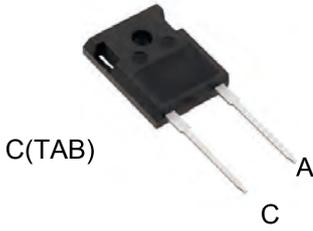


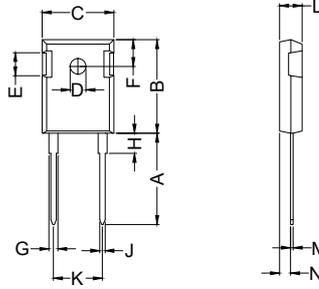
MUR3020, MUR3030

Ultra Fast Recovery Diodes



A=Anode, C=Cathode, TAB=Cathode

Dimensions TO-247AC



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	0.620	0.640
ØD	3.15	3.65	0.124	0.144
E	4.32	5.49	0.170	0.216
F	5.40	6.30	0.213	0.248
G	1.65	2.13	0.065	0.084
H	3.80	4.50	0.150	0.177
J	1.00	1.40	0.039	0.055
K	10.80	11.10	0.425	0.437
L	4.70	5.30	0.185	0.209
M	0.40	0.80	0.016	0.031
N	1.50	2.49	0.059	0.098

	V_{RSM} V	V_{RRM} V
MUR3020	200	200
MUR3030	300	300

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_C=145^{\circ}C$; rectangular, $d=0.5$	70 30	A
I_{FSM}	$T_{VJ}=45^{\circ}C$; $t_p=10ms$ (50Hz), sine	300	A
E_{AS}	$T_{VJ}=25^{\circ}C$; non-repetitive; $I_{AS}=3A$; $L=180\mu H$	1.2	mJ
I_{AR}	$V_A=1.5 \cdot V_R$ typ.; $f=10kHz$; repetitive	0.3	A
T_{VJ} T_{VJM} T_{stg}		-55...+175 175 -55...+150	$^{\circ}C$
P_{tot}	$T_C=25^{\circ}C$	165	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g



Sirectifier®

MUR3020, MUR3030

Ultra Fast Recovery Diodes

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ $T_{VJ}=150^{\circ}\text{C}; V_R=V_{RRM}$		250 1	uA mA
V_F	$I_F=30\text{A}; T_{VJ}=150^{\circ}\text{C}$ $T_{VJ}=25^{\circ}\text{C}$		0.91 1.25	V
R_{thJC} R_{thCH}		0.25	0.9	K/W
t_{rr}	$I_F=1\text{A}; -di/dt=200\text{A}/\mu\text{s}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	30		ns
I_{RM}	$V_R=100\text{V}; I_F=50\text{A}; -di_F/dt=100\text{A}/\mu\text{s}; T_{VJ}=100^{\circ}\text{C}$		7	A

FEATURES

- * International standard package
- * Glass passivated chips
- * Very short recovery time
- * Extremely low switching losses
- * Low I_{RM} -values
- * Soft recovery behaviour
- * RoHS compliance

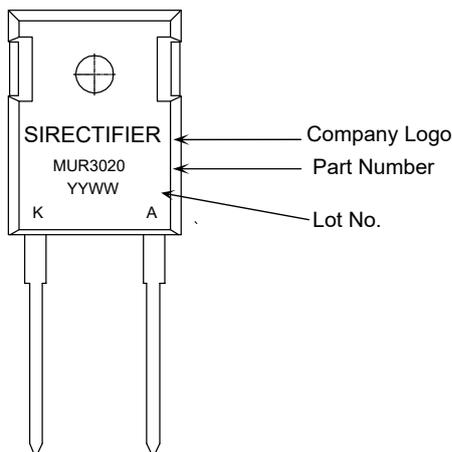
APPLICATIONS

- * 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
- * Uninterruptible power supplies (UPS)
- * Ultrasonic cleaners and welders

ADVANTAGES

- * Avalanche voltage rated for reliable operation
- * Soft reverse recovery for low EMI/RFI
- * Low I_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

MARKING



ORDERING INFORMATION

Part Number	Package	Shipping	Marking Code
MUR3020	TO-247AC	30pcs / Tube	MUR3020
MUR3030	TO-247AC	30pcs / Tube	MUR3030

Sirectifier®

MUR3020, MUR3030

Ultra Fast Recovery Diodes

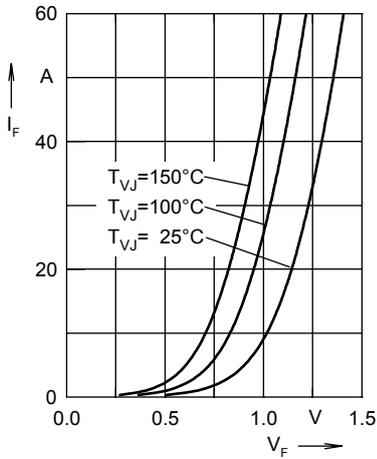


Fig. 1 Forward current I_F versus V_F

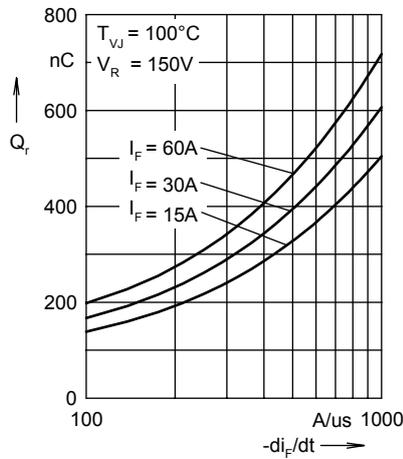


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

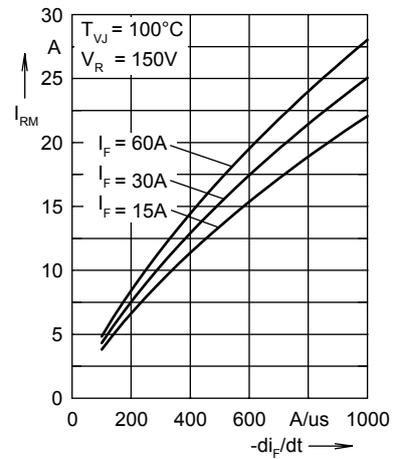


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

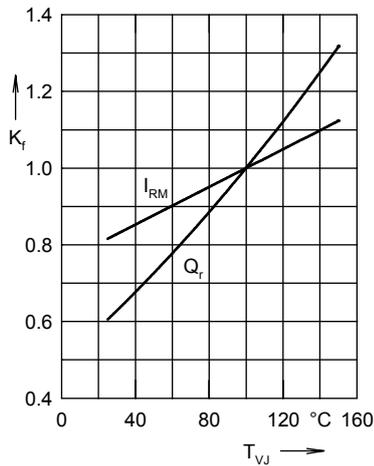


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

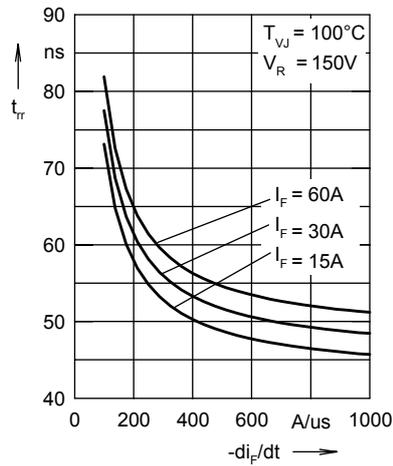


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

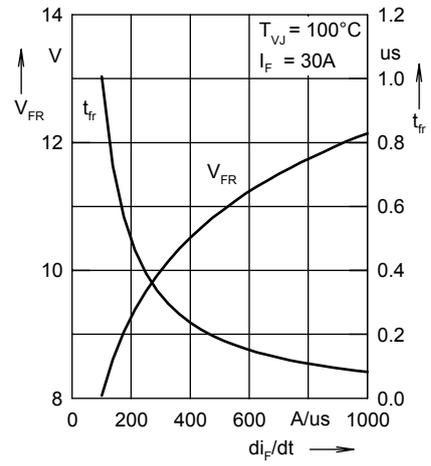


Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

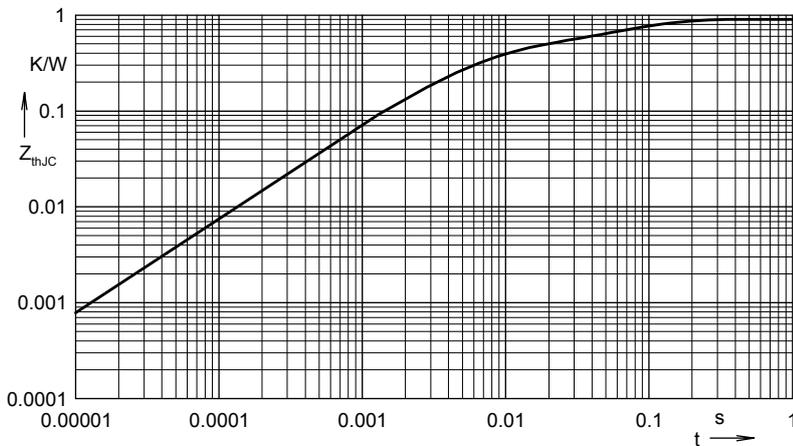


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	$R_{thi}(K/W)$	t_i (s)
1	0.465	0.005
2	0.179	0.0003
3	0.256	0.04