MUR1560D

Ultra-Fast Recovery Diodes 15A 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.

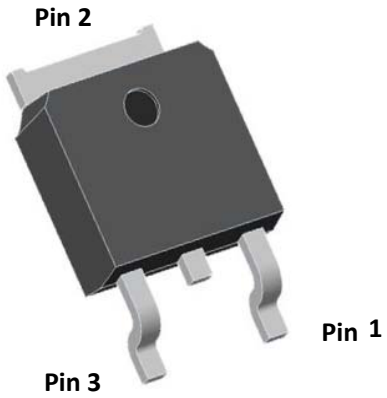
Mechanical Data

- **Package**: TO-252

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

TO-252



A=Anode, C=Cathode, TAB=Cathode

TYPE	V_{RSM} V	V_{RRM} V
MUR1560D	600	600

■Maximum Ratings (Tj=25℃ Unless otherwise specified)

Symbol	Test Conditions		Maximum Ratings	Unit
I_{FRMS} I_{FAVM} I_{FRM}	$T_{VJ}=T_{VJM}$ $T_C=100^oC$; rectangular, d=0.5 t_p<10us; rep. rating, pulse width limited by T_{VJM}		25 15 150	A
I_{FSM}	$T_{VJ}=45^oC$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	100 110	A
	$T_{VJ}=150^oC$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	85 95	
I^2t	$T_{VJ}=45^oC$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	50 50	A^2s
	$T_{VJ}=150^oC$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	36 37	
T_{VJ} T_{VJM} T_{stg}			-40...+150 150 -40...+150	^oC
P_{tot}	$T_C=25^oC$		62	W
M_d	Mounting torque		0.4...0.6	Nm
Weight			2	g

MUR1560D

■Electrical Characteristics

Symbol	Test Conditions	Characteristic Values typ.	max.	Unit
I_R	T_{VJ}=25°C; V_R=V_{RRM} T_{VJ}=25°C; V_R=0.8·V_{RRM} T_{VJ}=125°C; V_R=0.8·V_{RRM}		50 25 3	uA uA mA
V_F	I_F=15A; T_{VJ}=150°C T_{VJ}=25°C		1.5 1.7	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≤0.05uH; T_{VJ}=100°C	4	4.4	A

■Thermal Characteristics （Tj=25℃ Unless otherwise specified）

PARAMETER		SYMBOL	UNIT	MUR1560D
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	℃/W	5.0
	Between junction and Air	$R_{\theta J-A}$	℃/W	50

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MUR1560D	Approximate 0.31	2500	2500	25000	Reel

■Characteristics (Typical)

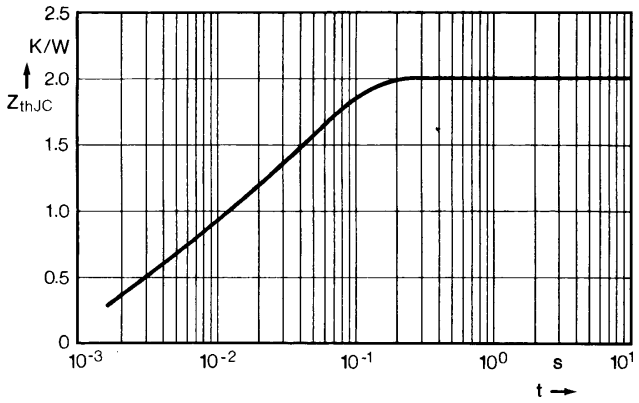


Fig. 7 Transient thermal impedance junction to case.

■Characteristics (Typical)

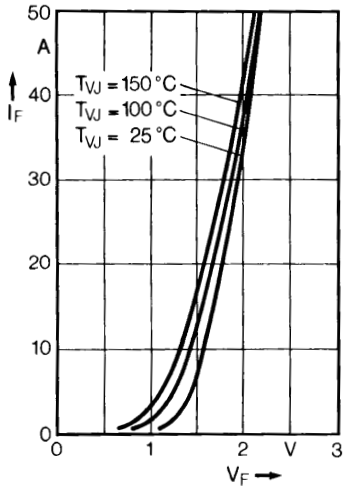


Fig. 1 Forward current versus voltage drop.

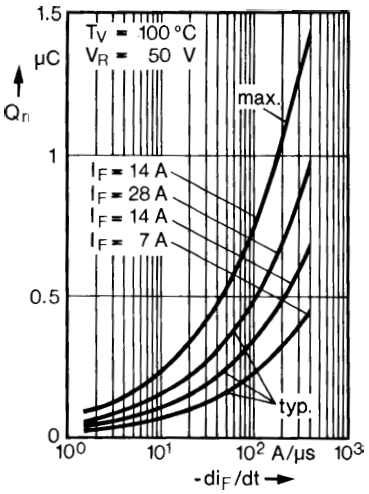


Fig. 2 Recovery charge versus $-di_F/dt$.

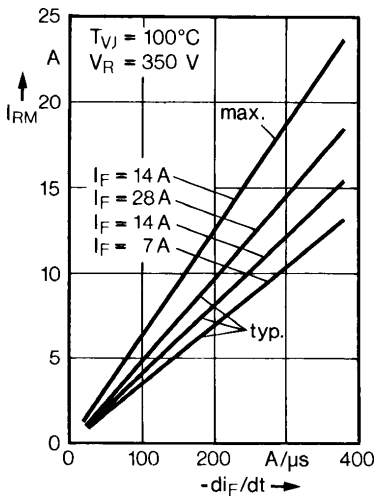


Fig. 3 Peak reverse current versus $-di_F/dt$.

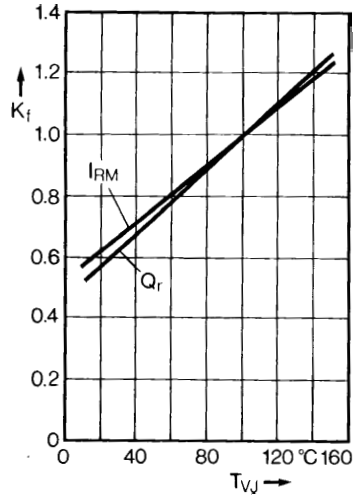


Fig. 4 Dynamic parameters versus junction temperature.

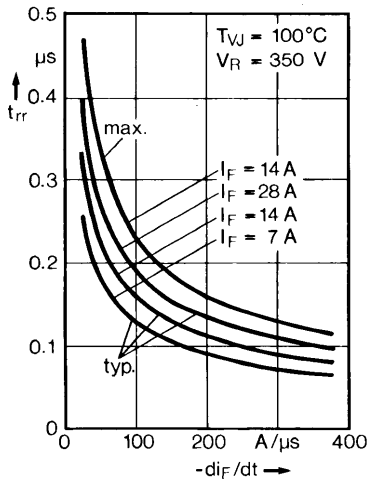


Fig. 5 Recovery time versus $-di_F/dt$.

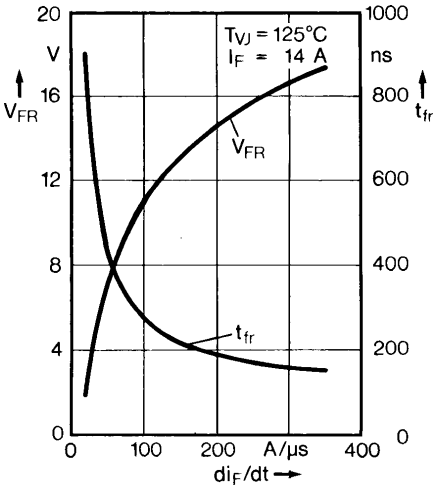
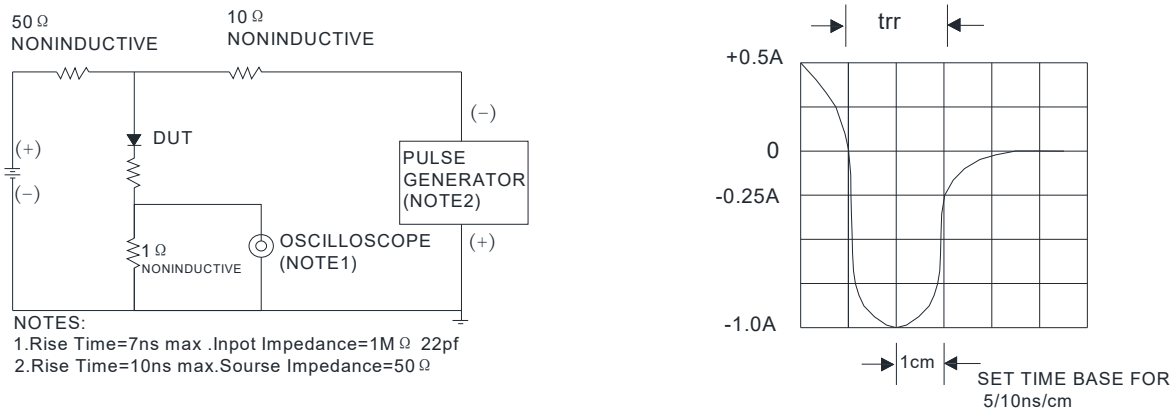


Fig. 6 Peak forward voltage versus di_F/dt.

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

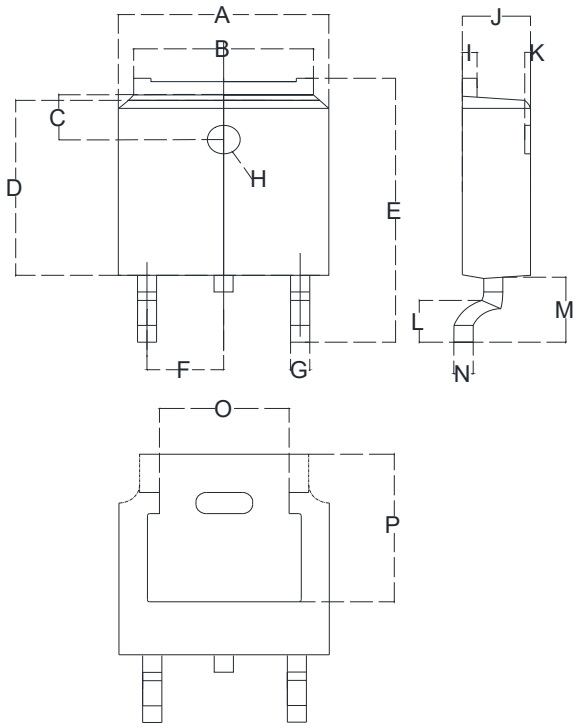


MUR1560D

■Outline Dimensions

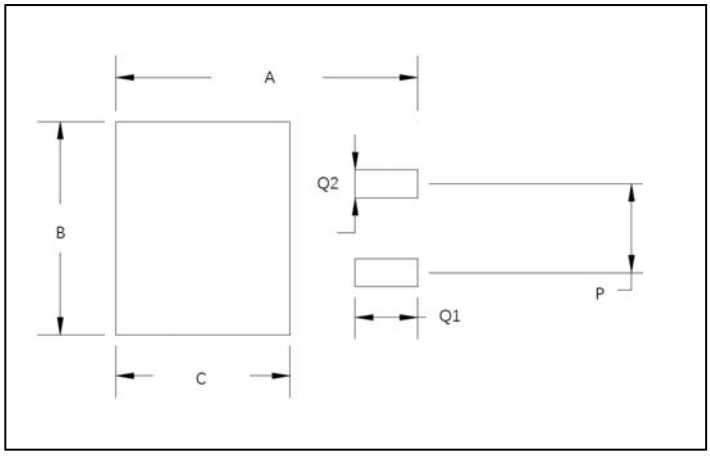
TO-252

单位：mm



TO-252		
Dim	Min	Max
A	6.500	6.700
B	5.100	5.460
C	1.400	1.800
D	6.000	6.200
E	10.000	10.400
F	2.166	2.366
G	0.660	0.860
H	Φ1.050	Φ1.350
I	0.460	0.580
J	2.200	2.400
K	0	0.300
L	0.890	2.290
M	2.730	3.080
N	0.430	0.580
O	4.20	4.95
P	5.15	5.45

■ Suggested Pad Layout



Dim	Millimeters
A	11.4
B	6.74
C	6.23
P	4.56
Q1	2.28
Q2	1.52

Packge	Pcking	Box Size L×W×H(mm)	Quatity(pcs/box)	Carton Size L×W×H(mm)	Quatity(pcs/carton)
TO-252	80pcs/Tube	560×178×35	4000	585×385×220	40000