

Features

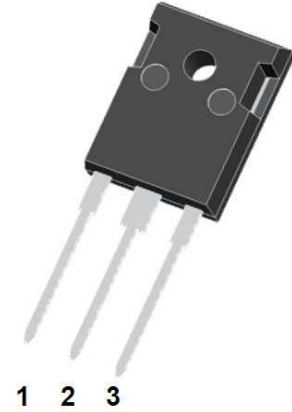
- Adopt FRD chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

Typical Applications

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

Mechanical Data

- **Package:** TO-247
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



■ Maximum Ratings (Ta=25°C Unless otherwise specified)

TYPE	V _{RSM} V	V _{RRM} V
MUR3040PT	400	400

Symbol	Test Conditions	Maximum Ratings	Unit
I _{FRMS}	T _{VJ} =T _{VJM}	25	A
I _{FAVM}	T _C =100°C; rectangular, d=0.5	30	
I _{FRM}	t _p <10us; rep. rating, pulse width limited by T _{VJM}	150	
I _{FSM}	T _{VJ} =45°C t=10ms (50Hz), sine t=8.3ms (60Hz), sine	100 110	A
	T _{VJ} =150°C t=10ms(50Hz), sine t=8.3ms(60Hz), sine	85 95	
I ² t	T _{VJ} =45°C t=10ms (50Hz), sine t=8.3ms (60Hz), sine	50 50	A ² s
	T _{VJ} =150°C t=10ms(50Hz), sine t=8.3ms(60Hz), sine	36 37	
T _{VJ} T _{VJM} T _{stg}		-40...+150 150 -40...+150	°C
P _{tot}	T _C =25°C	62	W
M _d	Mounting torque	0.4...0.6	Nm
Weight	typical	6	g

■Electrical Characteristics

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I _R	T _{VJ} =25°C; V _R =V _{RRM}		50	μA
	T _{VJ} =25°C; V _R =0.8·V _{RRM}		25	μA
	T _{VJ} =125°C; V _R =0.8·V _{RRM}		3	mA
V _F	I _F =15A; T _{VJ} =150°C T _{VJ} =25°C		1.05 1.35	V
V _{TO}	For power-loss calculations only		1.12	V
r _T	T _{VJ} =T _{VJM}		23.2	mΩ
R _{thJC} R _{thCK} R _{thJA}		0.5	2 60	K/W
t _{rr}	I _F =1A; -di/dt=50A/us; V _R =30V; T _{VJ} =25°C	35	50	ns
I _{RM}	V _R =350V; I _F =15A; -di _F /dt=100A/us; L≤0.05μH; T _{VJ} =100°C	4	4.4	A

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR3040PT
Thermal Resistance	Between junction and case	R _{θJ-C}	°C/W	4.0
	Between junction and Air	R _{θJ-A}	°C/W	50

■Ordering Information (Example)

PREFERRED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
■ MUR3040PT	Approximate 1.6	50	1000	5000	Tube

■ Characteristics(Typical)

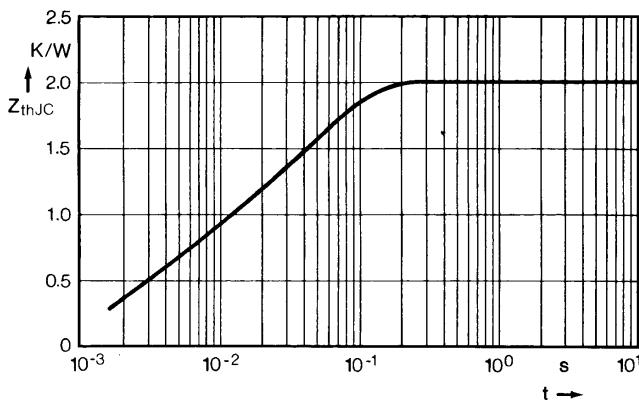


Fig. 7 Transient thermal impedance junction to case.

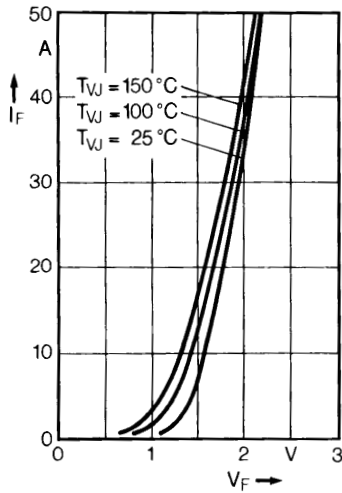


Fig. 1 Forward current versus voltage drop.

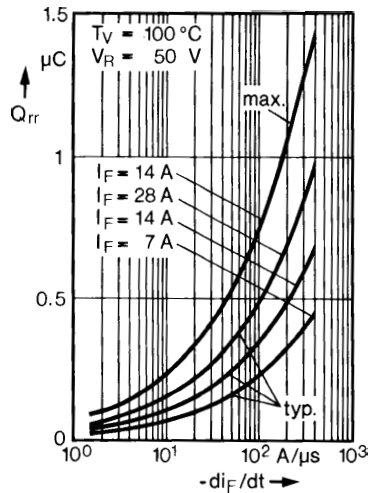


Fig. 2 Recovery charge versus $-di_F/dt$.

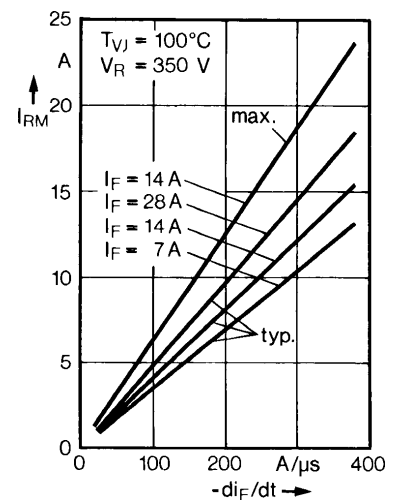


Fig. 3 Peak reverse current versus $-di_F/dt$.

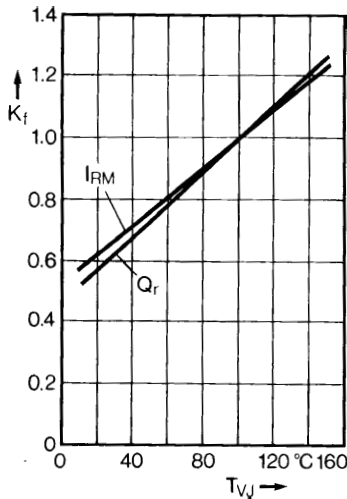


Fig. 4 Dynamic parameters versus junction temperature.

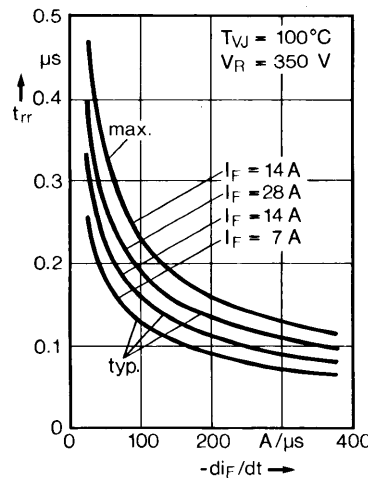


Fig. 5 Recovery time versus $-di_F/dt$.

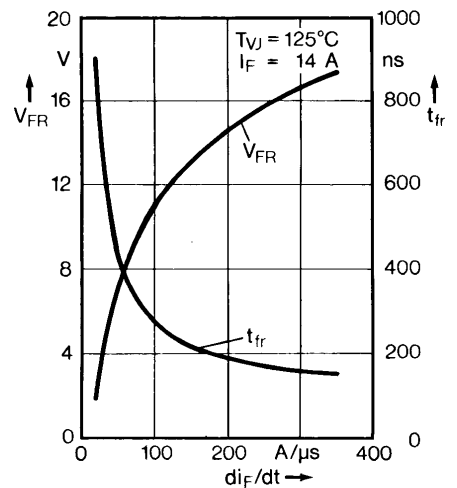
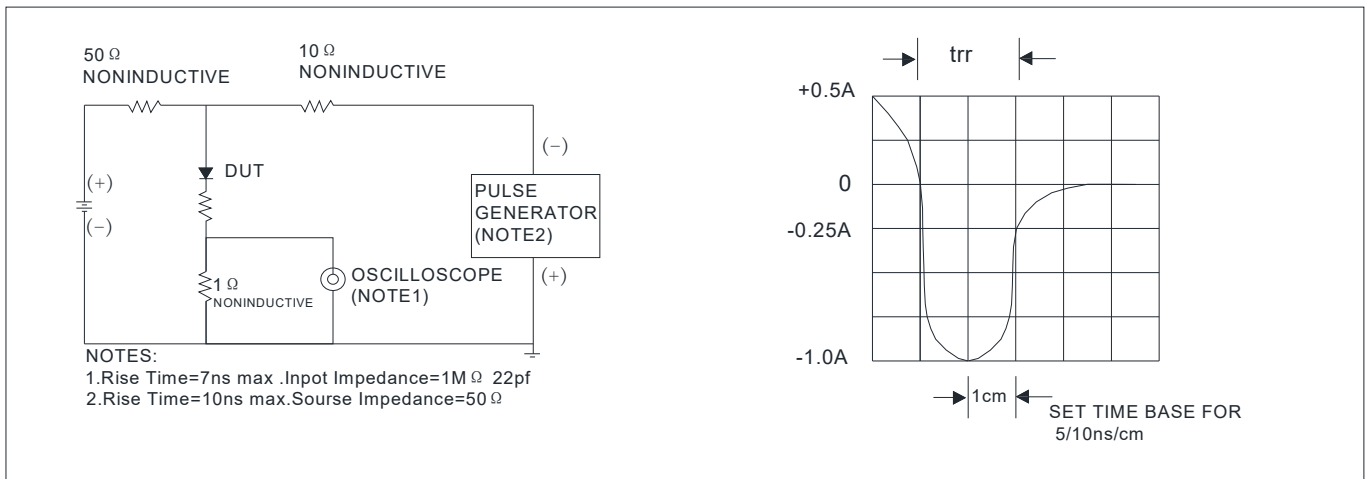
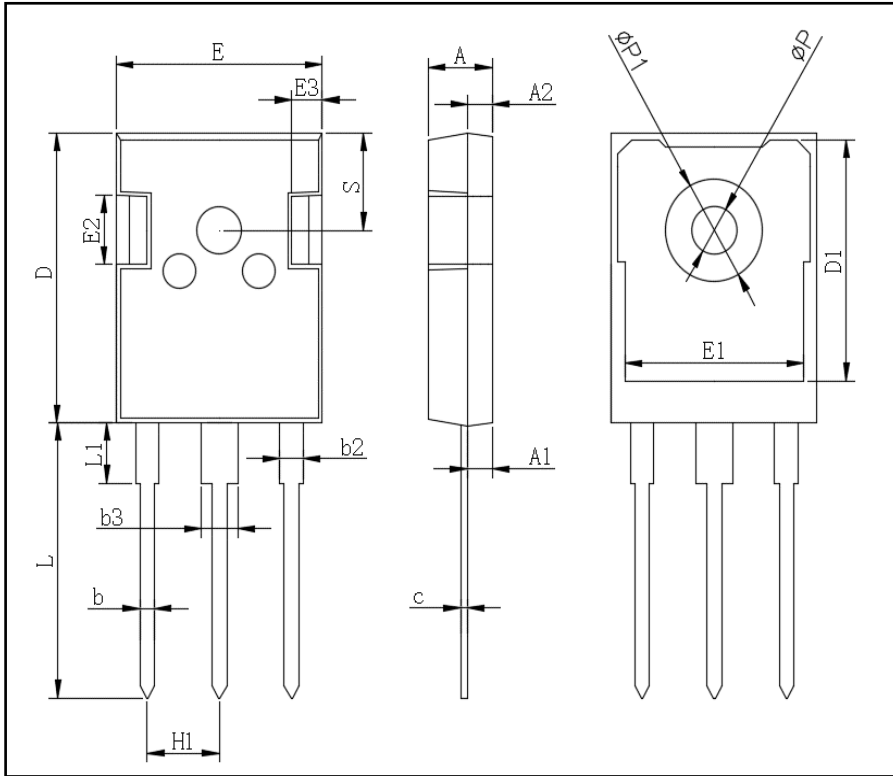


Fig. 6 Peak forward voltage versus di_F/dt .

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



■Outline Dimensions


TO-247AB		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.0	1.4
b2	1.91	2.21
C	0.5	0.7
D	20.70	21.30
D1	16.25	16.85
E	15.50	16.10
E1	13.0	13.6
E2	4.80	5.20
E3	2.30	2.70
L	19.62	20.22
L1	-	4.30
ΦP	3.40	3.80
ΦP1	-	7.30
S	6.15TYP	
H1	5.44TYP	
b3	2.80	3.20

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

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