

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

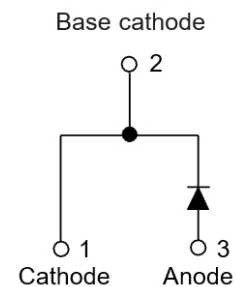
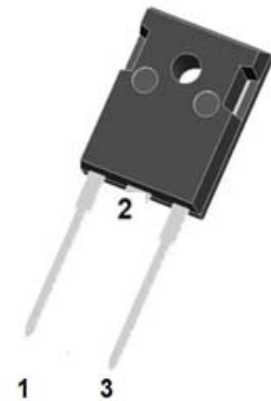
- Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package:** TO-247-2L
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
MUR60120PL	1200	1200

TO-247-2L



Symbol	Test Conditions	Maximum Ratings	Unit
I _{FRMS} I _{FAVM} I _{FRM}	T _{VJ} =T _{VJM} T _C =60°C; rectangular, d=0.5 t _p <10us; rep. rating, pulse width limited by T _{VJM}	100 52 800	A
I _{FSM}	T _{VJ} =45°C t=10ms (50Hz), sine t=8.3ms (60Hz), sine	500 540	A
	T _{VJ} =150°C t=10ms(50Hz), sine t=8.3ms(60Hz), sine	450 480	
I ² t	T _{VJ} =45°C t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1250 1200	A ² s
	T _{VJ} =150°C t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1000 950	
T _{VJ} T _{VJM} T _{stg}		-40...+150 150 -40...+150	°C
P _{tot}	T _C =25°C	189	W
M _d	Mounting torque	0.8...1.2	Nm
Weight	typical	6	g

■Electrical Characteristics

Symbol	Test Conditions	Characteristic Values typ.	max.	Unit
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ $T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$ $T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		2.2 0.5 14	mA
V_F	$I_F=60\text{A}; T_{VJ}=150^{\circ}\text{C}$ $T_{VJ}=25^{\circ}\text{C}$		2.0 2.55	V
V_{TO}	For power-loss calculations only		1.65	V
r_T	$T_{VJ}=T_{VJM}$		8.3	$\text{m}\Omega$
R_{thJC} R_{thCK} R_{thJA}		0.25	0.66 35	K/W
t_{rr}	$I_F=1\text{A}; -di/dt=200\text{A/us}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	40	60	ns
I_{RM}	$V_R=540\text{V}; I_F=60\text{A}; -di_F/dt=480\text{A/us}; L \leq 0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$	32	36	A

■Thermal Characteristics ($T_j=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR60120PL
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}\text{C/W}$	1.0
	Between junction and Air	$R_{\theta J-A}$	$^{\circ}\text{C/W}$	50

■ Characteristics(Typical)

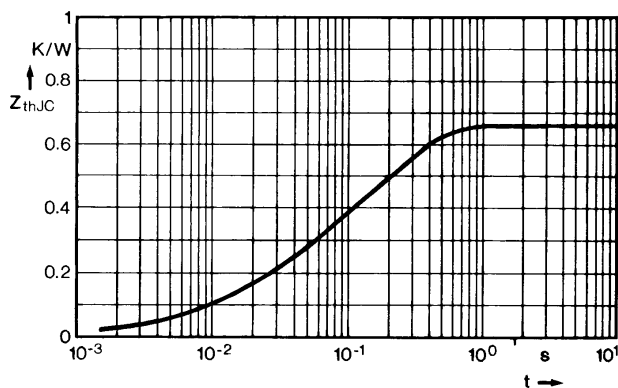


Fig. 7 Transient thermal impedance junction to case.

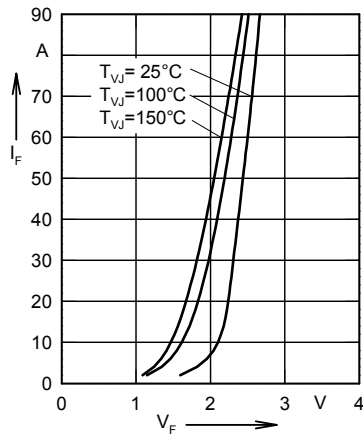


Fig. 1 Forward current versus voltage drop.

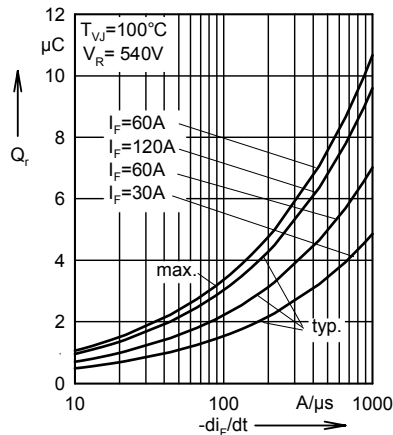


Fig. 2 Recovery charge versus $-di_F/dt$.

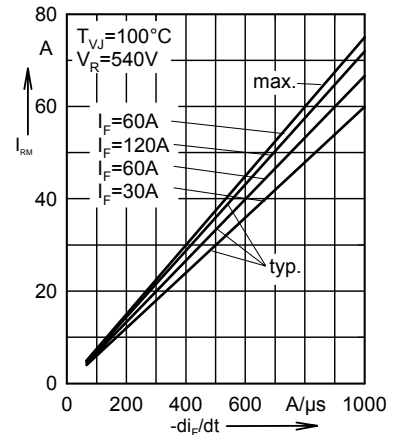


Fig. 3 Peak reverse current versus $-di_F/dt$.

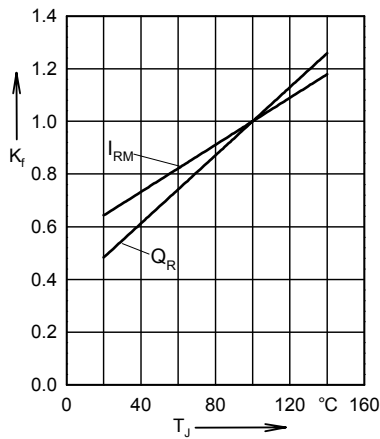


Fig. 4 Dynamic parameters versus junction temperature.

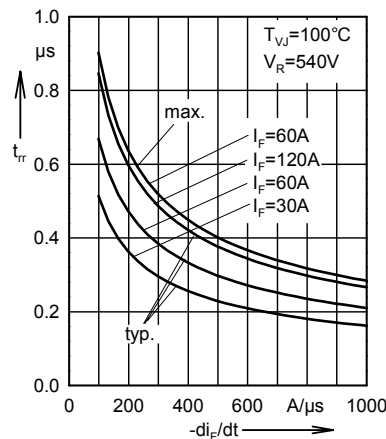


Fig. 5 Recovery time versus $-di_F/dt$.

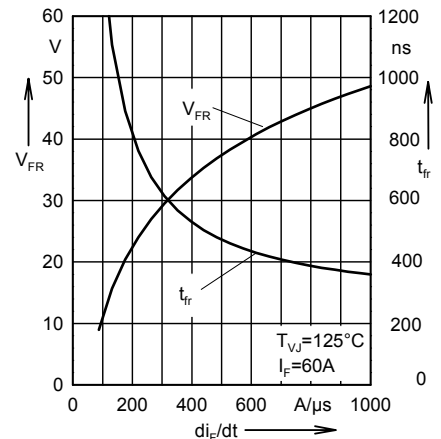
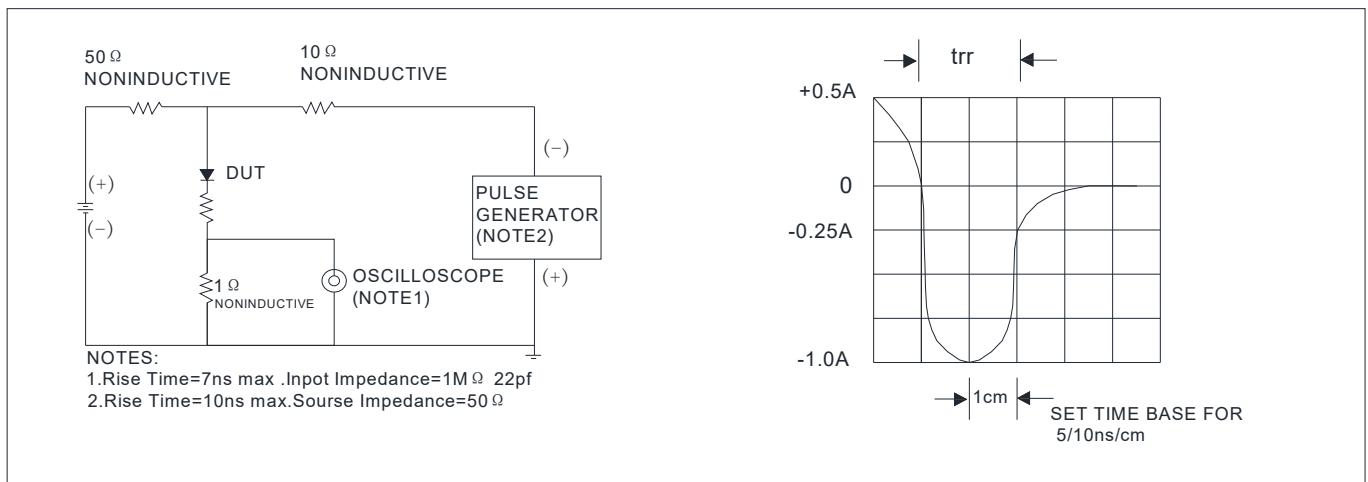
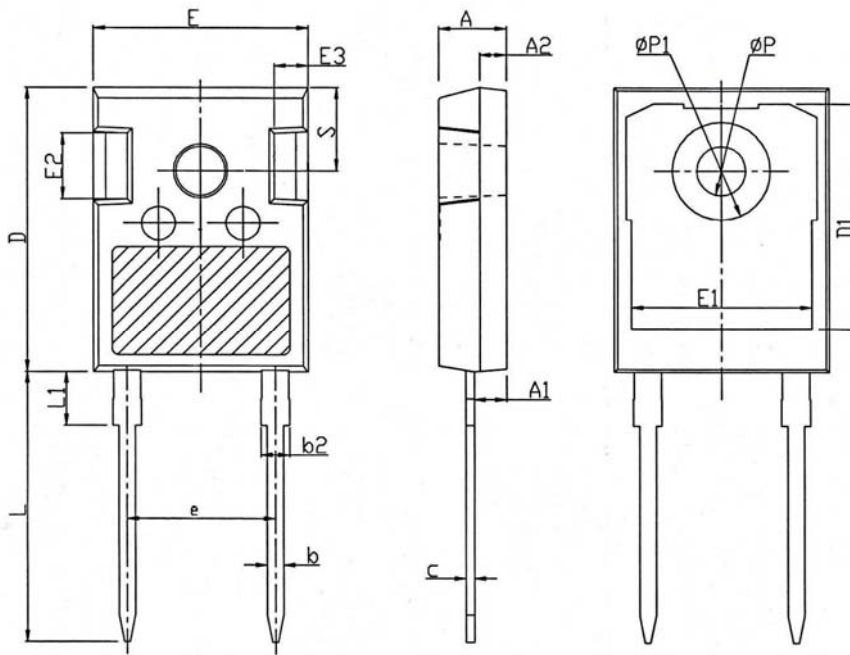


Fig. 6 Peak forward voltage versus di_F/dt .

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



■ Outline Dimensions



TO-247-2L		
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
ØP	3.40	3.80
ØP1	-	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