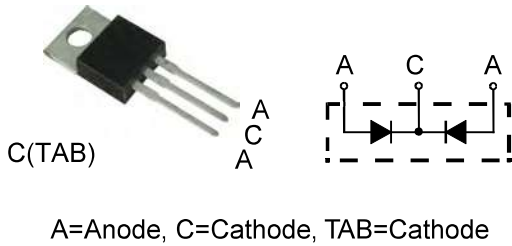
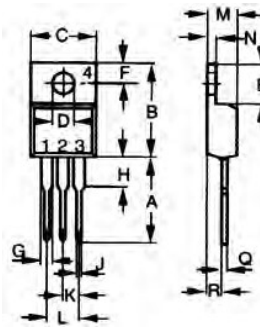


HUR3020CT, HUR3030CT

Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes



Dimensions TO-220AB



Dim.	Inches		Milimeter	
	Min.	Max.	Min.	Max.
A	0.500	0.550	12.70	13.97
B	0.580	0.630	14.73	16.00
C	0.390	0.420	9.91	10.66
D	0.139	0.161	3.54	4.08
E	0.230	0.270	5.85	6.85
F	0.100	0.125	2.54	3.18
G	0.045	0.065	1.15	1.65
H	0.110	0.230	2.79	5.84
J	0.025	0.040	0.64	1.01
K	0.100	BSC	2.54	BSC
M	0.170	0.190	4.32	4.82
N	0.045	0.055	1.14	1.39
Q	0.014	0.022	0.35	0.56
R	0.090	0.110	2.29	2.79

	V_{RSM}	V_{RRM}
	V	V
HUR3020CT	200	200
HUR3030CT	300	300

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_C=135^{\circ}C$; rectangular, $d=0.5$	35 2 x 15	A
I_{FSM}	$T_{VJ}=45^{\circ}C$; $t_p=10ms$ (50Hz), sine	140	A
E_{AS}	$T_{VJ}=25^{\circ}C$; non-repetitive; $I_{AS}=2.5A$; $L=180\mu H$	0.8	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}	$T_C=25^{\circ}C$	95	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

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Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$		100	μA
	$T_{VJ}=150^{\circ}\text{C}; V_R=V_{RRM}$		0.5	mA
V_F	$I_F=15\text{A}; T_{VJ}=150^{\circ}\text{C}$		1.21	V
	$T_{VJ}=25^{\circ}\text{C}$		1.68	
R_{thJC} R_{thCH}		0.5	1.6	K/W
t_{rr}	$I_F=1\text{A}; -di/dt=100\text{A}/\mu\text{s}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	30		ns
I_{RM}	$V_R=100\text{V}; I_F=25\text{A}; -di_F/dt=100\text{A}/\mu\text{s}; T_{VJ}=100^{\circ}\text{C}$		2.7	A

FEATURES

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

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

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Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes

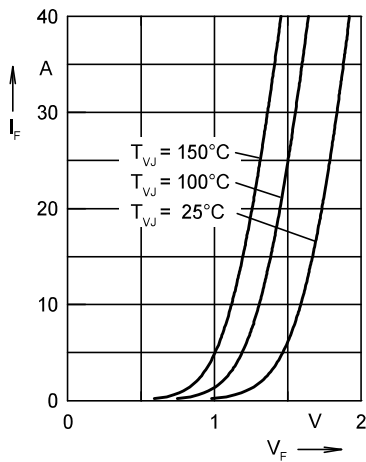


Fig. 1 Forward current I_F versus V_F

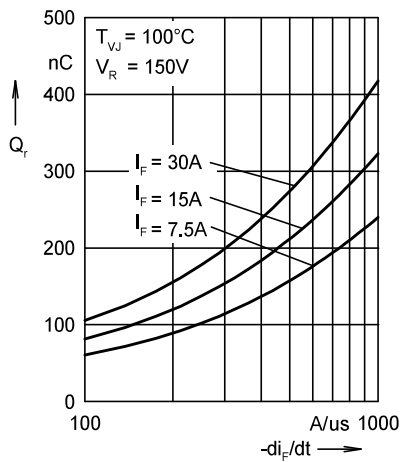


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

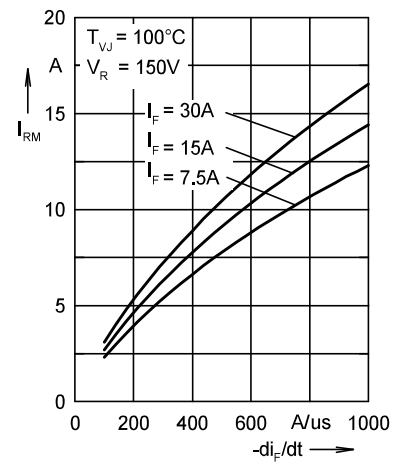


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

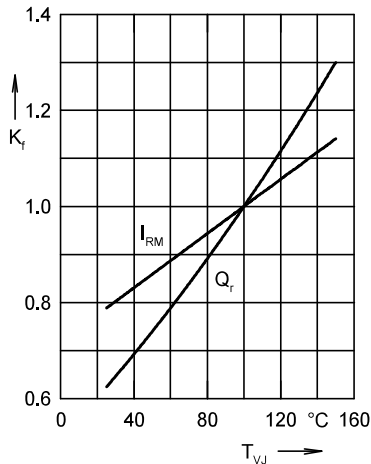


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

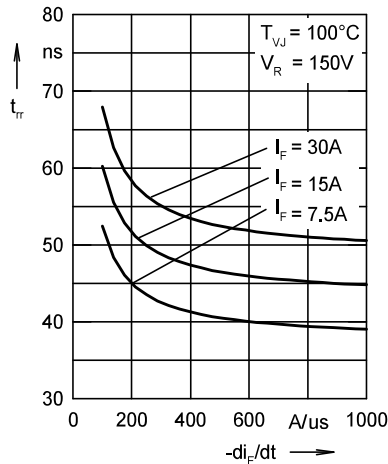


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

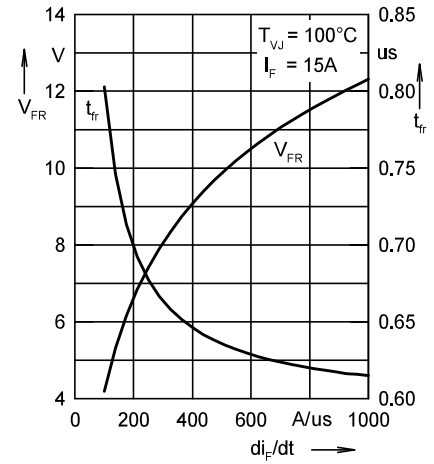


Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

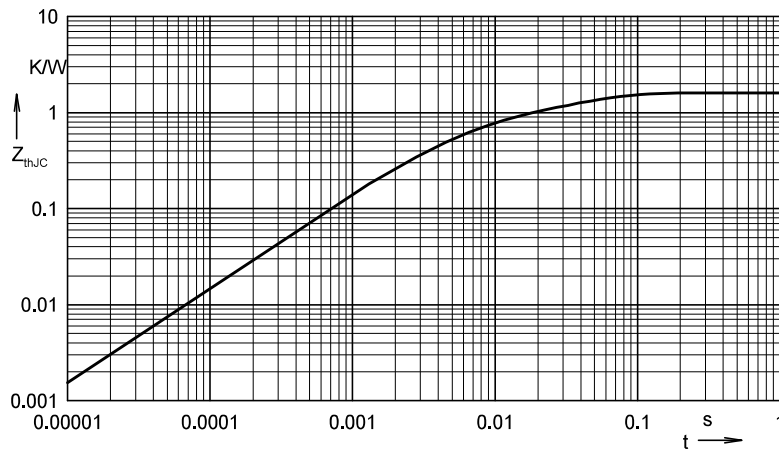


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (KW)	t_i (s)
1	0.908	0.005
2	0.35	0.0003
3	0.342	0.017