

# MSARW80G20A (MX028)

## Features

- Oxide passivated structure for very low leakage currents
- Epitaxial structure minimizes forward voltage drop
- Hermetically sealed, low profile ceramic surface mount power package
- Low package inductance
- Very low thermal resistance
- available with TXV (MSARW80G20AV) or S-level (MSARW80G20AS) screening i.a.w. Microsemi internal procedure PS11.50

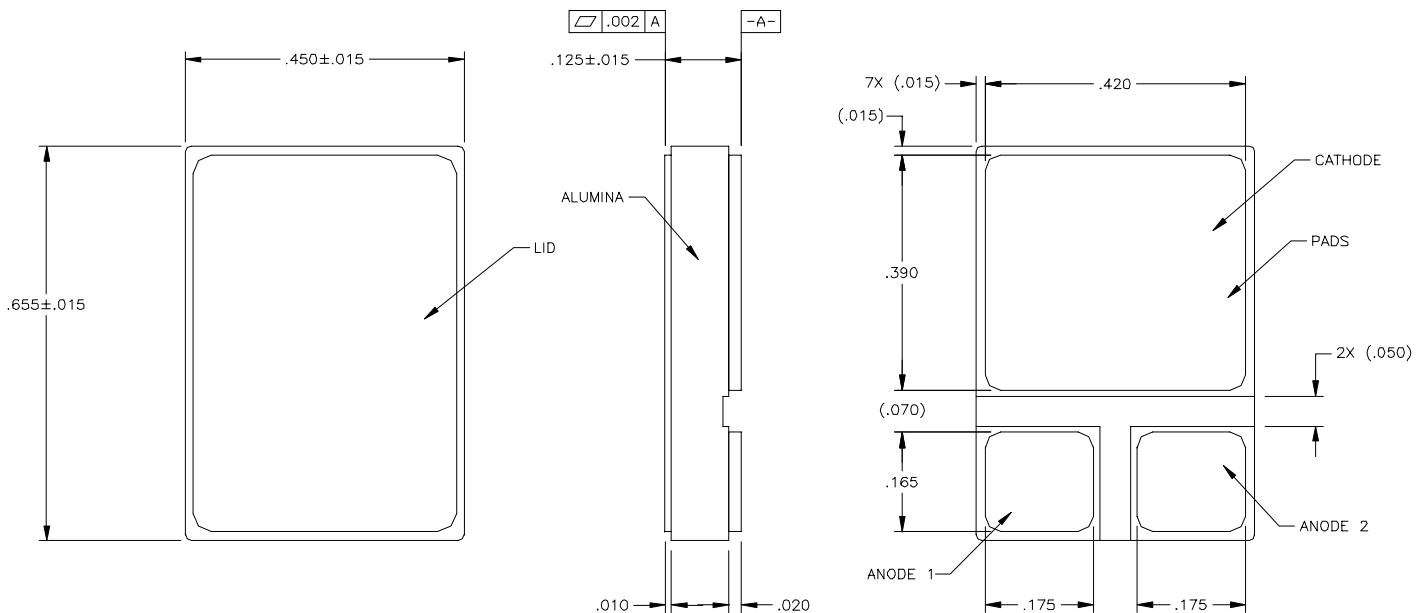
**200 Volts  
 80 Amps  
 37 ns**

**ULTRAFAST  
 RECTIFIER**

## Maximum Ratings @ 25°C (unless otherwise specified)

DESCRIPTION	SYMBOL	MAX.	UNIT
Peak Repetitive Reverse Voltage	$V_{RRM}$	200	Volts
Working Peak Reverse Voltage	$V_{RWM}$	200	Volts
DC Blocking Voltage	$V_R$	200	Volts
Average Rectified Forward Current, $T_c \leq 135^\circ\text{C}$	$I_{F(ave)}$	80	Amps
Nonrepetitive Peak Surge Current, $t_p = 8.3$ ms, half-sinewave	$I_{FSM}$	250	Amps
Junction Temperature Range	$T_j$	-65 to +200	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to +200	$^\circ\text{C}$
Thermal Resistance, Junction to Case	$\theta_{JC}$	0.8 (typ.0.35)	$^\circ\text{C/W}$

## Mechanical Outline



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## Electrical Parameters

DESCRIPTION	SYMBOL	CONDITIONS	MIN	TYP.	MAX	UNIT
Reverse (Leakage) Current	$I_{R25}$	$V_R = 200 \text{ Vdc}, T_c = 25^\circ\text{C}$		-	250	$\mu\text{A}$
	$I_{R100}$	$V_R = 200 \text{ Vdc}, T_c = 100^\circ\text{C}$		-	10	mA
Forward Voltage pulse test, $p_w = 300 \mu\text{s}$ $d/c \leq 2\%$	VF1	$I_F = 5 \text{ A}, T_c = 25^\circ\text{C}$		720	750	mV
	VF2	$I_F = 25 \text{ A}, T_c = 25^\circ\text{C}$		860	900	mV
	VF3	$I_F = 50 \text{ A}, T_c = 25^\circ\text{C}$		950	1050	mV
	VF4	$I_F = 80 \text{ A}, T_c = 25^\circ\text{C}$		1050		mV
	VF5	$I_F = 50 \text{ A}, T_c = -55^\circ\text{C}$			1150	mV
	VF6	$I_F = 50 \text{ A}, T_c = 100^\circ\text{C}$		830		mV
Junction Capacitance	$C_{j1}$	$V_R = 10 \text{ Vdc}$			500	pF
Reverse Recovery Time	$t_{rr}$	$I_F = 9.9 \text{ A}, dI_F/dt = 200 \text{ A}/\mu\text{s}, V_r = 30 \text{ V}$		35	37	ns
Reverse Recovery Current	$I_{RM(rec)}$	$I_F = 9.9 \text{ A}, dI_F/dt = 200 \text{ A}/\mu\text{s}, V_r = 30 \text{ V}$		5	5.5	A
Breakdown Voltage	BVR	$I_R = 250 \mu\text{A}, T_c = 25^\circ\text{C}$	200			V

