SEMICONDUCTOR

MUR6020P

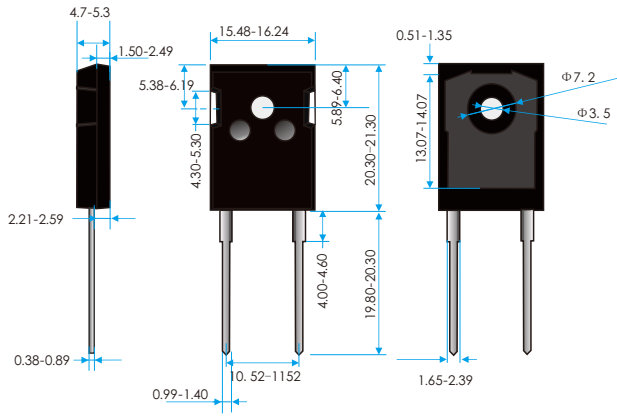
POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

Reverse Voltage - 200 Volts
Forward Current - 60.0Amperes

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast Recovery Characteristics
- Low forward voltage drop
- Low Reverse Leakage Current
- Soft Recovery Characteristics
- High temperature soldering guaranteed:260℃/10 seconds, 0.25"(6.35mm)from case
- Component in accordance to RoHS 2015/863/EU

TO-247AC



Dimensions in millimeters

MECHANICAL DATA

- Case: TO -247AC molded plastic body
- Terminals: Lead solderable per MIL-STD-750,method 2026
- Polarity: As marked
- Mounting Position: Any

APPLICATIONS

- Anti-Parallel Diode
  -Switching Power Supply
  -Inverters
- Free wheeling Diode
  -Motor Controller
  -Converters
  -Inverters
- PFC
- Snubber,Clamp diode

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	$I_{F(AV)}$	60.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T_L)	I_{FSM}	600	A
Operating junction temperature range	T_J	-55 to+175	℃
Storage temperature range	T_{stg}	-55 to+175	℃

RATINGS AND CHARACTERISTIC OF MUR6020P

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=60.0A	V_F 1)	–	0.96	1.08	V
	T_J=125℃	I_F=60.0A		–	0.87	0.95	
Reverse current	T_J=25℃	V_R=200V	I_R 2)	–	–	30	μA
	T_J=100℃			–	–	100	μA
	T_J=150℃			–	–	300	
Junction capacitance	4V,1MHz		C_J	–	185	–	pF

Notes: 1.Pulse test: 300 μs 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=1.0A, Irr=0.25A	trr	–		55	ns
	I_F= 1A, V_R= 30V dI /dt=200A/μS		–	30	45	

THERMAL CHARACTERISTCS

Parameter	Symbol	TO-247AC	Unit
Typical thermal resistance 3)	$R_{\theta JC}$	0.72	℃/W

3.Thermal resistance from junction to case

RATINGS AND CHARACTERISTIC OF MUR6020P

AVAILABALE PACK INFORMATION

Product code	Pack	Box Size L×W×H(mm)	Quantity(pcs/box)	Carton SizeL×W×H(mm)	Quantity(box/carton)
MUR6020P-TO-247AC	P/T	530×110×60	360	550×330×130	5

FIG.1-FORWARD CURRENT DERATING CURVE

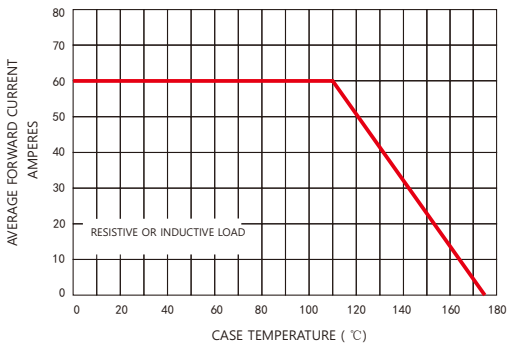
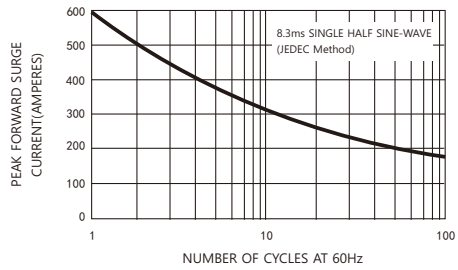


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



RATINGS AND CHARACTERISTIC OF MUR6020P

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

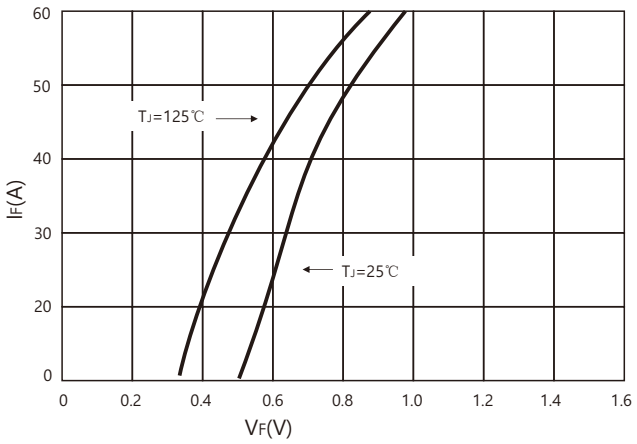


FIG.4-TYPICAL REVERSE CHARACTERISTICS

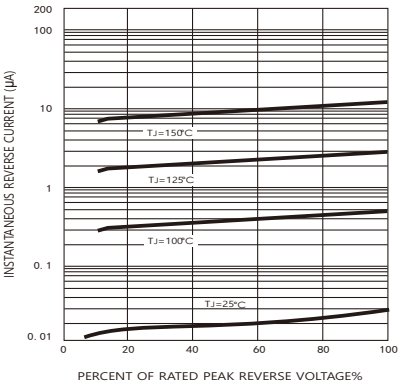


FIG.5-TYPICAL REVERSE RECOVERY CURRENT VS.dIF/dt

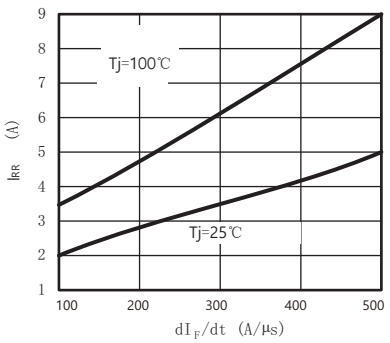


FIG.6- TYPICAL REVERSE RECOVERY TIME vs. dIF/dt

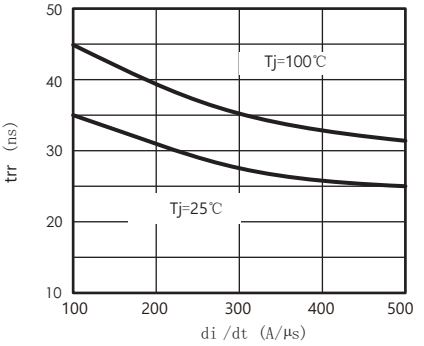


FIG.7-TYPICAL JUNCTION CAPACITANCE

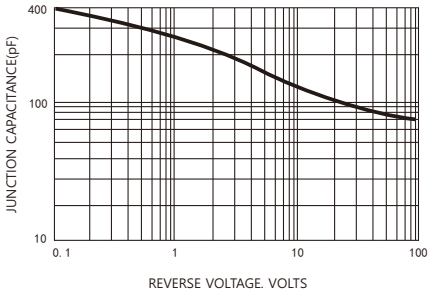
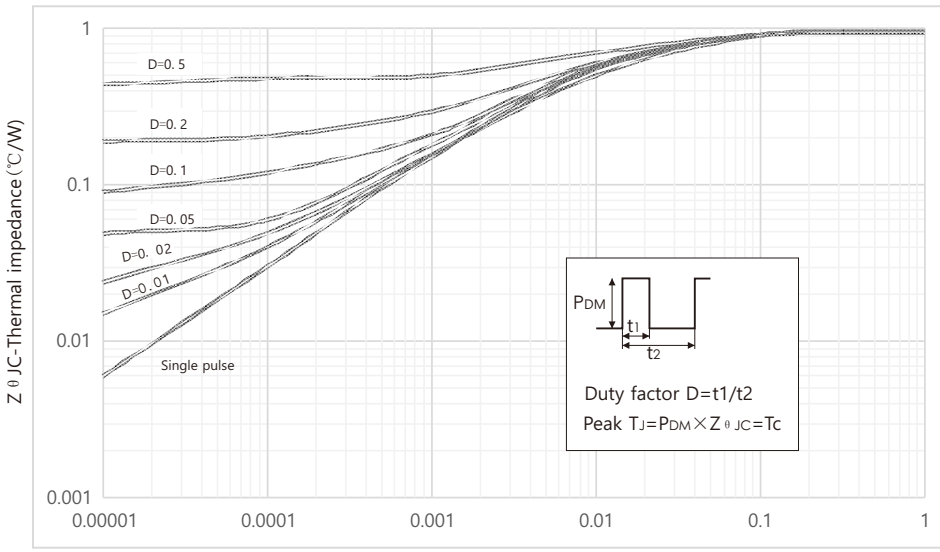
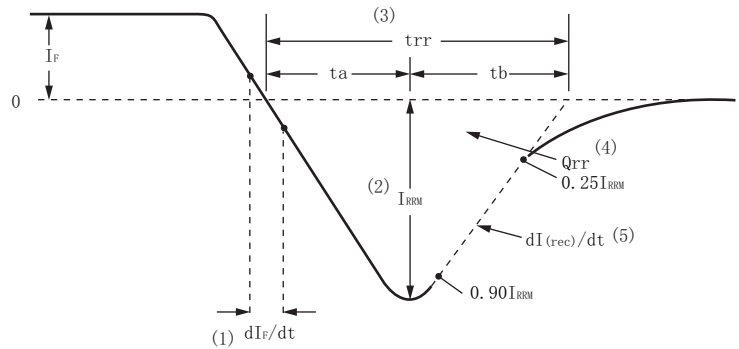


FIG.8- Maximum Thermal Impedance $Z_{\theta JC}$ characteristics





(1) dIF/dt-rate of change of current through zero crossing

(2) IRRM-peak reverse recovery current

(3) trr- reverse recovery time measured from zero crossing point of negative going IF to point where a line passing through 0.90IRRM and 0.25IRRM extrapolated to zero current

(4) Qrr- aera under curve defined by trr and IRRM

$$Qrr = \frac{t_{rr} \times I_{RRM}}{2}$$

(5) $dI_{(REC)}/dt$-peak rate of change of current during tb portion of trr

FIG. 9 - Reverse Recovery Waveform and De nitions

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