1A, 100V - 200V Ultra Fast Surface Mount Rectifier

FEATURES

- Planar technology
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

- Case: Micro SMA
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.006g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	100 - 200	V
I_{FSM}	28	A
$T_{J\ MAX}$	175	°C
Package	Micro SMA	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

Micro SMA

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER		**SYMBOL**	**PU1BM**	**PU1DM**	**UNIT**
Marking code on the device			P5	P6	
Repetitive peak reverse voltage		V_{RRM}	100	200	V
Reverse voltage, total rms value		$V_{R(RMS)}$	70	140	V
Forward current		I_F	1		A
Surge peak forward current, single half sine-wave superimposed on rated load	t = 8.3ms	I_{FSM}	28		A
	t = 1.0ms		52		A
Junction temperature		T_J	-55 to +175		°C
Storage temperature		T_{STG}	-55 to +175		°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	28	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	60	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	34	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (1)	I_F = 0.5A, T_J = 25°C	V_F	0.84	-	V
	I_F = 1.0A, T_J = 25°C		0.90	1.05	V
	I_F = 0.5A, T_J = 125°C		0.70	-	V
	I_F = 1.0A, T_J = 125°C		0.76	0.90	V
Reverse current @ rated V_R (2)	T_J = 25°C	I_R	-	1	μA
	T_J = 125°C		-	15	μA
Reverse recovery time	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	25	ns
	I_F = 1.0A, di/dt = 50 A/μs, V_R = 30V		36	-	ns
Reverse recovery current	I_F = 1.0A, di/dt = 200 A/μs, V_R = 100V	I_{RM}	3.4	-	A
Reverse recovery charge		Q_{rr}	40	-	nC
Reverse recovery time		t_{rr}	24	-	ns
Junction capacitance	1MHz, V_R = 4.0V	C_J	18	-	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE(1)	PACKAGE	PACKING
PU1xM	Micro SMA	12,000 / Tape & Reel

Notes:

1. “x” defines voltage from 100V(PU1BM) to 200V(PU1DM)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

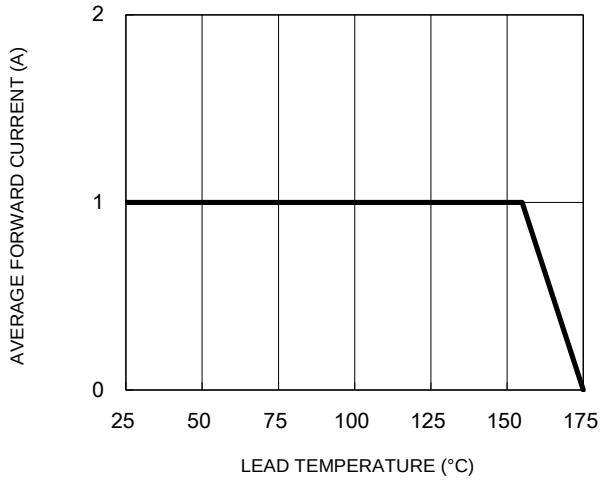


Fig.2 Typical Junction Capacitance

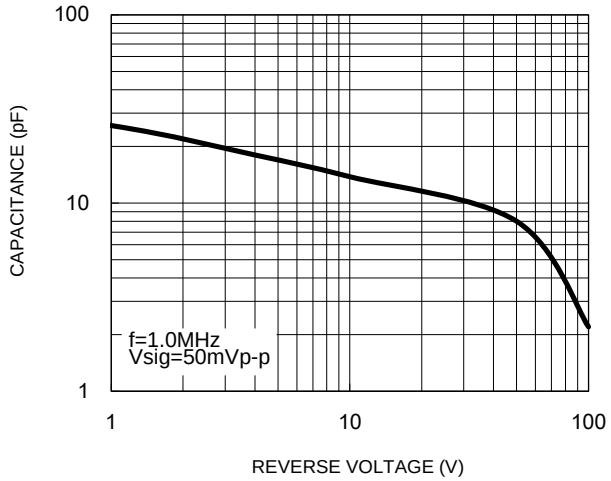


Fig.3 Typical Reverse Characteristics

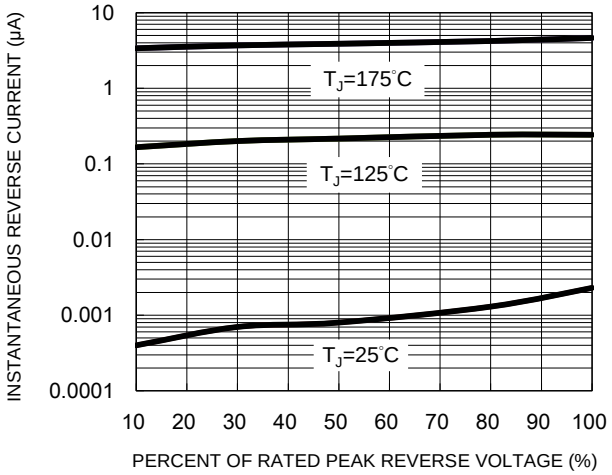


Fig.4 Typical Forward Characteristics

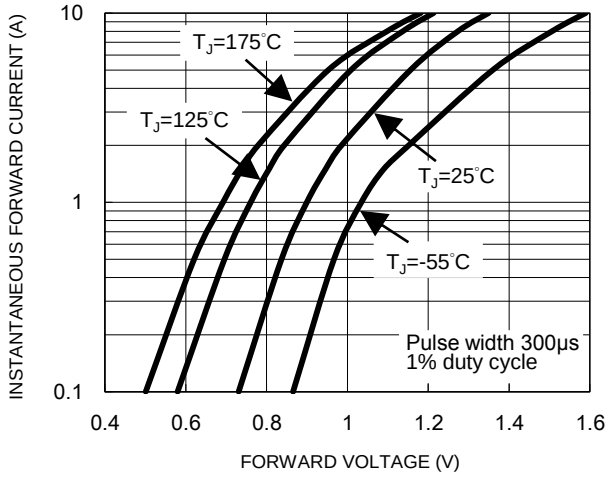
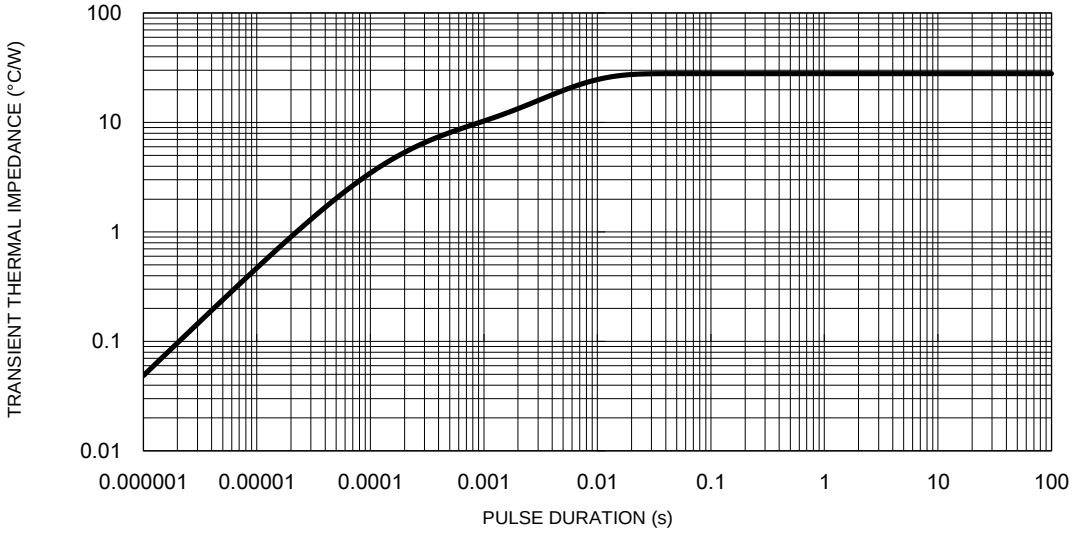
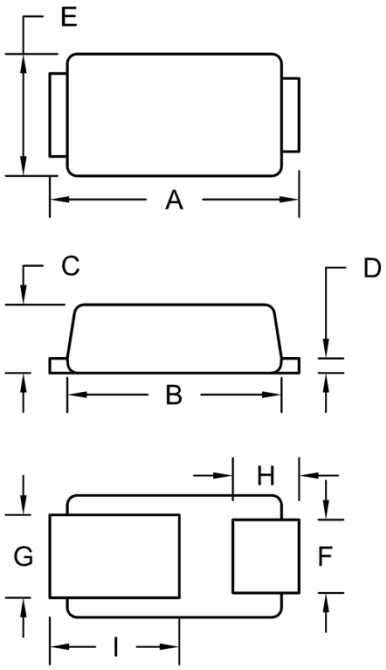


Fig.5 Typical Transient Thermal Impedance



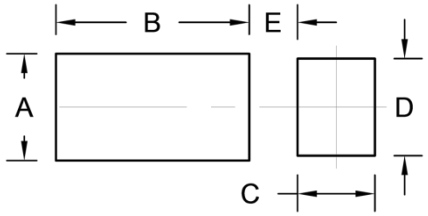
PACKAGE OUTLINE DIMENSIONS

Micro SMA



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.30	2.70	0.091	0.106
B	2.10	2.30	0.083	0.091
C	0.63	0.73	0.025	0.029
D	0.10	0.20	0.004	0.008
E	1.15	1.35	0.045	0.053
F	0.65	0.85	0.026	0.034
G	0.75	0.95	0.030	0.037
H	0.55	0.75	0.022	0.030
I	1.10	1.50	0.043	0.059

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.10	0.043
B	2.00	0.079
C	0.80	0.031
D	1.00	0.039
E	0.50	0.020

MARKING DIAGRAM

P/N = Marking Code
YW = Data Code

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