

FEATURES

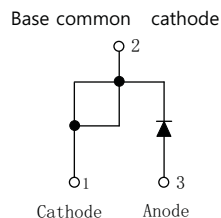
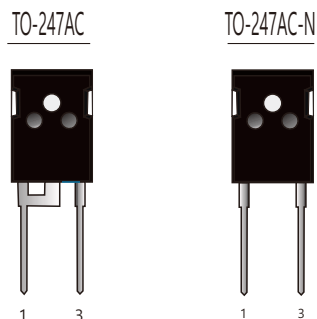
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast Recovery Characteristics
- Low forward voltage drop
- Low Reverse Leakage Current
- Soft Recovery Characteristics
- High temperature soldering guaranteed:260 °C/10 seconds, 0.25"(6.35mm)from case
- Component in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

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 °C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	1200	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_J)	I_{FSM}	420	A
Operating junction temperature range	T_J	-55 to +175	°C
Storage temperature range	T_{stg}	-55 to +175	°C

RATINGS AND CHARACTERISTIC OF MUR60120P

ELECTRICAL CHARACTERISTICS (T_J=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	I _R =100μA		V _{BR} V _R	1200	-	-	V
Instaneous forward voltage	T _J =25℃	I _F =60.0A	V _F ¹⁾	-	1.65	2.40	V
	T _J =125℃	I _F =60.0A		-	1.45	2.20	
Reverse current	T _J =25℃	V _R =1200V	I _R ²⁾	-	-	20	μ A
	T _J =100℃			-	-	100	μ A
	T _J =150℃			-	-	200	
Junction capacitance	4V,1MHz		C _J	-	300	-	pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width ≤40ms

DYNAMIC RECOVERY CHARACTERISTICS (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, I _{rr} =0.25A	trr	-	65	95	ns
	I _F = 1A, V _R = 30V dI / d t=200A/μS		-	48	70	

THERMAL CHARACTERISTICS

Parameter	Symbol	TO-247AC TO-247AC-N	Unit
Typical thermal resistance ³⁾	R _{θJC}	0.70	℃/W

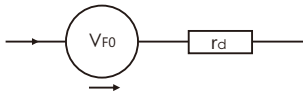
3.Thermal resistance from junction to case

RATINGS AND CHARACTERISTIC OF MUR60120P

AVAILABALE PACK INFORMATION

Product code	Pack	Box Size L×W×H(mm)	Quantity (pcs/box)	Carton Size L×W×H(mm)	Quantity (box/carton)
MUR60120P-TO-247AC	P/T	530×110×60	360	550×330×130	5
MUR60120P-TO-247AC-N	P/T	530×110×60	360	550×330×130	5

Equivalent circuits for power loss calculation



VF0: threshold voltage 0.95V
rd: Dynamic resistance 0.0073Ω
Forward power loss of diode= $V_{F0} \times I_F(AV) + r_d \times I_F(RMS)^2$

FIG.1-FORWARD CURRENT DERATING CURVE

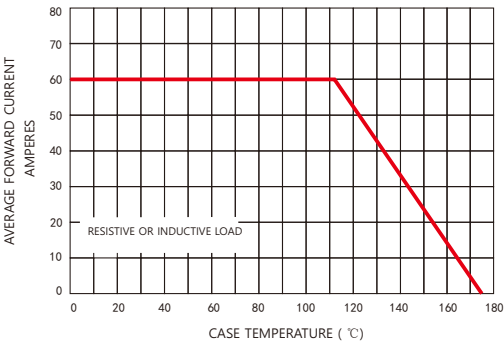
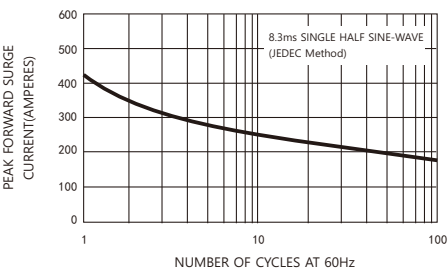


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



RATINGS AND CHARACTERISTIC OF MUR60120P

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

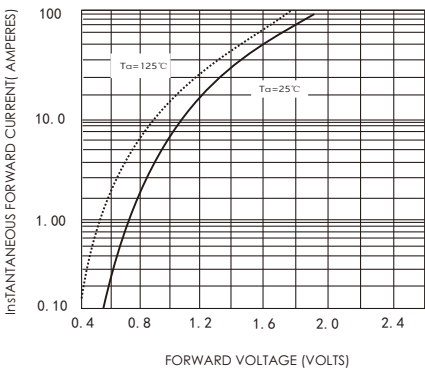


FIG.4-TYPICAL REVERSE CHARACTERISTICS

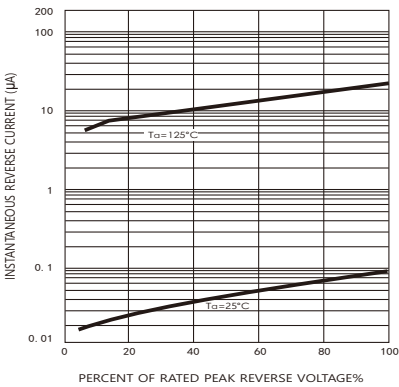


FIG.6- TYPICAL REVERSE RECOVERY TIME vs. dI_F/dt

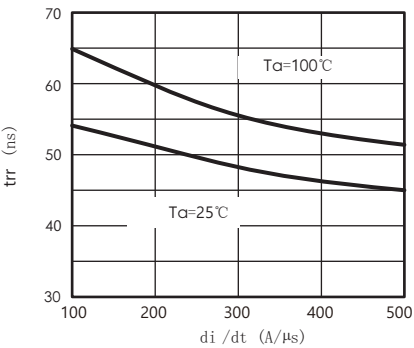
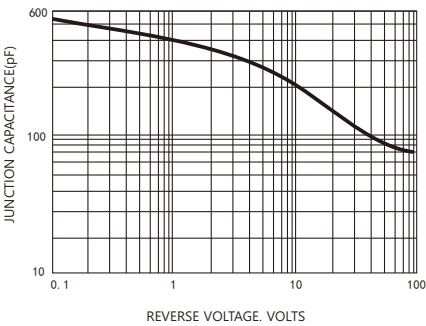
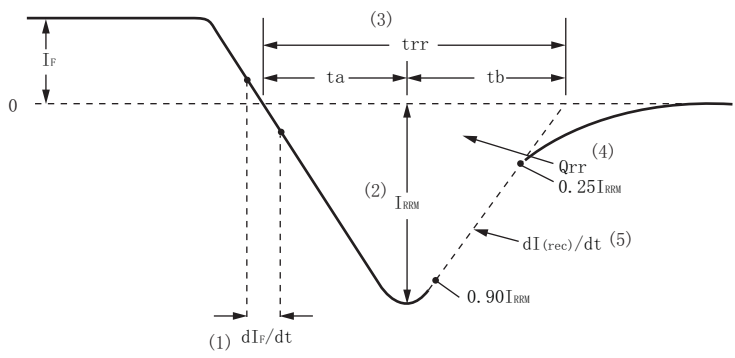
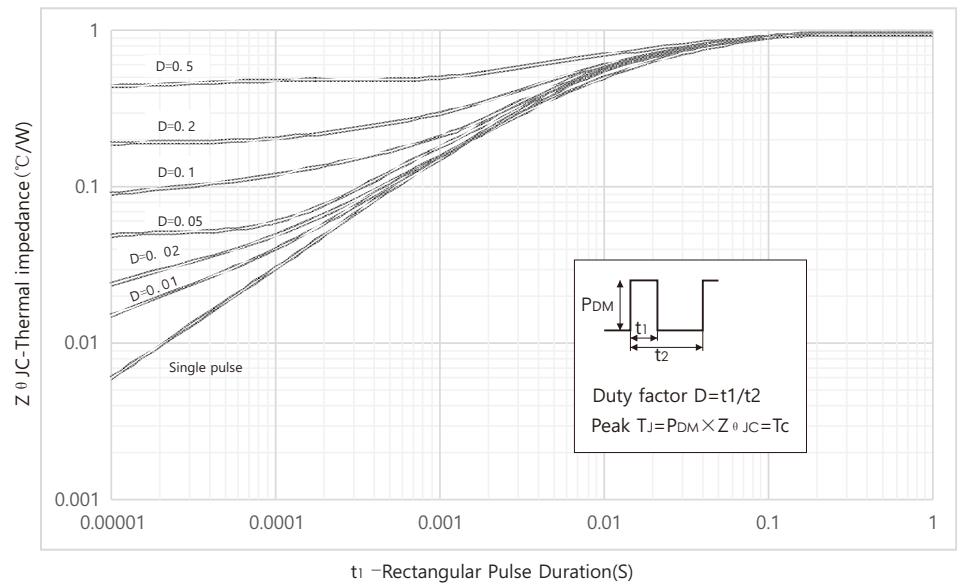


FIG.7-TYPICAL JUNCTION CAPACITANCE



RATINGS AND CHARACTERISTIC OF MUR60120P

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



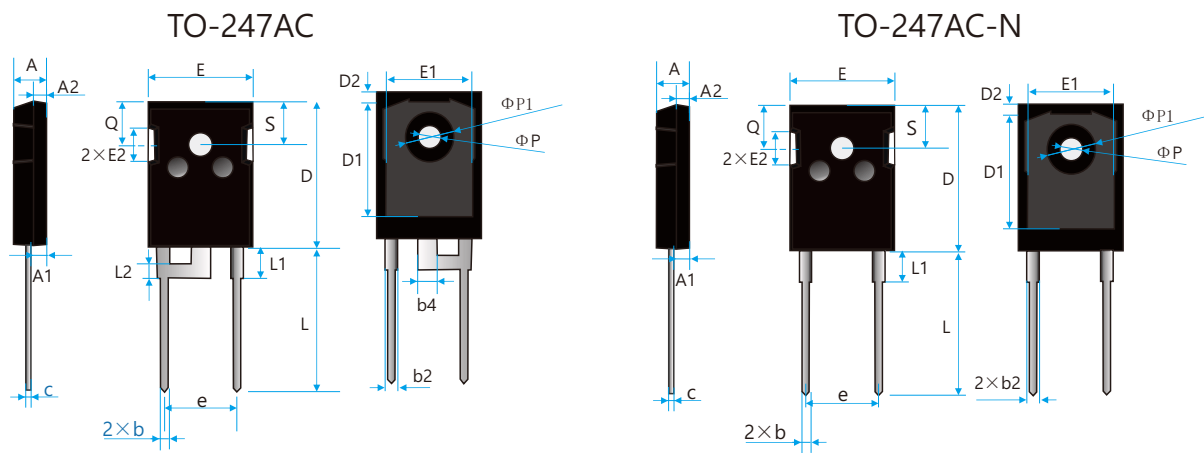
- (1) dI_F/dt -rate of change of current through zero crossing
- (2) I_{RRM} -peak reverse recovery current
- (3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through $0.90I_{RRM}$ and $0.25I_{RRM}$ extrapolated to zero current
- (4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}

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

- (5) $dI_{(rec)}/dt$ -peak rate of change of current during t_b portion of t_{rr}

FIG. 9 - Reverse Recovery Waveform and Definitions

PACKAGE OUTLINE DIMENSIONS



Symbol	millimeter		
	Min.	Typ.	MAX
A	4.70		5.30
A1	2.21		2.59
A2	1.50		2.49
D	20.30		21.30
E	15.48		16.24
E2	4.30		5.50
e		10.92	
L	19.80		20.30
L1	4.00		4.60
ΦP		3.50	
Q	5.38		6.19
S		6.14	
b	0.99		1.40
b2	1.65		2.39
b4	2.59		3.43
c	0.38		0.89
D1	13.07		
D2	0.51		1.35
E1	13.06		
$\Phi P1$		7.20	
L2		2.10	

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