35	7.9	145	90	189	67	112	51	39	

The recommended mounting pad size



Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SMA(2010)	Tape/Reel, 7" reel	3000	EIA-481-1