GOOD-ARK SEMICONDUCTOR

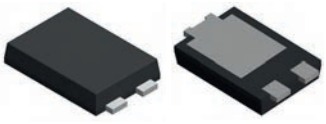
GSMURP1020

Super Fast Rectifier
Reverse Voltage 200V Forward Current 10A

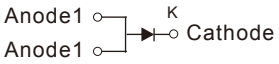
Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low V_F, low power loss
- Polyimide passivation
- High surge capability
- High temperature soldering guaranteed: 260℃/10 seconds at terminals

RoHS COMPLIANT



TO-277



Schematic Diagram

Mechanical Data

- Case: TO-277 molded plastic body
- Terminals: Tin plated, solderable per MIL-STD-750, method 2026
- Mounting position: Any

Applications

For use in boost stage in SMPS, high frequency inverters for solar inverters, DC/DC converters, high frequency output rectification of battery chargers, free wheeling diodes in motor drivers

Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	10.0	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method at Rated T_L)	I_{FSM}	150	A
Typical Thermal Resistance, Junction to Lead[1]	$R_{\theta JL}$	3	°C/W
Operating Junction Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

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Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
Breakdown Voltage	V_{BR}	I_R=100μA		200	-	-	V
Blocking Voltage	V_R						
Instantaneous Forward Voltage[2]	V_F	T_J=25°C	I_F=1.0A	-	0.70	-	V
			I_F=6.0A	-	0.86	-	
			I_F=10.0A	-	0.90	0.95	
		T_J=125°C	I_F=1.0A	-	0.55	-	
			I_F=6.0A	-	0.72	-	
			I_F=10.0A	-	0.78	-	
Reverse Current[3]	I_R	T_J=25°C	V_R=200V	-	0.1	2	μA
		T_J=100°C		-	1.0	-	μA
		T_J=125°C		-	5	50	
Junction Capacitance	C_J	4V, 1MHz		-	110	-	pF
Reverse Recovery Time	t_{rr}	I_F=1.0A, dI_F/dt=1A/μs, V_R=30V		-	22	-	nS
		T_J=25°C	I_F=6A, dI_F/dt=200A/μS, V_R=160V	-	22	-	
		T_J=125°C		-	28	-	
Peak Recovery Current	I_{RRM}	T_J=25°C		-	2.5	-	A
		T_J=125°C		-	5	-	
Reverse Recovery Charge	Q_{rr}	T_J=25°C		-	28	-	nC
		T_J=125°C		-	80	-	

Notes:
1. Units mounted on recommended PCB 1 oz. pad layout
2. Pulse test: 300μs pulse width, 1% duty cycle
3. Pulse test: pulse width ≤40ms

Ratings and Characteristics Curves

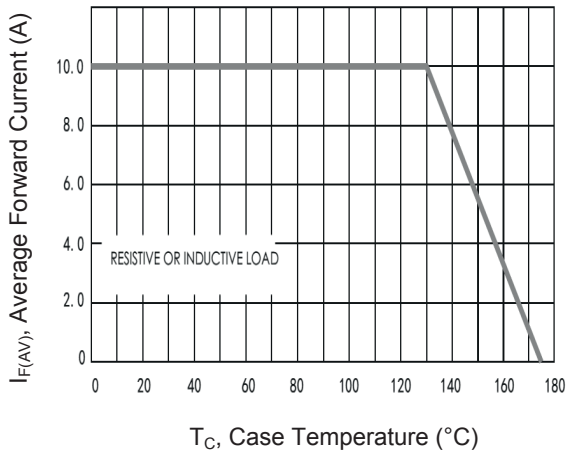

Figure 1. Forward Current Derating Curve

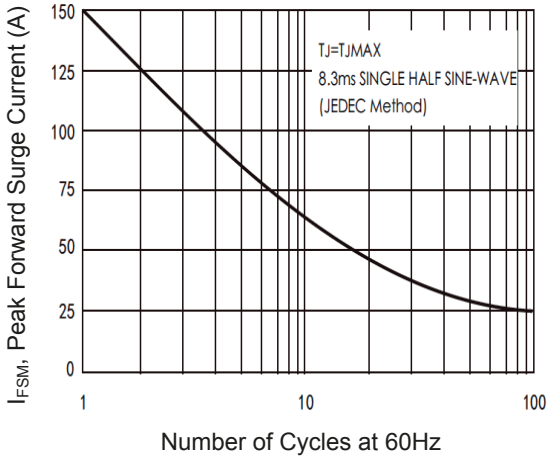

Figure 2. Maximum Non-Repetitive Forward Surge Current

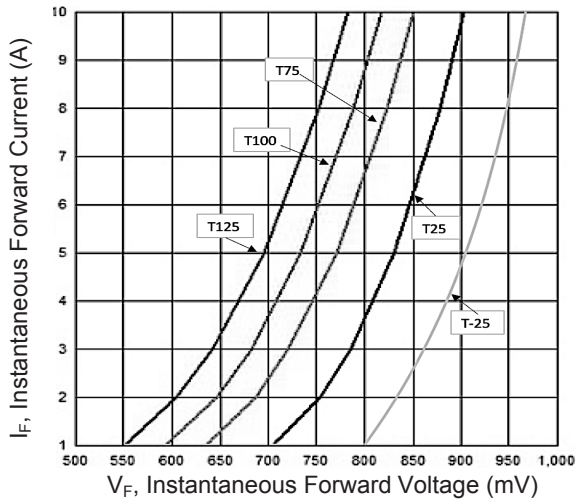

Figure 3. Typical Instantaneous Forward Characteristics

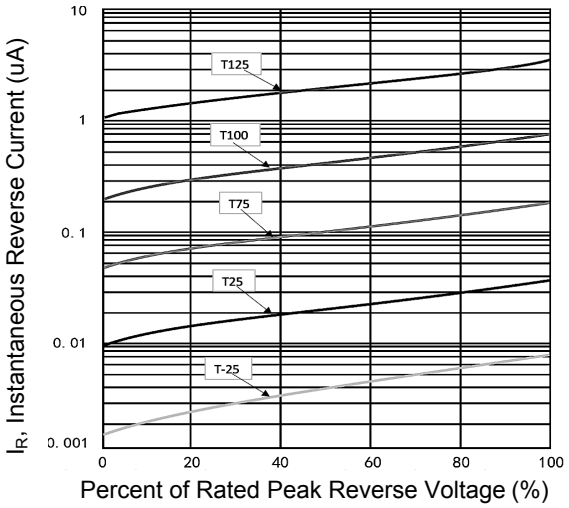

Figure 4. Typical Reverse Characteristics

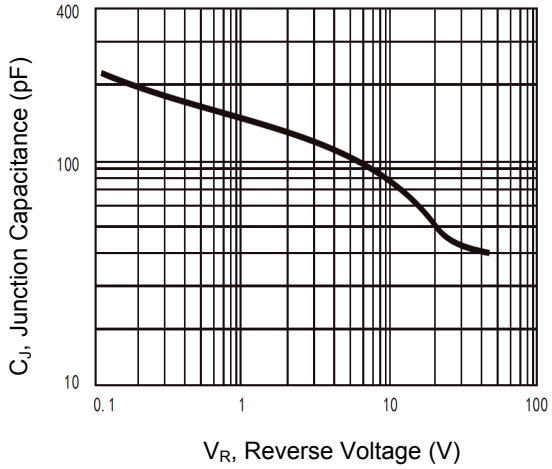

Figure 5. Typical Junction Capacitance

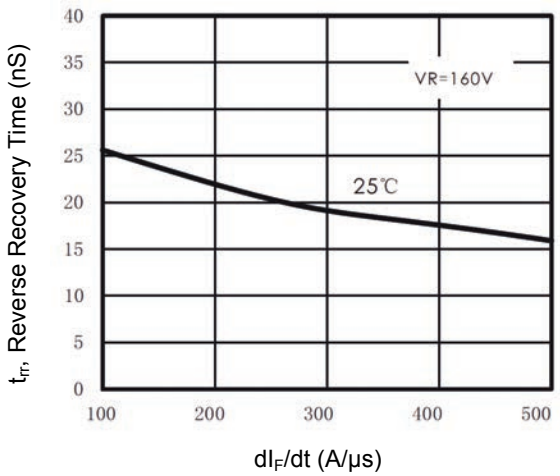

Figure 6. Typical Reverse Recovery Time vs. dI_F/dt

Ratings and Characteristics Curves

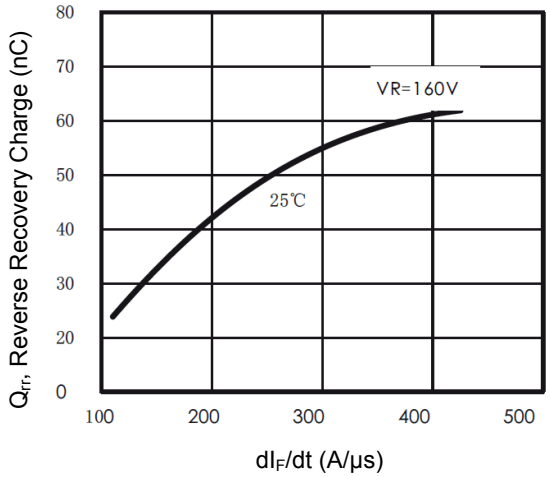

Figure 7. Typical Stored Charge vs. dI_F/dt

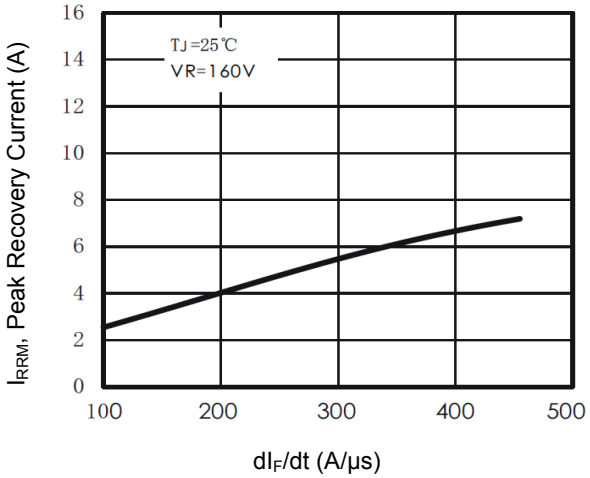

Figure 8. Typical Reverse Recovery Current vs. dI_F/dt

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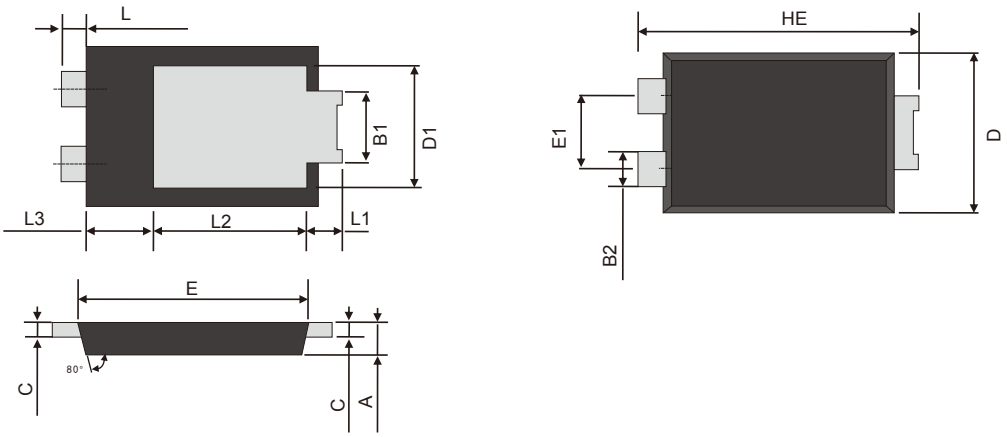
Package Outline Dimensions (TO-277)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
HE	6.35	6.65	0.250	0.262
E	5.28	5.48	0.208	0.216
D	3.80	4.20	0.150	0.165
B1	1.70	1.90	0.067	0.075
B2	0.80	1.00	0.031	0.039
A	0.95	1.25	0.037	0.049
C	0.22	0.38	0.009	0.015
L	0.45	0.65	0.018	0.026
L1	0.80	0.90	0.031	0.035
L2	3.25	3.85	0.128	0.152
L3	1.45	1.65	0.057	0.065
D1	2.80	3.20	0.110	0.126
E1	1.65	1.95	0.065	0.077

Order Information

Device	Package	Marking	Packaging	SPQ
GSMURP1020	TO-277	MURP1020	Tape & Reel	5,000 Pcs / Reel