MURP1020-V

Automotive Polyimide Passivated Super Fast Rectifier

Reverse Voltage - 200 Volts
Forward Current - 10.0Amperes

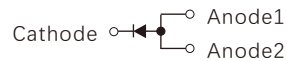
FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast and soft recovery time for high efficiency
- Low VF ,Low power loss
- Polyimide passivation
- High surge capability
- High temperature soldering guaranteed:260℃/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU
- AEC-Q101 qualified and PPAP capable

AEC-Q101 Qualified

MECHANICAL DATA

- Case: TO-277 molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750,method 2026
- Mounting Position: Any
- Weight: 0.092 grams(approx)



TYPICAL 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

MARKING:
JF-Logo
W-Work week
M-Work month
Y-Work year
S-Assembly loacation
MURP1020-V -Device code
V-for automobile

MAXIMUM RATINGS

(Ratings at 25℃ 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
Operating junction temperature range	T_J	-55 to+150	℃
Storage temperature range	T_{stg}	-55 to+150	℃

SEMICONDUCTOR

RATINGS AND CHARACTERISTIC OF MURP1020-V

ELECTRICAL CHARACTERISTCS (T_J=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max .	Unit
Breakdown voltage Blocking voltage	IR=100μA		V_{BR} V_R	200	-	-	V
Instaneous forward voltage	T_J=25℃	I_F=1.0A	V_F 1)	-	0.70	-	V
		I_F=6.0A		-	0.86	-	
		I_F=10.0A		-	0.90	0.95	
	T_J=125℃	I_F=1.0A		-	0.55	-	
		I_F=6.0A		-	0.72	-	
		I_F=10.0A		-	0.78	-	
Reverse current	T_J=25℃	V_R=200V	I_R 2)	-	0.1	2	μA
	T_J=100℃			-	1.0	-	μA
	T_J=125℃			-	5	50	
Junction capacitance	4V,1M Hz		C_J	-	110	-	pF

Notes: 1.Pulse test: 300μs pulse width,1% duty cycle

2.Pulse test: pulse width≤40ms

DYNAMIC RECOVERY CHARACTERISTCS (T_J=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max .	Unit
Reverse recovery time	I_F=0.5A,I_R=1A,I_{RR}=0.25A		trr	-	22	35	ns
	T_J=25℃	I_F=6A dI_F/dt=200A/μS V_R=160V		-	22	-	
	T_J=125℃			-	28	-	
Peak recovery current	T_J=25℃		I_{RRM}	-	2.5	-	A
	T_J=125℃			-	5	-	
Reverse recovery charge	T_J=25℃		Q rr	-	28	-	nc
	T_J=125℃			-	80	-	

THERMAL CHARACTERISTCS

Parameter	Symbol	TO-277	Unit
Typical thermal resistance [3]	$R_{\theta JL}$	3.0	℃/W

3 Units mounted on recommended PCB 1 oz. Pad layout

AVAILABALE PACK INFORMATION

Product code	Pack	Reel Size (mm)	Quantity (pcs/reel)	Box Size L×W×H (mm)	Quantity (reel/box)	Carton Size L×W×H (mm)	Quantity (box/carton)
MURP1020-V -TO-277	T/R	φ330	5000	338×338×40	2	365×365×360	7

FIG.1-FORWARD CURRENT DERATING CURVE

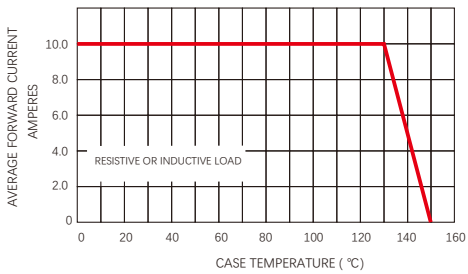


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

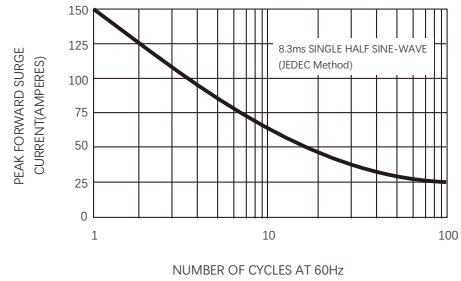


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

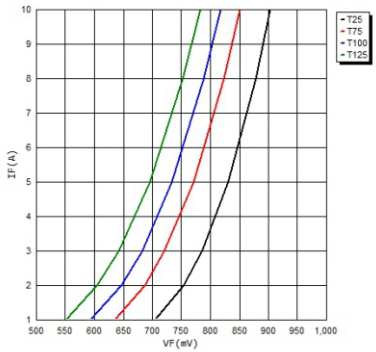


FIG.4-TYPICAL REVERSE CHARACTERISTICS

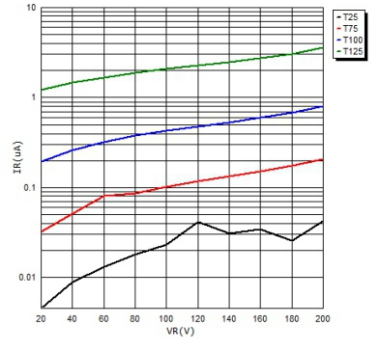


FIG.5-TYPICAL JUNCTION CAPACITANCE

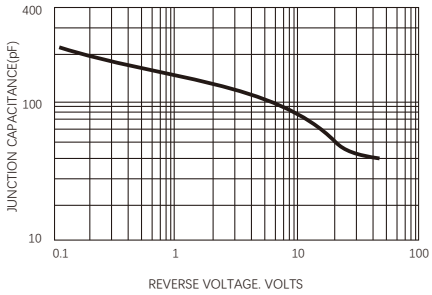


FIG.6- TYPICAL REVERSE RECOVERY TIME vs. dIF/dt

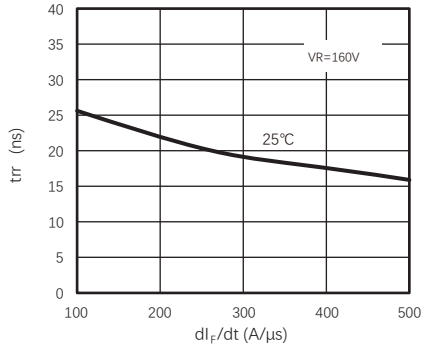


FIG.7- TYPICAL STORED CHARGE VS.dIF/dt

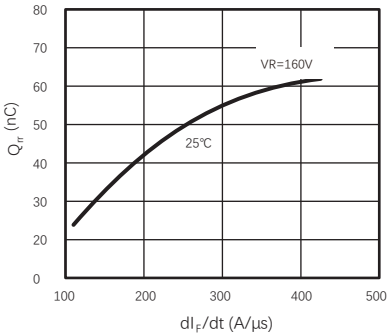
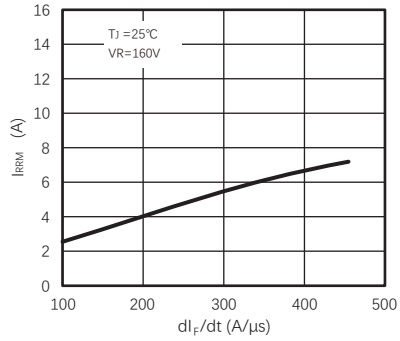
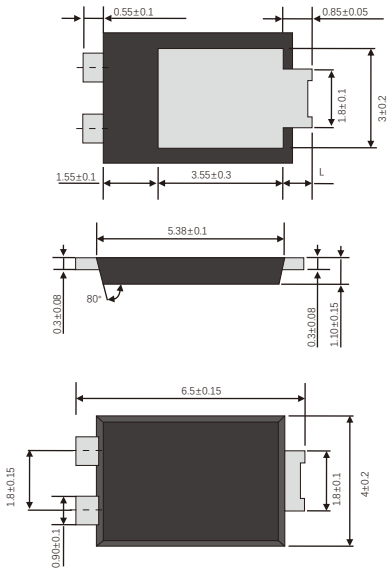


FIG.8- TYPICAL REVERSE RECOVERY CURRENT vs.dIF/dt

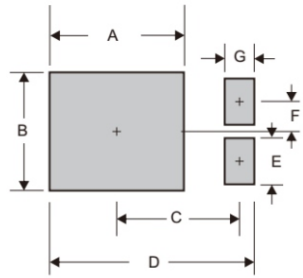


Dimensions in millimetrers



Suggested Pad

■ TO-277 foot print



A	B	C	D	E	F	G
0.185 (4.70)	0.142 (3.60)	0.152 (3.87)	0.260 (6.60)	0.055 (1.40)	0.035 (0.90)	0.031 (0.80)

Dimensions in inches and (millimeters)

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