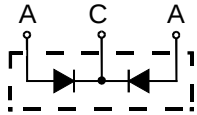
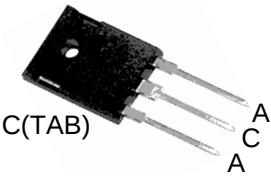
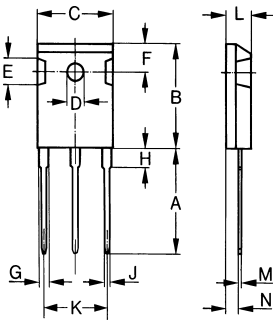


MUR30120PT

Ultra Fast Recovery Diodes



Dimensions TO-247AD



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

A=Anode, C=Cathode, TAB=Cathode

	V _{RSM} V	V _{RRM} V
MUR30120PT	1200	1200

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 <10µs; rep. rating, pulse width limited by T _{VJM}	150	
I _{FSM}	T _{VJ} =45°C	t=10ms (50Hz), sine	A
		t=8.3ms (60Hz), sine	
	T _{VJ} =150°C	t=10ms(50Hz), sine	
		t=8.3ms(60Hz), sine	
I ² t	T _{VJ} =45°C	t=10ms (50Hz), sine	A ² s
		t=8.3ms (60Hz), sine	
	T _{VJ} =150°C	t=10ms(50Hz), sine	
		t=8.3ms(60Hz), sine	
T _{VJ}		-40...+150	°C
T _{VJM}		150	
T _{stg}		-40...+150	
P _{tot}	T _C =25°C	78	W
M _d	Mounting torque	0.4...0.6	Nm
Weight		2	g

MUR30120PT

Ultra Fast Recovery Diodes

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$		250	uA
	$T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		150	uA
	$T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$		4	mA
V_F	$I_F=15\text{A}; T_{VJ}=150^{\circ}\text{C}$		2.2	V
	$T_{VJ}=25^{\circ}\text{C}$		2.6	
V_{TO}	For power-loss calculations only		1.65	V
r_T	$T_{VJ}=T_{VJM}$		46.2	mΩ
R_{thJC} R_{thCK} R_{thJA}		0.5	1.6	K/W
			60	
t_{rr}	$I_F=1\text{A}; -di/dt=50\text{A/us}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	50	70	ns
I_{RM}	$V_R=540\text{V}; I_F=15\text{A}; -di_F/dt=100\text{A/us}; L \leq 0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$	6.5	7.2	A

FEATURES

- * International standard package JEDEC TO-247AD
- * Planar passivated chips
- * Very short recovery time
- * Extremely low switching losses
- * Low I_{RM}-values
- * Soft recovery behaviour

APPLICATIONS

- * Rectifiers in switch mode power supplies (SMPS)
- * Uninterruptible power supplies (UPS)
- * Ultrasonic cleaners and welders

ADVANTAGES

- * High reliability circuit operation
- * Low voltage peaks for reduced protection circuits
- * Low noise switching
- * Low losses
- * Operating at lower temperature or space saving by reduced cooling

MUR30120PT

Ultra Fast Recovery Diodes

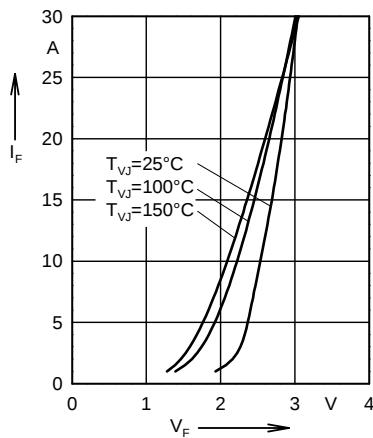


Fig. 1 Forward current versus voltage drop.

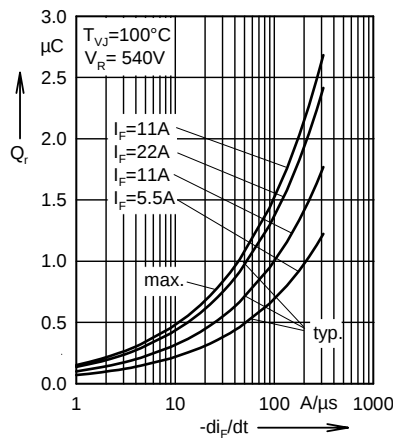


Fig. 2 Recovery charge versus $-di_F/dt$.

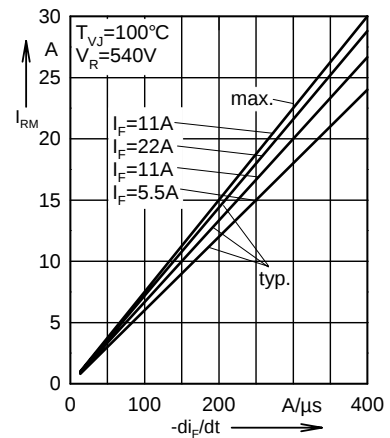


Fig. 3 Peak reverse current versus $-di_F/dt$.

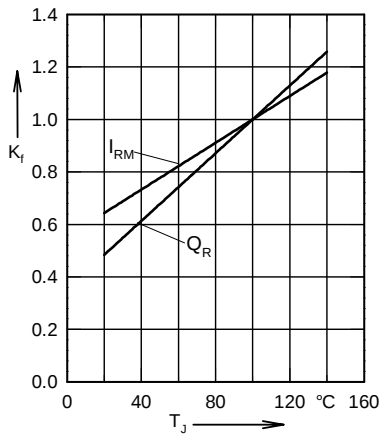


Fig. 4 Dynamic parameters versus junction temperature.

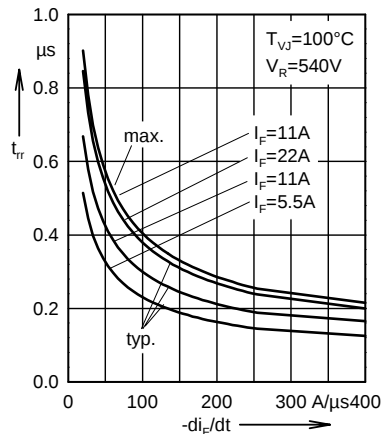


Fig. 5 Recovery time versus $-di_F/dt$.

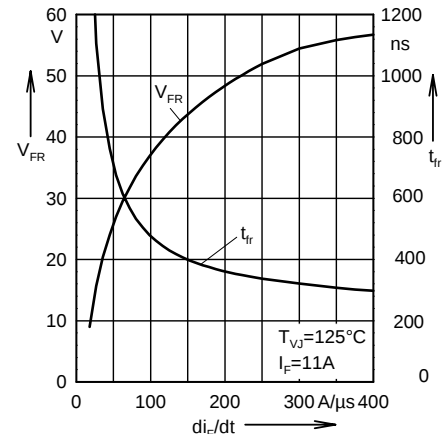


Fig. 6 Peak forward voltage versus di_F/dt .

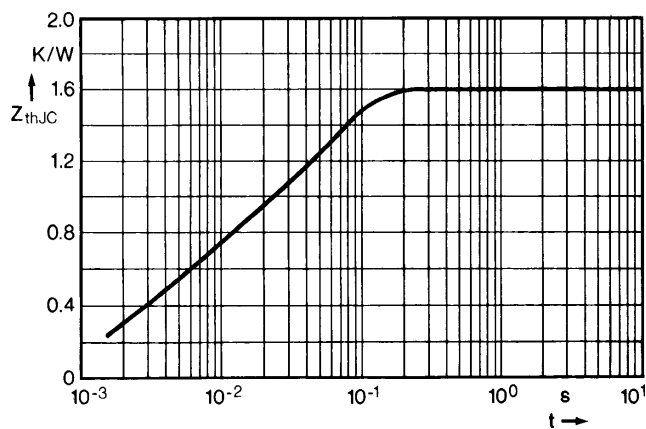


Fig. 7 Transient thermal impedance junction to case.