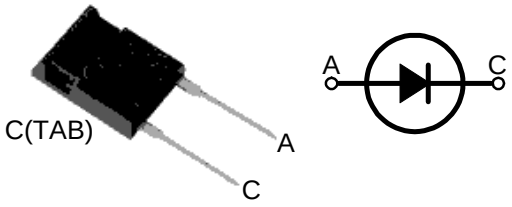
MUR6030, MUR6040, MUR6060

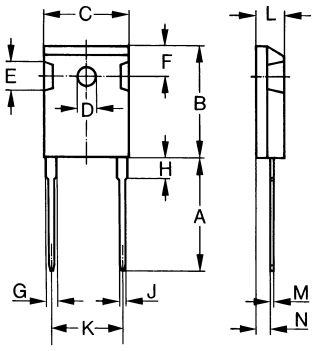
Ultra Fast Recovery Diodes



A=Anode, C=Cathode, TAB=Cathode

	V_{RSM} V	V_{RRM} V
MUR6030	300	300
MUR6040	400	400
MUR6060	600	600

Dimensions TO-247AC



Dim.	Millimeter Min.	Max.	Inches 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

Symbol	Test Conditions		Maximum Ratings	Unit
I_{FRMS} I_{FAVM} I_{FRM}	$T_{VJ}=T_{VJM}$ $T_C=70^oC$; rectangular, d=0.5 t_p<10us; rep. rating, pulse width limited by T_{VJM}		100 60 800	A
I_{FSM}	$T_{VJ}=45^oC$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	550 600	A
	$T_{VJ}=150^oC$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	480 520	
I^2t	$T_{VJ}=45^oC$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1510 1490	A^2s
	$T_{VJ}=150^oC$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1150 1120	
T_{VJ} T_{VJM} T_{stg}			-40...+150 150 -40...+150	^oC
P_{tot}	$T_C=25^oC$		166	W
M_d	Mounting torque		0.8...1.2	Nm
Weight			6	g

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Symbol	Test Conditions	Characteristic Values typ.	max.	Unit
I_R	$T_{VJ}=25^oC$; $V_R=V_{RRM}$ $T_{VJ}=25^oC$; $V_R=0.8 \cdot V_{RRM}$ $T_{VJ}=125^oC$; $V_R=0.8 \cdot V_{RRM}$		200 100 14	uA uA mA
V_F	I_F=70A; $T_{VJ}=150^oC$ $T_{VJ}=25^oC$		1.5 1.8	V
V_{TO}	For power-loss calculations only		1.13	V
r_T	$T_{VJ}=T_{VJM}$		4.7	mΩ
R_{thJC} R_{thCK} R_{thJA}		0.25	0.75 35	K/W
t_{rr}	I_F=1A; -di/dt=200A/us; V_R=30V; $T_{VJ}=25^oC$	35	50	ns
I_{RM}	V_R=350V; I_F=60A; $-di_F/dt$=480A/us; L≤0.05uH; $T_{VJ}=100^oC$	19	21	A

FEATURES

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

APPLICATIONS

* Antiparallel diode for high frequency switching devices
* Antisaturation diode
* Snubber diode
* Free wheeling diode in converters and motor control circuits
* Rectifiers in switch mode power supplies (SMPS)
* Inductive heating and melting
* 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

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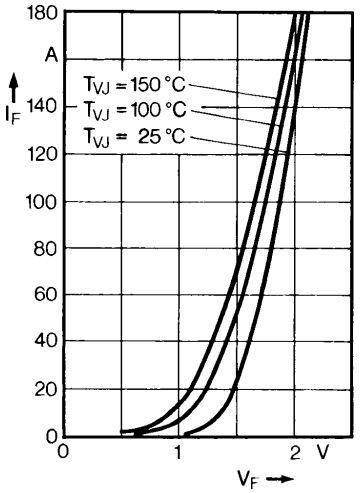

Fig. 1 Forward current versus voltage drop.

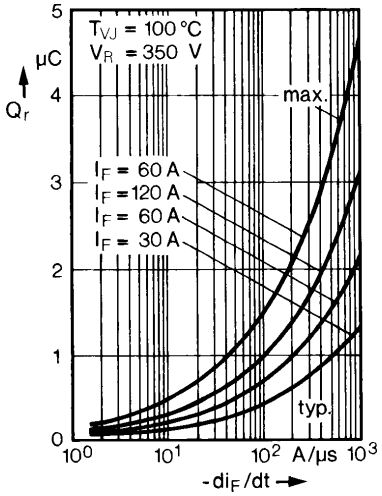

Fig. 2 Recovery charge versus $-di_F/dt$.

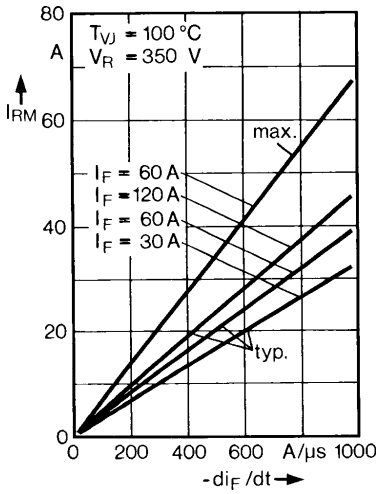

Fig. 3 Peak reverse current versus $-di_F/dt$.

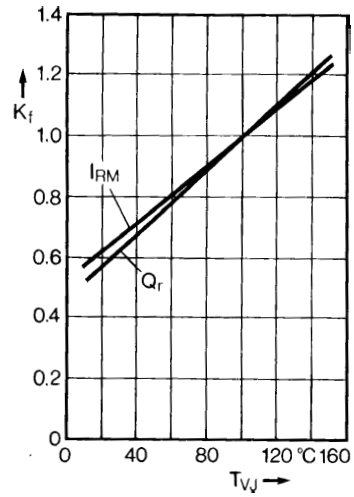

Fig. 4 Dynamic parameters versus junction temperature.

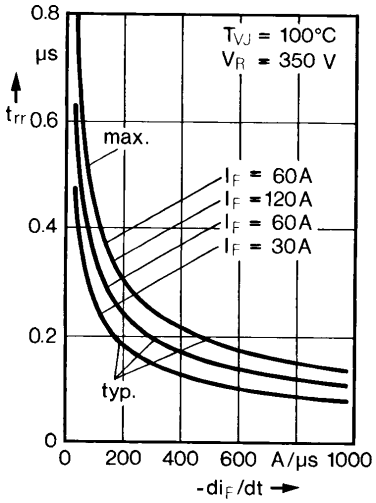

Fig. 5 Recovery time versus $-di_F/dt$.

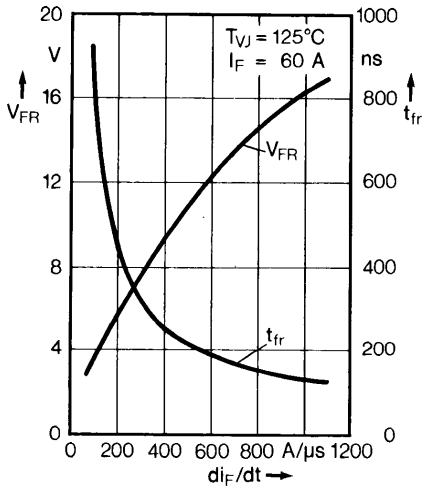

Fig. 6 Peak forward voltage versus di_F/dt.

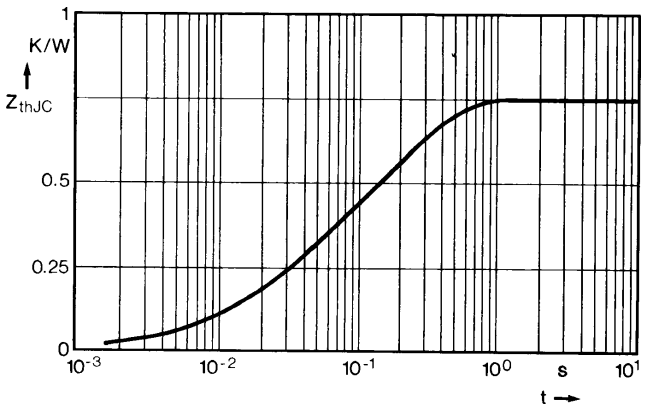

Fig. 7 Transient thermal impedance junction to case.