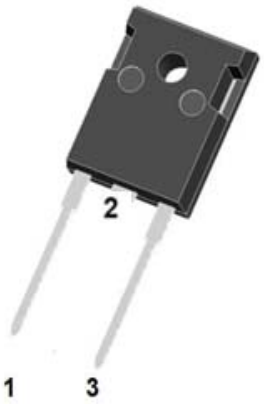
MUR30120P

Ultra-Fast Recovery Diodes 30A FRED Pt

Features

- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

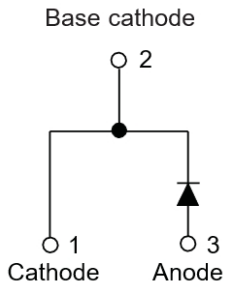


Typical Applications

●Typical applications are in switching power supplies, . converters, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package**: TO-247AC
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: As marked



TYPE	V_{RSM} V	V_{RRM} V
MUR30120	1200	1200

Absolute Maximum Ratings				
Parameter	**Symbol**	**Test Conditions**	**Values**	**Units**
Repetitive peak reverse voltage	V_{RRM}		1200	V
Continuous forward current	$I_{F(AV)}$	Tc =110°C	30	A
Single pulse forward current	I_{FSM}	Tc =25°C	210	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	60	
Operating junction	Tj		175	°C
Storage temperatures	Tstg		-55 to +175	°C

■Electrical Characteristics

Electrical characteristics (Ta=25°C unless otherwise specified)						
Parameter	**Symbol**	**Test Conditions**	**Min**	**Typ.**	**Max.**	**Units**
Breakdown voltage Blocking voltage	V_{BR}, V_R	I_R=100μA	1200			V
Forward voltage (Per Diode)	V_F	I_F=30A		2.10	2.70	
		I_F=30A, Tj =125°C		1.85	2.50	
Reverse leakage current(Per Diode)	I_R	V_R= V_{RRM}			20	μA
		Tj=150°C, V_R=600V			200	
Reverse recovery time(Per Diode)	t_{rr}	I_F=0.5A, I_R=1A, I_{RR}=0.25A		50	70	ns
		I_F=1A,V_R=30V, di/*dt* =200A/us		32	50	

Thermal characteristics

Paramter	**Symbol**	Typ	Units
Junction-to-Case	$R_{\theta JC}$	0.8	℃/W

■ **Characteristics**(Typical)

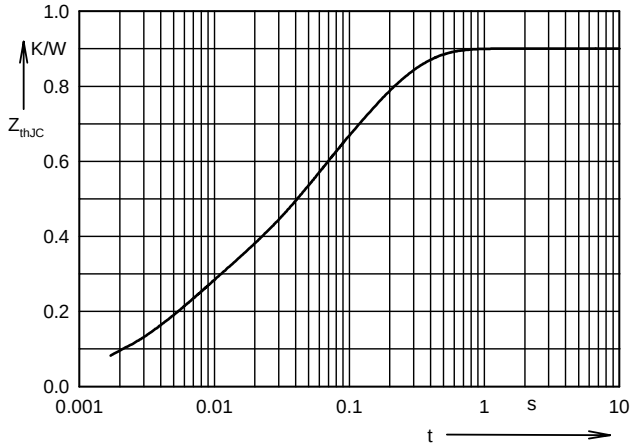


Fig. 7 Transient thermal impedance junction to case.

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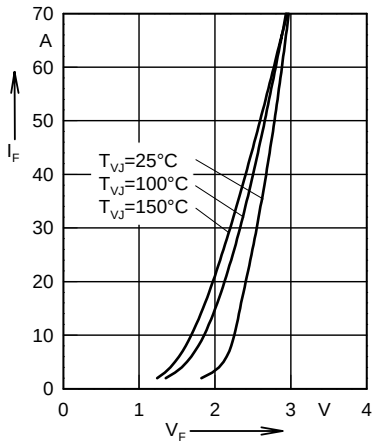


Fig. 1 Forward current versus voltage drop.

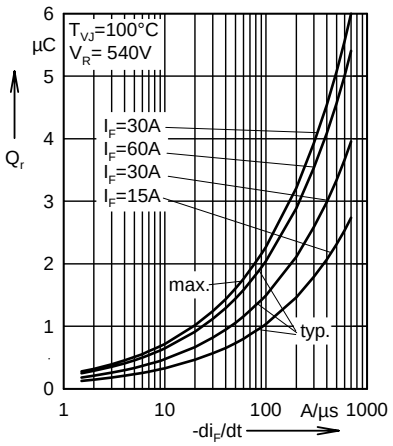


Fig. 2 Recovery charge versus $-di_F/dt$.

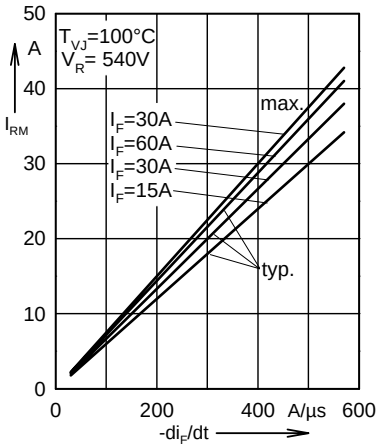


Fig. 3 Peak reverse current versus $-di_F/dt$.

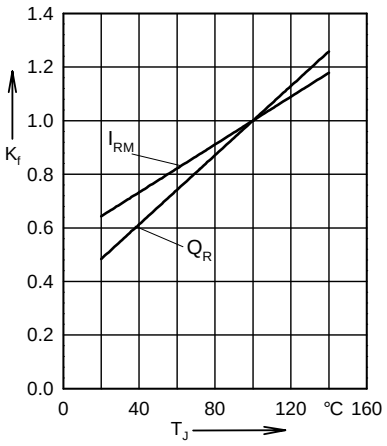


Fig. 4 Dynamic parameters versus junction temperature.

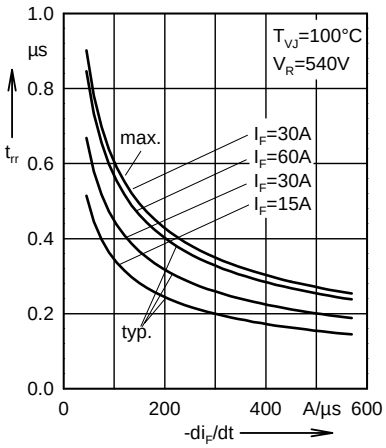


Fig. 5 Recovery time versus $-di_F/dt$.

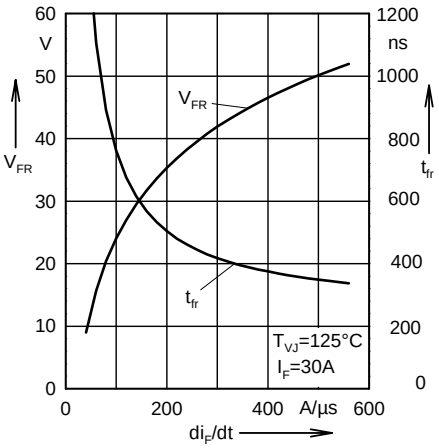
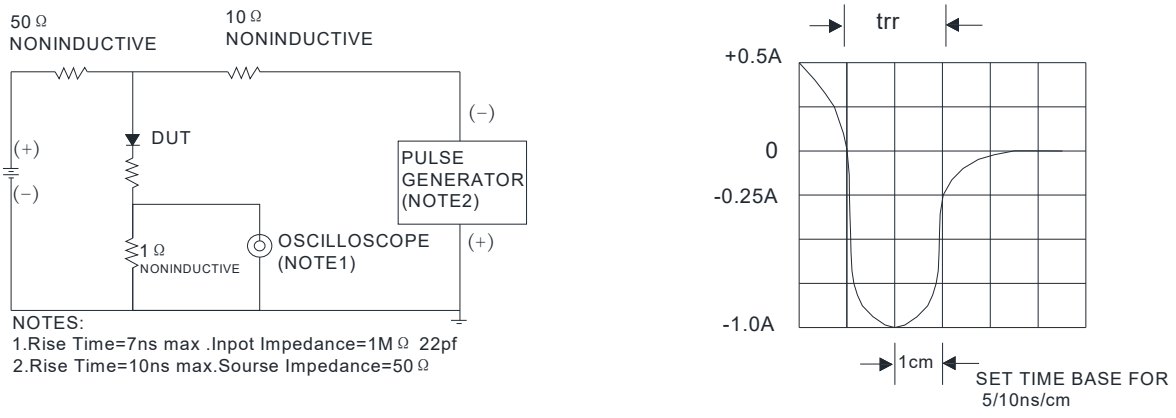


Fig. 6 Peak forward voltage versus di_F/dt.

FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



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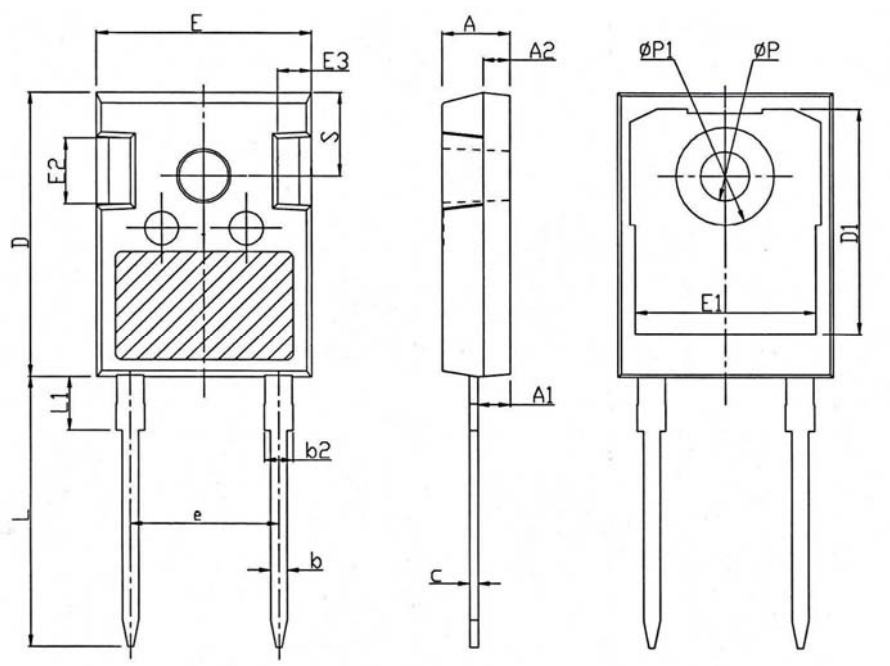
■ Outline Dimensions



TO247-2L		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.11	1.36
b2	1.91	2.21
c	0.51	0.75
D	20.70	21.30
D1	16.25	16.85
E	15.50	16.10
E1	13.00	13.60
E2	4.80	5.20
E3	2.30	2.70
e	10.88 TYP	
L	19.62	20.22
L1	-	4.30
φP	3.40	3.80
φP1	-	7.30
S	6.15 TYP	

Packge	Packing	Box Size L×W×H(mm)	Quatity(pcs/box)	Carton Size L×W×H(mm)	Quatity(pcs/carton)
TO-247	30pcs/Tube	570×155×50	450	580×340×125	1800